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THE OECD APPROACH TO MEASURING INCOME DISTRIBUTION AND POVERTY: STRENGTHS, LIMITS AND STATISTICAL ISSUES

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Introduction

1. Inequalities and poverty matter not just in poor developing countries but also in developed ones. While inequality and poverty manifest themselves in a variety of dimensions, 'income' is one of its most evident manifestations, and the only that lends itself to periodic comparisons across countries and over time. Most people in OECD countries do care about income inequalities and are capable of articulating judgements on the shape of the income distribution. When asked about whether income inequalities in their country are "too high" or "too low", a majority of respondents in all OECD countries indicate the first option, even if with large differences across countries in the size of this group¹ Greater income inequality matters not only in itself – as an key element for the evaluation of overall well-being in society – but also instrumentally, i.e. as a means of attaining other valuable goals: politically, high inequality can fuel populist and protectionist sentiments, which may lead to policies inimical to economic growth; economically, high inequality means a waste of human resources implied by a large portion of the population out of work or trapped in low-paid, low-skilled jobs.

2. In 2008, the OECD released a major report on trends and driving factors of income distribution in OECD countries, "*Growing Unequal?*". This report renews with a long tradition of OECD work on these issues, and has generated much interest and debate. One of the main findings of the report is that, over the past two decades, income inequality has widened in more than three-quarters of OECD countries. While this conclusion may seem obvious to most commentators and analysts monitoring developments in each individual country, it is not so in a comparative perspective. Has this trend affected all industrialised countries with similar intensity? Has it intensified over time? Does it reflect universal causes (e.g. linked to demographic factors, technical progress and globalisation) or do national circumstances make a difference?

3. In order to benchmark countries-performance in this field the OECD has developed over the years a statistical infrastructure which made use of a number of standardised concepts and classifications. While inequalities and poverty are not only, or even mainly, about income, statistical information on the distribution of household incomes can be compared across all OECD member countries in a more reliable way than that for other monetary (e.g. wealth, consumption) and non-monetary (e.g. health, education) dimensions. This is why a significant part of the OECD report focuses on incomes.

¹ These differences ranged from two thirds in the United States to nine tenths in a number of European countries. See Förster and Mira d'Ercole (2005), based on surveys undertaken in 1999 under the aegis of the International Social Science Programme. More recent data for individual countries suggest, if anything, that these sentiments have increased further in the 2000s, both in the boom years that preceded the "bubble" and in those that followed its bust.

4. Section 1 of this paper describes the OECD “history” of research into income distribution and poverty, dating back to the mid-1970s. It also discusses some of the methodological and conceptual choices that have been made to construct more comparable indicators. Section 2 reviews some of the main findings from the latest OECD study “*Growing Unequal?*”. Section 3 considers limits of the OECD approach and describes some of the steps that could be undertaken to overcome those. Section 4 concludes.

Main features of the data collection and methodology

5. The OECD has a long association with research on the distribution of household income. The first milestone in OECD work on this issue is represented by Sawyer (1976) who, in an article for the OECD *Economic Outlook*, reviewed the performance of 12 OECD countries in the late 1960s and early 1970s, based on the measures that were most commonly used in each country. An important drawback of this study was that it was based on commonly-used definitions of inequality and poverty. Because of this limit, and of the political controversies raised by the release of its findings, it took almost 20 years before the OECD ventured to analyse these issues again.

6. A second milestone is represented by the report prepared by Atkinson, Rainwater and Smeeding (1995), who presented results referring to 12 OECD countries in the second half of the 1980s. These results were based on unit-record data from the Luxembourg Income Study (LIS) database, a standardised data environment that allows analysts to apply common definitions to micro records from different national surveys. This study was critical in establishing that a reasonable degree of comparability across countries could be assured by working on the unit-record data of individual countries, and that the patterns highlighted by these comparisons had the potential to enrich policy discussions. However, the discussion of the main results of the report with national authorities also highlighted areas where the “reclassified” LIS data departed from national data. At about the same time, and based on the same micro data from LIS, the OECD also published a review of the methodological options for the measurement of low incomes and poverty for international comparisons between developed market economies (Förster 2004a) and applied these to a subset of 14 OECD countries (Förster 2004b).

7. The third phase of OECD work began with the regular data collection undertaken by the OECD (at around five-year intervals) through a network of national consultants who provide standard tabulations based on comparable definitions and methodological approaches. This is done via a detailed data questionnaire and terms of references, described in Annex 1. The first wave of this data collection was undertaken jointly by the OECD Employment, Labour and Social Affairs Directorate and the OECD Economic Department, and included 13 OECD countries in the mid-1980s and mid-1990s. Results were published in Burniaux et al. (1998) and Oxley et al. (1999). A second wave extended the coverage to 21 countries and included additional indicators (Förster and Pellizari 2000, Förster and Pearson 2002). The third wave of data collection added results for a year around 2000 for 27 OECD countries, with results summarised in Förster and Mira d’Ercole (2005). The latest wave of data collection, which served as one major input for the publication “*Growing Unequal?*” (2008), updated income information to the mid-2000s and included, for the first time, all 30 OECD member countries.

8. This approach to data collection, based on a network of national contact points, allows covering a broader range of OECD countries, based on information that is both more up-to-date relative to that available through other statistical sources and better suited for assessing changes in income distribution over time. Its disadvantage is that it does not allow accessing the original micro-data, which constrains the analysis that can be performed.

9. The OECD data collection strives to achieve both comparability across countries and on consistency over time.² The latter implies that discontinuities, due to either changes in the statistical source used or to changes in survey design or weighting, are generally addressed by collecting data for the same year both on a “new” and “old” basis, and then chain-linking the various indicators. This procedure for correcting breaks has been implemented, so far, for 10 countries. In other cases – notably 6 of the EU countries which recently shifted to using the new EU-SILC survey and discontinued the national surveys previously used by the OECD – no common data year was available and this constitutes a break in series.

10. A series of methodological choices has been made in order to ensure the highest possible degree of comparability. The following describes some of their main features.

Income rather than consumption

11. Although economic analysis of poverty and inequality is ultimately interested in consumption possibilities, the OECD data focus on (disposable) household income. Indeed, the practice of comparing data on the distributions of income for some countries with data on consumption for others is potentially misleading, for the reasons that are detailed by Atkinson and Brandolini (2001). There are several reasons why the socially-necessary minimum income (Y^*) may differ from necessary minimum expenditure (E^*). A household may attain E^* with an income below Y^* by relying on the goods produced by the households, by dissaving or by borrowing. On the other hand, an income above Y^* may not be sufficient to attain E^* due to certain market failures (access to housing is, for instance, typically rationed for newcomers, e.g. immigrants). Choosing income over consumption (or spending) as an indicator for poverty and material living standard implies focusing on the capacities of individuals and households to participate in the mainstream of their society rather than on their actual consumption behaviour. Income as a yardstick is also used by LIS as well as the EU in the frame of the “at-risk-of-poverty indicators”.³

12. The definition of income at the micro level is, however, not trivial. As a matter of fact, many countries use significantly different definitions for national publications on poverty and income inequality, e.g. gross income (in the United States); net income before housing costs (in Germany); net income after housing costs (in the United Kingdom); or income pre-tax but post-social contribution paid by workers (in France).

13. The OECD definition of household income follows the definitions put forward by the Canberra Group (Franz et al. 1998, Expert Group 2001) and of LIS (Smeeding et al. 1990). Table 1 sets out the standard accounting framework that is underlying these definitions. In this framework, income from wages and salaries, self-employment and property sum up to “factor income”; factor income plus occupational pensions gives “market income”; market income plus public and private cash transfers, as well as other types of cash income, produces “gross income”; finally, gross income minus personal income and wealth taxes and workers social security contributions gives “cash disposable income”. This last concept is used as the main measure of household well-being. The approach set out in Figure 1 is an accounting framework that allows different components of income to be related to each other and suitable aggregates to be derived: however, as will be discussed below, the framework is both linear and static. These limits matter for the interpretation of results.

² For instance, the choice of the statistical sources to use for the OECD income distribution questionnaire is made in consultation with national authorities and consultants. A key criterion for that choice is that of temporal consistency between years.

³ Before changing to income in the mid-1990s, the European Community was using consumption as a yardstick for poverty measurement, namely 50% of the mean equivalent household expenditure, arguing that “household expenditure is a more reliable indicator for permanent income”. (EUROSTAT 1990).

Table 1. The income accounting framework

<i>Income component</i>
Gross wages and salaries from dependent employment
+
Self-employment income
+
Capital and property income
=
1. Factor income
+
Occupational and private pensions
=
2. Market income
+
Social security cash benefits (universal, income-related, contributory)
+
Private transfers
+
Other cash income
=
3. Gross income
-
Income tax (and employee social security contributions)
=
4. Cash disposable income

14. The time frame over which household income is assessed in the OECD questionnaire is the year, rather than weekly or monthly income. However, in some countries, the statistical assessment is shorter (often monthly and sometimes weekly income, which are then converted into annual values). Again, differences in the period over which income is assessed may influence comparative assessment: monthly (or weekly) income may be expected to fluctuate more than annual income, which would lead to an over-estimation of income inequality and poverty.⁴ Unfortunately, the cross-country differences that exist in this (and other) respects could only be addressed through greater *ex ante* standardisation in survey practices. For a range of reasons (e.g. easiness in remembering), annual income seems the measure that is most suited to international comparisons. A further advantage of adopting the year as the accounting period is that comparisons can readily be made with total income data from the National Accounts.

Counting people rather than households

15. Most European research on income inequality has traditionally looked at the distribution of disposable income among individuals, while keeping the household (and, more rarely the family) as the unit within which income is pooled and shared among its members; conversely, most analyses in the United States have focused on the distribution of (pre-tax) income among families (and, more rarely, households). The OECD questionnaire describes the distribution of income among people rather than among households, i.e. taking the individual as the fundamental units of analysis. This implies that the income of the household is attributed to each of its members, irrespectively of who in the household receives that income. Technically, this means (under the current OECD convention) that a couple with two

⁴ Some evidence exists. For example, Gibson et al. (2001) analyse 1992 micro data for two urban areas in Hebei and Sichuan in China to demonstrate that various measures of income inequality are higher (by 17% for the percentile ratio, and by 23% for the Gini coefficient) when relying on a measure for monthly, rather than annual, income.

children is counted four times rather than only once.⁵ In practice, taking the individual as unit of analysis also assumes equal sharing of resources within a household. While this assumption may conceal inequalities in the distribution of income within the household (e.g. between men and women, or adults and children) it is obviously preferable than the alternative assumption of no sharing of resources within the household.⁶ It has been shown, however, that differences between inequality measures based on those two unit of analysis are not very large, especially when assessed in a comparative perspective (EUROSTAT 1990).

Accounting for economies of scale

16. Taking the individual as reference requires adjusting income to reflect differences in needs for households of different sizes. With equivalence scales, each household type in the population is assigned a value in proportion to its needs. The factors commonly taken into account to assign these values are the size of the household and the age of its members (i.e. whether they are adults or children). A wide range of equivalence scales exist, many of which are reviewed in Atkinson et al. (1995). Some of the most commonly used scales include the following:

- The “OECD equivalence scale” assigns a value of 1 to the first household member, of 0.7 to each additional adult, and of 0.5 to each child. This scale (also called “Oxford scale”) was mentioned by OECD (1982) for “possible use in countries which have not established their own equivalence scale”. For this reason, this scale is sometimes labelled “(old) OECD scale”.
- The “OECD-modified scale”. After having used the “old OECD scale” in the 1980s and the earlier 1990s, the Statistical Office of the European Union (EUROSTAT) adopted in the late 1990s the so-called “OECD-modified equivalence scale”. This scale, first proposed by Haagenars et al. (1994), assigns a value of 1 to the household head, of 0.5 to each additional adult member and of 0.3 to each child.⁷
- The Square Root Scale. Recent OECD publications comparing income inequality and poverty across countries use a scale which divides household income by the square root of household size.⁸ This implies that, for instance, a household of four persons has needs twice as large as one composed of a single person. However, some of the country reviews undertaken by the OECD, especially for Non-Member Economies, apply the equivalence scales that are in use in each country.

⁵ Focusing on individuals rather than households has also been based on the argument according to which each individual in society should be treated as “equal citizen” in the distribution (Jarvis and Micklewright 1995). It also has been included in recommendation 9 in Atkinson et al. (2002) with the argument that “individuals are at the heart of our concern”.

⁶ For a discussion of intra-household and intra-family inequality and possible effects on poverty and distribution estimates, see for example Haddad and Kanbur (1990), Jenkins (1991), Sutherland (1997) or Orsini et al. (2005).

⁷ As a matter of fact, already a very early OECD study included income comparisons on the basis of a scale very close to the OECD-modified scale (OECD 1976).

⁸ This means an “equivalence elasticity” of 0.5. OECD’s initial methodological paper proposed and applied a similar but somewhat steeper equivalence scale with an elasticity of 0.55, labelled “policy-based scale” as it was derived as the median value of elasticities inherent in social assistance programmes of 22 OECD countries (Förster 1994a).

17. Table 2 illustrates how needs are assumed to change, as household size increases, for the three equivalence scales described above and for the two “extreme” cases of no sharing of resources within household (per-capita income) and full sharing (household income). In general, all equivalence scales are, to some extent, conventional, rather than based on the analysis of consumption expenditure for various countries. There is no universally accepted method for determining equivalence scales, and no equivalence scale is recommended by the OECD for general use.

Table 2. Equivalence scales and corresponding elasticities

Household size	Equivalence scale				
	per-capita income	“Oxford” scale (“Old OECD scale”)	“OECD-modified” scale	Square root scale	Household income
1 adult	1	1	1	1	1
2 adults	2	1.7	1.5	1.4	1
2 adults, 1 child	3	2.2	1.8	1.7	1
2 adults, 2 children	4	2.7	2.1	2.0	1
2 adults, 3 children	5	3.2	2.4	2.2	1
<i>Elasticity</i> ¹	1	0.73	0.53	0.50	0

1. Using household size as the determinant, equivalence scales can be expressed through an “equivalence elasticity”, i.e. the power by which economic needs change with household size. The equivalence elasticity can range from 0 (when unadjusted household disposable income is taken as the income measure) to 1 (when per capita household income is used). The smaller the value for this elasticity, the higher the economies of scale in consumption.

18. The choice of a particular equivalence scale depends on technical assumptions about economies of scale in consumption as well as on value judgements about the priority assigned to the needs of different individuals such as children or the elderly. These judgements will affect results. For example, the poverty rate of the elderly will be lower (and that of children higher) when using scales that give greater weight to each additional household member. In selecting a particular equivalence scale, it is therefore important to be aware of its potential effect on the level of income inequality and poverty, on the size and composition of the poor population, and on the ranking of countries. Studies have documented that income poverty rates are higher when using the extreme assumptions of per-capita income (e=0) and household income (e=1) than for intermediate elasticities, thus displaying a u-shaped function⁹ (Jenkins 1991 for the United Kingdom; Förster 2004a for a larger sample of OECD countries). Sensitivity analyses also suggest that while both the level and, in particular, the composition of income poverty are affected by the use of different equivalence scales, trends over time and rankings across countries are much less affected (Burniaux et al., 1998). While the choice of the most appropriate equivalence scale has been the subject of much discussion in individual countries (*inter alia* because of its importance for access to welfare benefits) this choice is less critical for the purposes of benchmarking countries performances.

Focusing on relative rather than absolute poverty

19. For the purposes of measuring poverty, the OECD questionnaire focuses on relative income indicators, as opposed to absolute income or subjective measures (i.e. the income level that people in each country would regard as “needed” to avoid poverty). Both absolute and subjective income thresholds pose difficult methodological issues for cross-country comparison of poverty (Förster 1994a), which the relative approach tries to overcome by comparing the incomes of each person to that of the resident population as a

⁹ This relates to the fact that both small households (e.g. single elderly) and large households (e.g. families with many children) tend to have above-average poverty risks.

whole. This approach thus takes into account the different levels of well-being within a society and how it changes over time. Relative measures also allow one to compare income situations across countries, because they are independent of a specific country's definition of basic needs.

20. An additional reason for focusing at relative poverty is that both psychological and economic analyses have suggested that income differences within a society have real significance for the well-being of each person: people assess their own conditions through comparisons with others (Boarini et al., 2006). This implies that information on relative income matters for the assessment of the living conditions of people, independently of judgements on what is "fair" in society.

21. Income poverty is measured according to the so-called economic distance approach, namely as a fraction of average (mean or median) income. The choice for one specific threshold is arbitrary but the presentation of results referring to a range of various thresholds (40%, 50% and 60% of the median) allows users to benchmark country performance according to their own view. The main threshold used in the OECD framework is 50% of median equivalised household disposable income.¹⁰ In addition to poverty rates (or headcounts), other measures of relative poverty (such as poverty gaps, i.e. the distance between the average income of the poor and the poverty threshold) are also collected.

22. That said, the OECD s also includes other poverty thresholds. One way to illustrate how "absolute" poverty has changed over time is to use a relative threshold in a base year which is then kept unchanged in real terms in later years (i.e. it is adjusted only for changes in consumer price inflation, as measured by the CPI). In particular, measures of income poverty "anchored" to a specific year are calculated based on a threshold set at half of median income in the mid-1990s.¹¹ In addition, the real value of poverty thresholds expressed in purchasing power parities for actual consumption are also presented. These various indicators allows judging the estimates of relative poverty into the perspective of overall income differentials between countries.

Static rather than dynamic measures

23. The OECD income distribution questionnaire collects indicators referring to a benchmark year from the mid-1980s (mid-1970s for a few countries) until the mid-2000s, in approximate 5-years periods. (Table 3). The data are cross-sectional, i.e. households are not followed over periods though some of the underlying surveys could allow tracking changes over time for the same person. One problem, for analysis of changes over time, is that inequality and poverty indicators for individual countries refer to specific years that may differ in terms of the cyclical position of each country. In theory, changes between these years may not be fully representative of underlying trends. In practice, a comparison with "commonly used" measures of income inequality for several OECD countries suggests that this consideration is of limited practical importance for most countries¹².

¹⁰ The (absolute) poverty line used in the United States is closer to 40% of median income, while a threshold of 60% of median income is used as a benchmark for "at-risk-of-poverty" at the EU level. EUROSTAT had previously used 50% of the average consumption as a poverty benchmark. It should be noted that poverty rates based on these latter two benchmarks are very similar. One of the reasons to adopt the 60%-median benchmark therefore was to ensure a certain comparability and traceability of published poverty estimates in EU Europe over time. Another reason was to avoid the poverty estimates to be sensitive to few very low incomes.

¹¹ The EU set of social inclusion indicators includes a similar measure, namely the at-risk-of-poverty rate "anchored" in year t-3 and uprated by inflation over the following three years.

¹² Annual time-series of "commonly used" measures of income inequality in nine OECD countries — shown in Atkinson (2002) — display relatively minor variations around the trend (with the exception of Italy).

Table 3. Survey sources and income years of OECD income distribution questionnaire

<i>Country</i>	<i>Source</i>	<i>Income year</i>				
Australia	<i>Survey of Income and Housing</i>			1994	1999	2003
				/95	/00	/04
Austria	<i>Micro census</i>	1983		1993	1999	2004
	<i>EU Survey of Income and Living Conditions</i>					
Belgium	<i>Tax records</i>	1983		1995		
	<i>European Community Household Panel</i>			1995	2000	
	<i>EU Survey of Income and Living Conditions</i>					2004
Canada	<i>Survey of Consumer Finances</i>	1975	1985	1995		
	<i>Survey of Labour and Income Dynamics</i>			1995	2000	2005
Czech Republic	<i>Micro census</i>			1992	1996	2002
	<i>EU Survey of Income and Living Conditions</i>					2004
Denmark	<i>Danish Law Model System</i>	1983		1994	2000	2005
Finland	<i>Household Budget Survey</i>	1976	1986	1995	2000	2004
	<i>Income Distribution Survey</i>					
France	<i>Enquête Revenus Fiscaux</i>	1984	1989	1994	2000	2005
	<i>EU Survey of Income and Living Conditions</i>					2004
Germany	<i>German Socio Economic Panel (old Länder)</i>	1985	1990	1995		
	<i>German Socio Economic Panel (all Länder)</i>			1995	2000	2004
Greece	<i>Household Budget Survey</i>	1974	1986	1994	1999	2004
Hungary	<i>Hungarian Household Panel/Household Monitor Survey</i>			1991	1995	2000
						2005
Iceland	<i>EU Survey of Income and Living Conditions</i>					2005
Ireland	<i>Living in Ireland Survey</i>	1987		1994	2000	
	<i>EU Survey of Income and Living Conditions</i>					2004
Italy	<i>ITAXMOD95</i>	1984	1991	1993		
	<i>MASTRIC (microsimulation models based on Bank of Italy Survey of Household Income and Wealth)</i>			1995	2000	2004
Japan	<i>Comprehensive Survey of Living Condition of the People on Health and Welfare</i>	1985		1995	2000	2003
Korea	<i>Household Income and Expenditure Survey (combined with Farm Household Economy Survey)</i>					2006
Luxembourg	<i>Panel Socio-Economique Liewen zu Lëtzebuerg</i>	1986		1996	2001	2004
				/87		
Mexico	<i>Survey of Household Income and Expenditure</i>	1984		1994	2000	2004
Netherlands	<i>Income Panel Survey</i>	1977	1985	1990	1995	2000
				1995	2000	2004
New Zealand	<i>Household Economic Survey</i>	1986	1991	1996	2001	2004
Norway	<i>Income Distribution Survey</i>	1986		1995	2000	2004
Poland	<i>Household Budget Survey</i>				2000	2004
	<i>EU Survey of Income and Living Conditions</i>					
Portugal	<i>Household Budget Survey</i>	1980	1990	1995	2000	
	<i>EU Survey of Income and Living Conditions</i>					2004
Spain	<i>Continuous Survey of Household Budgets</i>	1985	1990	1995		
	<i>European Community Household panel</i>			1995	2000	
	<i>EU Survey of Income and Living Conditions</i>					2004
Sweden	<i>Income Distribution Survey</i>	1975	1983	1991	1995	2000
					2000	2004
Switzerland	<i>Income and Consumption Survey</i>				-01	-05
						2004
Turkey	<i>Household Income and Consumption Survey</i>	1984		1994		
United Kingdom	<i>Family Expenditure Survey</i>	1975	1985	1991	1995	2000
	<i>Family Resources Survey</i>					2004
United States	<i>Annual Social and Economic Supplement to the Current Population Survey</i>	1974	1984	1995	2000	2005

24. Nothing of the above methodological choices and approaches are new or path-breaking. To the contrary, most choices seem rather “conservative” and not very controversial. The value of the exercise is the setting up of an infrastructure that is maintained and updated over time.

Main results from the analysis

25. This section reviews some of the patterns identified in past waves of the OECD income analyses. Emphasis is here given to those patterns which pertain to the OECD area as a whole, rather than to highlight country differences.

Large differences in the shape of the income distribution across countries

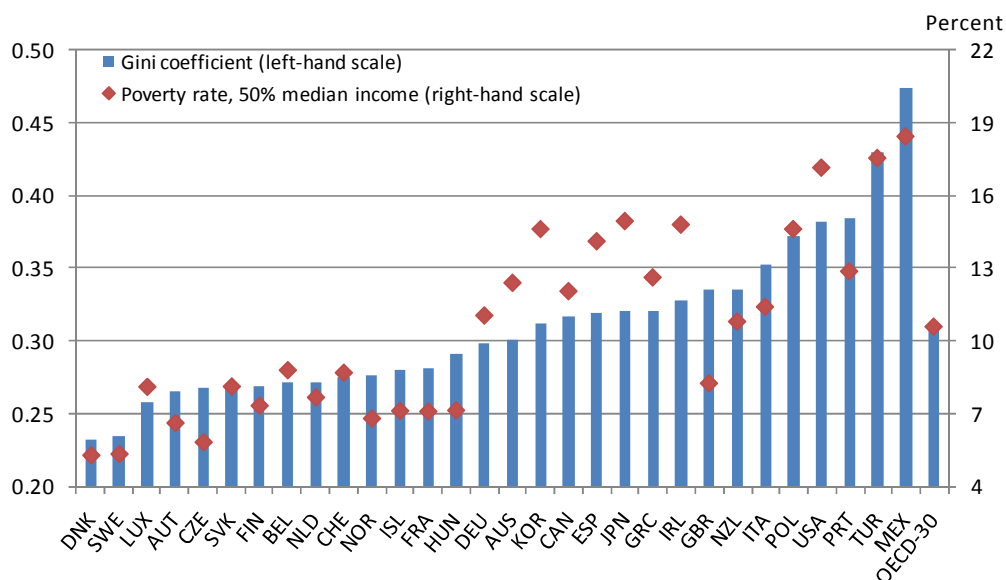
26. Differences in the overall shape of the distribution of household income across OECD countries are both large and persistent. The Gini coefficient of income inequality is twice as high in Mexico (the OECD country where income distribution is widest) as in Denmark (the country where income distribution is narrowest), and differences remain large when excluding from the analysis countries at both ends of the league table of OECD countries (Figure 2). Significant cross-country differences in inequality are found regardless of the measure used, with the ranking of countries little affected by which one is used.¹³ When income distributions are compared between pairs of countries, in a large majority of cases the Lorenz curves do not cross each other. There are of course uncertainties about the *precise* level of inequality in any country, because of small sample sizes, under-reporting of certain types of income, and over-representation of some demographic groups. Different statistical sources for the same country may also sometimes provide a different picture of how household income is distributed. But these uncertainties are not so large as to give serious grounds for doubting the broad sweep of the findings in terms of cross-country differences in inequality.

27. Large cross-country differences are also evident when looking at income poverty. While Figure 1 shows only one measure of relative income poverty (the poverty headcount, based on a threshold set at 50% of median income, shown as a diamond), cross-country patterns are fairly robust with respect to the choice of different thresholds.¹⁴ Relative poverty rates are always among the lowest, whatever the threshold used, in Sweden, Denmark and the Czech Republic, and always among the highest in the United States, Turkey and Mexico; they are below-average in all Nordic and several Continental European countries, and above-average in Southern European countries as well as Ireland, Poland, Japan and Korea. A composite measure of poverty – constructed by combining information on both the number of poor people in each country and how much their income falls below the poverty line – ranged in the mid-2000s from around 1% of household income in Sweden to around 7% in Mexico.

¹³ This refers to five alternative inequality indicators, MLD, SCV, P90/P10, P50/P10 and S80/S20 (see “Growing Unequal?”, Annex 1.A2).

¹⁴ Income poverty rates for additional thresholds – 40% and 60% of median income – are shown in Chapter 5 (Figure 5.1) of “Growing Unequal?”.

Figure 1. Levels of income inequality and income poverty in the mid-2000s



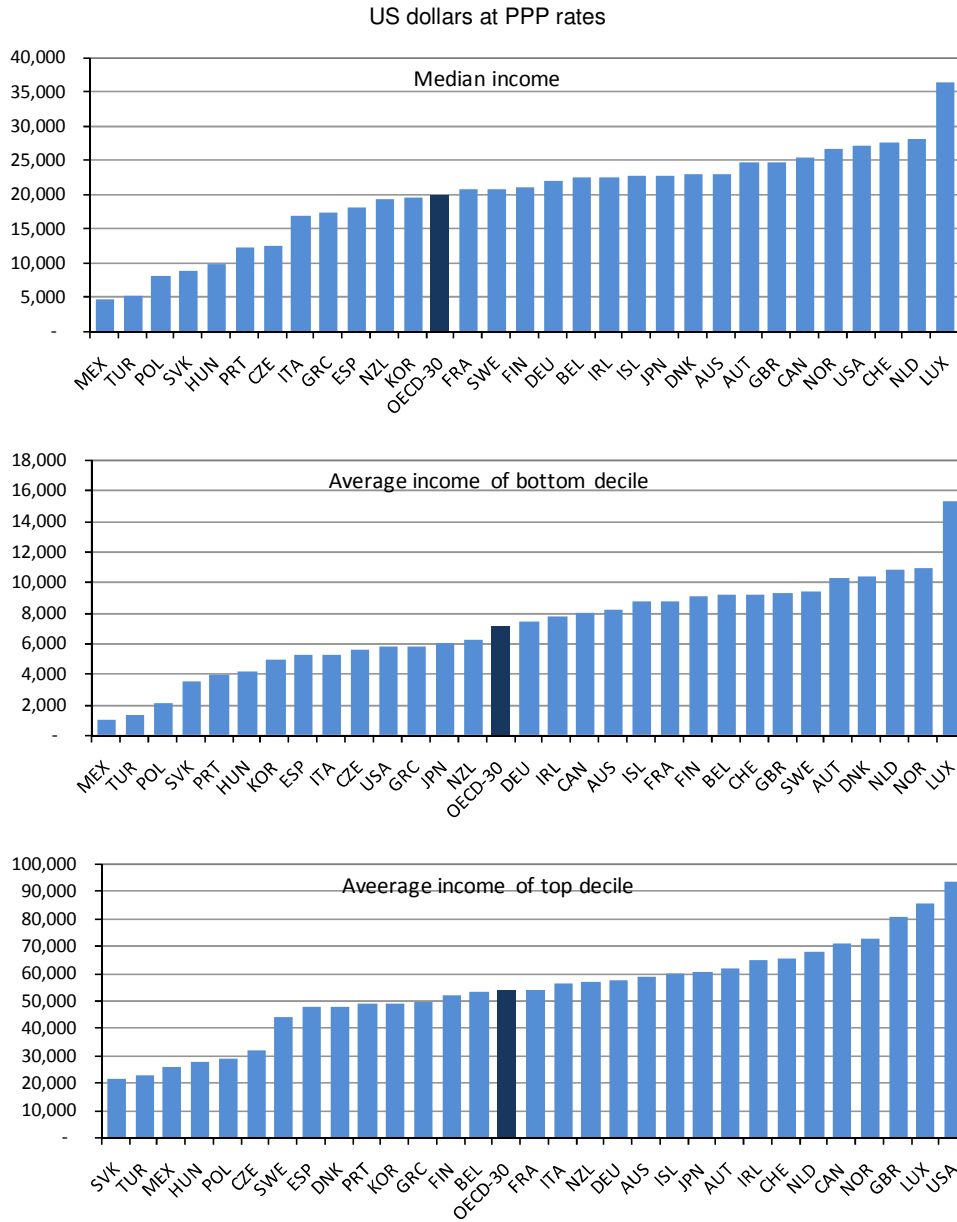
Note: Countries are ranked in increasing order of the Gini coefficient of income inequality. Data refer to the distribution of household disposable income in cash across people, with each person being attributed the income of the household where they live adjusted for household size. Poverty rates are defined as the share of individuals with equivalised disposable household income less than 50% of the median for the entire population.

Source: Growing Unequal?

28. Data on the absolute income level of people and families at different points of the distribution are also important for cross-country comparisons of economic welfare. Across countries, measures of mean equivalised household disposable income are highly correlated with conventional SNA aggregates (such as Net National Income). There are, however, wide differences across countries in terms of:

- the income gap (in USD at PPP rates) between people at the top and bottom of the distribution (this gap ranges from USD 20 000 in the Slovak Republic to more than USD 85 000 in the United States).
- how people at similar points in a country's income distribution compare across countries – with the United States, for example, topping the league by a wide margin in terms of the average income of people in the top decile, while coming fourth (after Luxembourg, the Netherlands and Switzerland) when looking at median income, and 12th in terms of average income of the bottom decile (Figure 2).

Figure 2. Income levels for people at different points in the distribution, mid-2000s



Note: The data refer to equivalised household disposable income of people at different points of the distribution. Income data for each country are adjusted for inflation (when they refer to a year different from 2005) and then converted into US dollars based on PPP rates for actual consumption in 2005. This exchange rate expresses the costs of a standard basket of consumer goods and services purchased on the market or provided for free (or at subsidised rates) by the public sector in different countries.
Source: Growing Unequal?

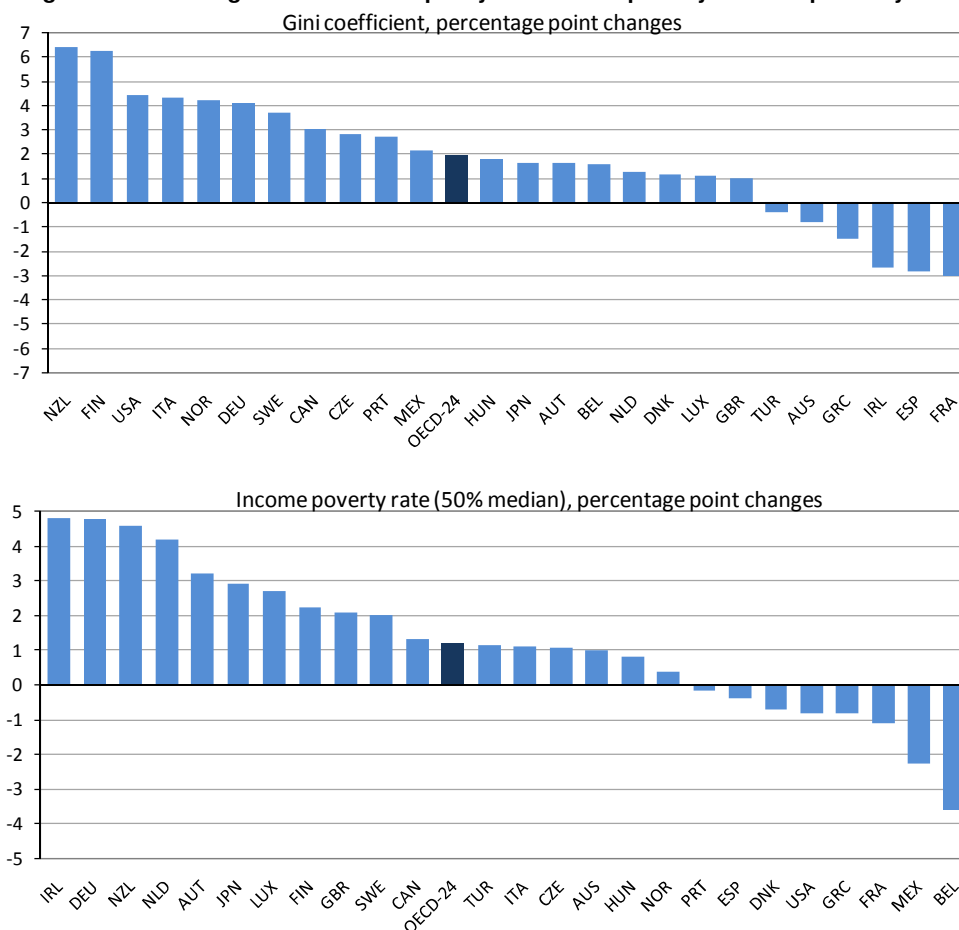
A widening in income inequality in a large majority of OECD countries

29. The past 20 years have experienced a widening of the income distribution in most OECD countries. On average, the Gini coefficient of income inequality increased by around 2 percentage points, *i.e.* 7% (Figure 3), and is equivalent to each person below the median transferring around 7% of their income to all those above the median. Other summary measures such as the standard coefficient of variation point to larger increases – by almost 30% since the mid-1980s – but these are more affected by developments at the extremes of the distribution. In all cases, these increases – while significant – fall short of the sharp rises sometimes advanced in public discussion on the subject.

30. Further, this increase has not affected all countries – as witnessed by declines in France, Ireland and Spain (where consistent time-series are limited up to the year 2000) and broad stability in many other countries (in 11 countries, changes were below 2 percentage points). The increase in income inequality was also larger in the decade from the mid-1980s to the mid-1990s than in the most recent decade, with some countries (*e.g.* Mexico, Turkey) recording large swings in performance. Since 2000, income inequality has increased significantly in Canada, Germany, Norway and the United States while declining in the United Kingdom, Mexico, Greece and Australia. These differences in how income inequalities have changed over time are important, as they suggest that the importance of common drivers (whatever their exact nature, *e.g.* globalisation) has not been important enough as to cancel out the importance of country specific factors.

31. The poverty headcount, based on a threshold set at half of median income, has also risen in most countries in the past 20 years, edging up by 0.6 percentage points in each of the two decades. While the increase in income poverty had been more moderate than for income inequality in the decade from the mid-1980s to the mid-1990s, the reverse applies to the most recent decade. Countries generally display consistent changes in terms of both inequality and poverty over the entire period, although there are exceptions – *e.g.* Ireland combines a significant increase in relative income poverty (up to the year 2000) and a small decline in income inequality.

Figure 3. Changes in income inequality and income poverty over the past 20 years



Note: Poverty rates are defined as the share of individuals with equivalised disposable household income less than 50% of the median for the entire population. Data refer to percentage point changes between the mid-1980s and mid 2000s, except for Czech Republic, Hungary and Portugal (from around 1990 to mid-2000s) and for Austria, Belgium, Czech Republic, Ireland, Portugal and Spain (from mid-1980s to around 2000).

Source: Growing Unequal?

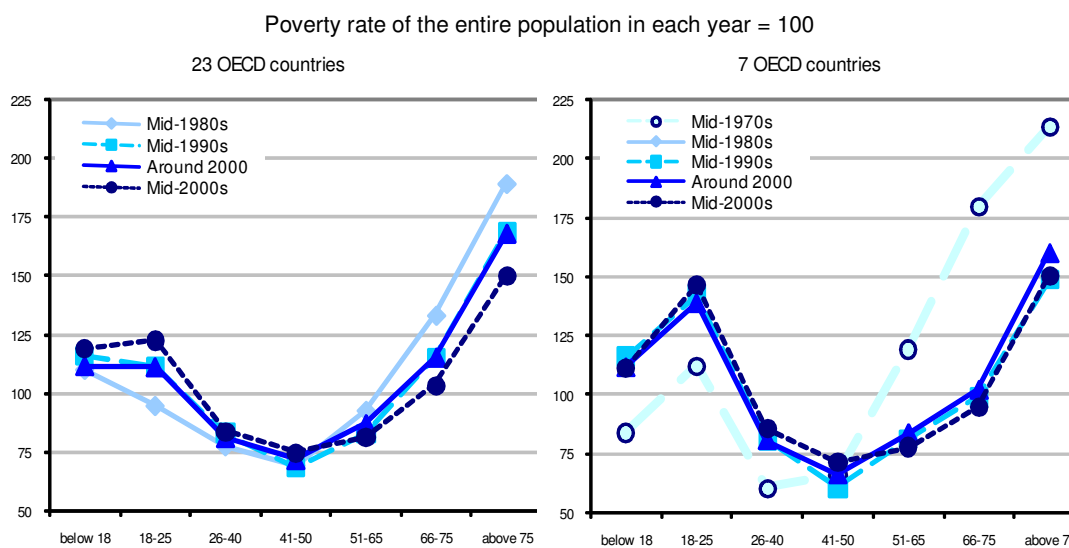
Shift in the relative income and poverty risks of various population groups

32. Aggregate trends in income distribution have affected people at various points of the distribution in different ways. In Ireland, Mexico and Turkey, the decline of income inequality experienced over the past decade has mainly reflected falls in the income share accruing to people in the top quintile of the distribution and gains for people in the middle three. Conversely, in most of the countries where income inequality increased over the decade, this mainly reflected gains at the top of the distribution.

33. One consequence of these large gains at the top of the distribution has been that middle-class families have often lost ground relative to the economy-wide average – the so-called phenomenon of the “hollowing out of the middle-class”. This is especially evident in New Zealand and the United Kingdom (in the decade from the mid-1980s to the mid-1990s), as well as Canada, Finland and the United States (where the median to mean ratio fell by around 10% over the entire period). Conversely, the relative income of middle-class families has been stable in Denmark, France and Sweden, and improved in the Netherlands and Greece throughout the period and in more countries since the mid-1990s.

34. Changes in economic conditions have also shifted poverty risks among various demographic groups. The most significant of these shifts has been away from the elderly and towards young adults and children (Figure 4). While the very old (people aged 75 and over) continue to be exposed to a greater risk of (relative-income) poverty than other age groups, this risk has fallen from a level almost twice as high as that of the population average in the mid-1980s to 50% higher by the mid-2000s. For people aged 66 to 75, this risk is now lower than for children and young adults. Conversely, children and young adults experienced poverty rates that are today around 25% higher than the population average, while they were close to and below that average, respectively, 20 years ago. Changes have been smaller when looking at poverty risks across household types, with lone parents as the group exposed to the highest risk – three times higher than average – a disadvantage that increased further over the past decade.

Figure 4. Risk of relative poverty by age of individuals, mid-1970s to mid-2000s, OECD average



Note: Relative poverty risk is the age-specific poverty rate divided by the poverty rate for the entire population times 100. The poverty threshold is set at 50% of median income of the entire population. OECD-23 is the average poverty rates across all OECD countries except Australia, Belgium, Iceland, Korea, Poland, the Slovak Republic and Switzerland. OECD-7 is the average for Canada, Finland, Greece, the Netherlands, Sweden, the United Kingdom and the United States. Data for mid-1980s refer to around 1990 for the Czech Republic, Hungary and Portugal; those for mid-2000s refer to 2000 for Austria, Belgium, the Czech Republic, Ireland, Portugal and Spain (where 2005 data, based on EU-SILC, are not comparable with those for earlier years).

Source: Growing Unequal?

Drivers of changes in income distribution

35. Cross-country differences in income inequality and poverty reflect the interplay of many factors. Three, in particular, have figured prominently in discussions on the subject. These are changes in demography and living arrangements; labour-market trends; and government tax and transfer policies. While it is not always easy to distinguish among these factors, the most recent OECD report on this subject highlights several patterns.

36. First, *demographic factors* have played an important role in shaping households' living conditions. The most direct way in which this has occurred is by reducing average household size, implying that economies of scale in consumption are lost and that a higher money income is needed to assure the same level of household well-being. The decline in household size (on average from about 2.8 to about 2.6) affected all OECD countries but was particularly large in Ireland, Italy, Japan, Mexico, Spain and the United Kingdom.

37. There are, however, additional channels through which demographic factors and changes in living arrangements affect income inequalities. The most important is by increasing the share in the total population of groups with below-average income (e.g. the elderly or lone parents) or with higher within-group inequality. Comparing the actual change in income distribution to what would have occurred had the population structure (by both age of individuals and household type) remained “frozen” at the level prevailing some ten years ago, suggests that these demographic factors have increased income inequality in a majority of countries, and significantly so in Australia, Canada, France, Germany, the Netherlands and the United Kingdom. More important than population ageing *per se* have been the changes in living arrangements, which have implied that more people are living alone and in lone-parent households.

38. There is also little evidence of strong links between changes in the relative income of various groups and changes in their population size – suggesting that shifts in the relative income of various groups have been driven more by changes in access to jobs and support from the welfare system than by demographic factors *per se*.

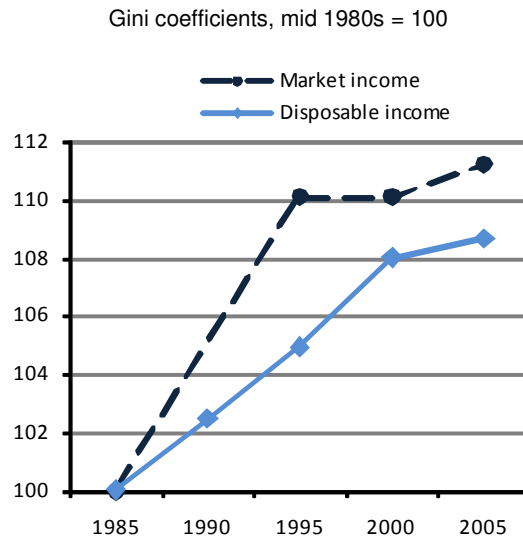
39. Second, *labour markets* are crucially important for income distribution. Personal earnings disparities among full-time workers have indeed increased rapidly since 1990, with most of the widening reflecting developments in the upper part of the distribution. This widening has also been sharper for men and women, considered separately, than for all workers, irrespective of their gender – as the decline of the wage gap between men and women working full time has narrowed the “distance” between the earnings distributions of men and women.

40. Disparities in *personal earnings* among workers, however, do not necessarily translate into a wider distribution of *household earnings* among all people, whether working or not. This is because higher employment (especially of second earners) spread earnings among a larger number of households. However, the employment gains experienced throughout the OECD area since the second half of the 1990s have not led to significant declines in the share of people living in joblessness households. The persistence of high household joblessness despite higher employment has partly reflected the concentration of employment gains among people with intermediate education, and the decline of employment rates among less educated people. As a result of these contrasting developments, changes in the concentration of household earnings have been small in most OECD countries in the period from the mid-1990s to mid-2000s

41. At the same time, capital income and, to a lesser extent, self-employment income have become more concentrated in a much larger number of OECD countries. This suggests that non-wage income sources – whose measurement is subject to larger uncertainties than in the case of earnings – account for a significant part of the observed widening in the distribution of household disposable income.

42. Taking all market income sources together (from earnings, self-employment, capital, savings etc.), their distribution has become more unequal than that of net disposable incomes, especially between the mid-1980s and the mid-1990s and again since around 2000 (Figure 5).

Figure 5. Trends in market and total disposable income inequality, working-age population, OECD average



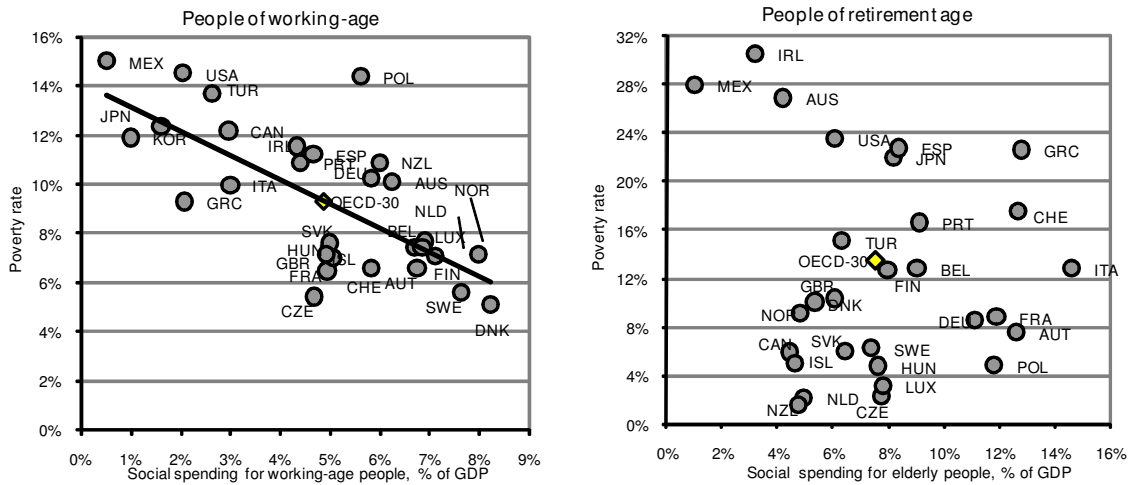
Note: OECD-15 is the average of countries for which information is available over the entire period from the mid-1980s to the mid-2000s (Canada, Denmark, Finland, France, Germany, Greece, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Sweden, the United Kingdom and the United States). Gini coefficients for market and disposable income are based on people ranked based on each of the two income concepts.

Source: Growing Unequal?

43. Finally, cross-country differences in the shape of the income distribution partly reflect differences in *how governments redistribute income* across individuals through the cash benefits they provide and the household taxes they collect. The effect of government redistribution in lowering income inequality is largest in the Nordic countries and lowest in Korea and the United States. The country-ranking is similar when looking at the effects of taxes and transfers in reducing income poverty. It appears that countries that redistribute more towards people with lower income achieve a more narrow distribution of household income and lower poverty rates. Also, most of this redistribution towards people at the bottom of the income scale is generally achieved through public cash benefits – with the main exception of the United States, where a large part of the support provided to low-income families is administered through the income tax system.

44. These cross-country differences in the scale of redistribution among people with different incomes partly reflect differences in the size and structure of social spending – with spending towards people of working age achieving a larger reduction in poverty than social spending towards the elderly (Figure 6). Differences in spending levels and structure are, however, only part of the story. OECD countries redistribute in a variety of ways: some through universal benefits, others with more targeted programmes; some mainly rely on transfers, others mainly granting tax rebates to low-income families. Also, redistribution across individuals with different income always coexists with redistribution across the life-course of the same person, with some evidence that countries that redistribute more across the lifecycle spend more, in the aggregate, than those that focus more on redistribution between rich and poor.

Figure 6. Poverty rates and social spending for people of working age and retirement age, mid-2000s



Note: Poverty rates based on a threshold set at half of median household disposable income. Social spending includes both public and mandatory private spending in cash (*i.e.* excluding in-kind services). Social spending for people of working age is defined as the sum of outlays for incapacity, family, unemployment, housing and other (*i.e.* social assistance) programmes; social spending for people of retirement age is the sum of outlays for old-age and survivors benefits. Social spending is expressed in percentage of GDP at factor costs. Data on poverty rates refer to the mid-2000s for all countries; data for social spending refer to 2003 for all countries except Turkey (1999).

Source: Growing Unequal?

45. When looking at changes over the past decade in the size of the redistribution from rich to poor, such changes differ significantly across countries but are small on average. The reduction of income inequality achieved by the combined effect of household taxes and public cash transfers declined over the past decade in around half of the countries. These developments were mainly driven by changes in the redistribution achieved by public cash transfers (which declined in most countries), which was partly offset by stronger redistribution through household taxes (in particular in Denmark, Germany, Italy, the Netherlands and the United Kingdom).

Limits and statistical issues

46. While the data outlined above allow comparing trends and drivers in income inequality across OECD countries, there are four types of limitations in the current OECD reporting system on income distribution. First, there are limits linked to the OECD data collection itself, such as the low frequency of data collection and the long time lags for processing and releasing such data. Second, there are limits embedded in the household surveys underlying the OECD data collection, such as underreporting of particular income components. Third, the reporting system is confined to cash income measures; it is clear that any serious assessment of economic inequality would have to consider whether other factors – non-cash income, non-monetary measures, dynamic measures – validate or invalidate conclusions based on static income measures alone. However, at this stage, it seems that these additional factors can be brought into the picture only through one-off analyses, rather than being integrated in the OECD periodic collection. Fourth, there are other conceptual issues that will need to be tackled in future research, such as the issue of how to improve measures of the redistributive impact of taxes and transfers.

Under-reporting of cash-income components

47. The OECD income concept includes all components that are regularly received in cash and quasi-cash forms¹⁵. As information of these items is collected through surveys (in most cases), these data are subjected to under-reporting, which may bias assessments of how income inequality compares across countries. The degree of under-reporting may also change over time within each country, which may distort assessments of trends.

48. Most of the income items that are covered in the OECD questionnaire have a counterpart in the System of National Accounts (SNA), which hence provides a natural external benchmark for assessing the quality of these estimates. In practice, it is not obvious that SNA aggregates are always superior and more comprehensive than survey data: SNA data for the household sector may also reflect errors in other accounts and be affected by the statistical procedures used to assure consistency across accounts. A preliminary comparison of information between the two sources in a given year highlights some significant differences between the two sources. The differences are generally small for the aggregate of household disposable income, but more significant when looking at individual components. In theory, it may be possible – based on the information contained in the OECD income distribution questionnaire – to compute Gini coefficients that correct for the different degree of under-reporting, but it is not obvious whether this would represent an improvement in statistical practices. While several OECD countries regularly undertake such comparison of survey and SNA aggregates, the task is much more challenging when undertaken in a comparative perspective. Some OECD countries (e.g. France) are in the process of increasing the degree of integration between the two sources, as a necessary first step in developing a household appropriation account for major socio-economic groups.

¹⁵ The notion of “quasi-cash” includes items such as food-stamps.

Table 4. Ratios of grossed up income components derived from survey sources to corresponding aggregates in National Accounts

		Ratio (Survey/SNA)						
		Mixed income				Public transfers	Household taxes	Household disposable income
		Earnings	Self-employment income	Capital income	Total			
Australia	2003/04 SIH	0.92	0.40	-0.62	5.62	0.65	0.74	1.08
Belgium	2004 EU-SILC	1.01	0.60	0.33	0.48	0.91	0.89	0.86
Canada	2005 SLID	0.93	0.73	1.05	0.91	1.48	0.91	0.99
Finland	2004 IDS	0.98	0.60	1.32	1.07	0.92	0.89	1.04
	2004 EU-SILC	0.98	2.69	0.33	1.17	0.64	1.06	0.96
France	2004 ERF	0.73	0.43	0.45	0.44	0.78	0.23	0.85
	2004 EU-SILC	0.83	1.95	0.88	1.02	0.11	0.76	0.78
Germany	2004 GSOP	1.06	0.33	-6.14	0.59	0.79	1.16	0.82
	2004 EU-SILC	0.96	0.97	-7.77	1.32	0.17	1.10	0.79
Greece	2004 EU-SILC	1.23	0.54	1.07	0.59	1.04	0.21	0.99
Italy	2004 SHIW/ISTAT	0.93	0.64	0.13	0.50	0.84	0.98	0.69
	2004 EU-SILC	0.76	0.65	1.11	0.78	0.11	..	0.75
Japan	2003 CSLC	0.85	0.78	1.91	0.99	0.77	0.84	0.85
Korea	2006 HIES	0.88	5.27	4.24	4.95	0.22	0.60	1.11
Netherlands	2004 IDS	1.04	0.44	3.29	0.99	0.84	0.62	1.17
	2004 EU-SILC	1.05	1.63	2.03	1.20	0.14	1.25	0.90
Norway	2004 IDS	1.04	0.92	3.10	1.70	0.72	0.97	1.05
	2004 EU-SILC	1.06	3.16	1.32	2.49	0.40	1.18	1.00
Spain	2004 EU-SILC	0.71	0.19	1.02	0.23	0.80	..	0.69
United Kingdom	2004 EU-SILC	0.92	2.45	2.31	2.40	0.28	1.63	1.23
United States	2005 CPS	0.98	0.17	-0.87	0.71	0.41	0.66	0.89
Average		0.95	0.97	0.84	1.48	0.76	0.81	0.95

Source: Growing Unequal?, OECD National Accounts

49. Other possible external benchmarks may be available for other income components. Individual country studies that have compared information on public cash transfers to households from administrative sources with that available through household surveys have generally uncovered large under-reporting. Future comparative work on public cash transfers could rely on information on expenditures data from administrative sources (both for the total and for major programme categories) available from the OECD Social expenditure database.

Non-cash income components

50. The OECD income concept excludes various (imputed) income components that are not generally included in the household surveys that underlie the OECD tabulations. The importance of these imputed components varies across countries, and they may be more or less important for people at the top or bottom of the income scale. Some, such as imputed goods for own consumption, are minor for most developed OECD economies but could be more important for less-developed OECD countries such as Mexico and Turkey and, a fortiori, for “enhanced engagement” countries such as India and China; most of these income flows are also likely to be concentrated among subsistence farmers, who are clustered at the bottom of the income scale. Other components, such as imputed rents and other capital income flows are more important in richer countries, and more likely to be concentrated at the top than at the bottom of the income distribution. Their exclusion from the income definition used by the OECD may then imply that,

when the share of these components rise over time, trends in inequality are understated. As more OECD countries are moving in the direction of collecting more comprehensive information on these items in the future, the issue that will have to be faced is whether the standard OECD income definition shall be broadened in further work.

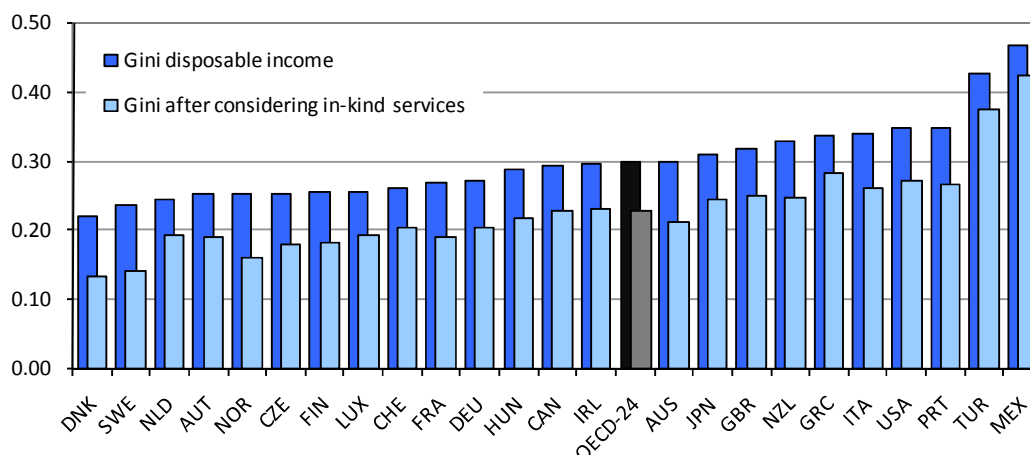
51. Other non-cash income components omitted from the "standard" accounting framework are government activities that impact on household well-being through the in-kind services they provide and the consumption taxes they collect. The value of publicly provided services for education, health and other social services varies significantly across countries (from less than 10% of household disposable income in Turkey to more than 40% in Denmark and Sweden), as well as over time (mainly reflecting the expansion of publicly provided education and health services). This suggests that including these imputed items in a more comprehensive measure of households' economic resources will significantly affect any assessment of cross-country comparisons of levels of inequality and of changes in individual countries.¹⁶

52. The recent OECD report "Growing Unequal?" applies different approaches to include public services to households in income distribution analysis. While some conclusions differ according to the techniques used, some general patterns also appear:

- Public in-kind services such as health and education are distributed rather uniformly across people belonging to various income groupings. This implies that they account for a larger share of household income at the bottom of the distribution than at the top. As a result, inclusion of these in-kind services narrows the Gini coefficient of income inequality at a point in time, by roughly one third on average across OECD countries, and by larger amounts in Sweden, Norway, Australia, Denmark, New Zealand, Portugal, France, Italy and the United States (Figure 7).
- This equalising effect, however, differs among programmes – with large reductions due to compulsory education, non-specialist health care and public housing, and negligible reductions for non-compulsory education. Indeed, non-compulsory education is more unequally distributed than income in around one in three countries.
- The effect of government services in narrowing the Gini coefficient of income inequality is quite large. It is equivalent to about half of the equalising impact of household taxes and public cash benefits. In the United States, public services appear to have the same impact in reducing inequality as do taxes and transfers.

¹⁶ The SNA already foresees a concept of "adjusted" household disposable income, which includes the value of those publicly-provided public services that benefit individual users.

Figure 7. Influence of publicly provided services on income inequality, around 2000



Note: Countries are ranked from left to right in increasing order of the Gini coefficient of income inequality. Estimates of the effect of public in-kind services for health care, education and other social services in narrowing income inequality.

Source: Growing Unequal?.

Non-monetary measures

53. Money income is only a partial measure of living conditions and other measures are important in their own right. One of these measures is household wealth. Surveys measuring household assets and liabilities exist in several OECD countries, but differences in survey design in this field are much larger than in the case of income. “Growing Unequal?” draws some preliminary findings from comparative information on household wealth made available through the Luxembourg Wealth Study (LWS) project. The analysis is limited to eight OECD countries that are part of LWS, and to those types of assets for which information on their distribution is available for all these countries. In general, the importance of these excluded asset categories varies across countries, affecting assessments of both the levels and inequality in the distribution of household wealth. Findings include the following:

- The distribution of wealth is much more unequal than that of income: this reflects differences in saving patterns across the income distribution (with small savings among those at the bottom of the income scale, and much larger ones for people at the top), and the importance of bequests for the transmission of wealth across generations.
- Different measures of wealth inequality (concentration coefficients, or the share of total wealth held by people in the top decile) and different definitions of household wealth (i.e. excluding business equity) lead to different country rankings. In general, the United States have a higher wealth concentration than other countries when looking at the share of wealth held by the top decile, but not in terms of the Gini coefficient.
- Country rankings also differ when comparing the absolute level of household assets and income, with Italy having the highest median net worth (followed by the United Kingdom) despite having the lowest equivalised household income among the OECD countries included in the LWS. Sweden has the lowest median net worth (equivalised), despite an income that is above that of many other OECD countries.

- Median net wealth varies with the age of the household head, generally rising until the end of working life and then declining during retirement. This inverted-U profile is, however, less steep than for income, with only small declines taking place in Canada and a continued increase by age of the household head in the United States.
- Across individuals, income and net worth are highly correlated, but the correlation is not perfect. In general, income-poor people have fewer assets than the rest of the population, with a net worth generally about under half of that of the population as a whole.

54. Non-income measures are also important for poverty measurement. The term “material deprivation” is often used in European literature to refer to the extent to which people can afford those items and activities that are typical in their society. Studies of the size and feature of material deprivation are typically undertaken for individual countries and in a regional (i.e. European) context, but can also be extended (with a number of caveats) to a broader range of European and non-European countries. An analysis of this type is undertaken in “Growing Unequal?”, highlighting large differences in the extent of material deprivation across OECD countries. In general, the prevalence of material deprivation is higher in countries with high income poverty – suggesting that, at the aggregate level, relative income poverty is indeed identifying difficult living conditions. However, the prevalence of material deprivation is also higher in countries characterised by lower national income – suggesting that relative income poverty rates are a poor proxy for hardship in countries with a relatively low, but equally distributed, standard of living.

55. Other general patterns also emerge. Within countries, the likelihood of experiencing deprivation declines monotonically as income rises. It also declines with age, in contrast to the U-shaped relation between relative-income poverty and age found in most countries, and suggesting that older people with low relative income are not necessarily “poor” in the sense of experiencing material hardship. Results also suggest that, while there is some overlap between low income and deprivation, a large share of income-poor people are not materially deprived and that, conversely, a large share of those materially deprived are not income-poor.

56. Information on these non-income measures of economic well-being is important for social policies. This is most evident when considering ways of improving the targeting of social programmes to reach those with greater needs. Income may be a poor proxy of economic needs, and equity concerns may relate to a range of inequalities (e.g. in education and health) that have not been addressed in this report. Indirectly, the non-income measures considered in this report also point to the importance of looking at factors that go beyond the earnings capacity of people, to other constituents of an acceptable standard of living. More comprehensive information on asset holdings would also allow assessing the effects of the assets tests embodied in the social programmes of several countries on the behaviour of social-assistance clients, and the effect of the various asset-based welfare programmes recently introduced in several OECD countries.

Measuring the redistributive effects of welfare states

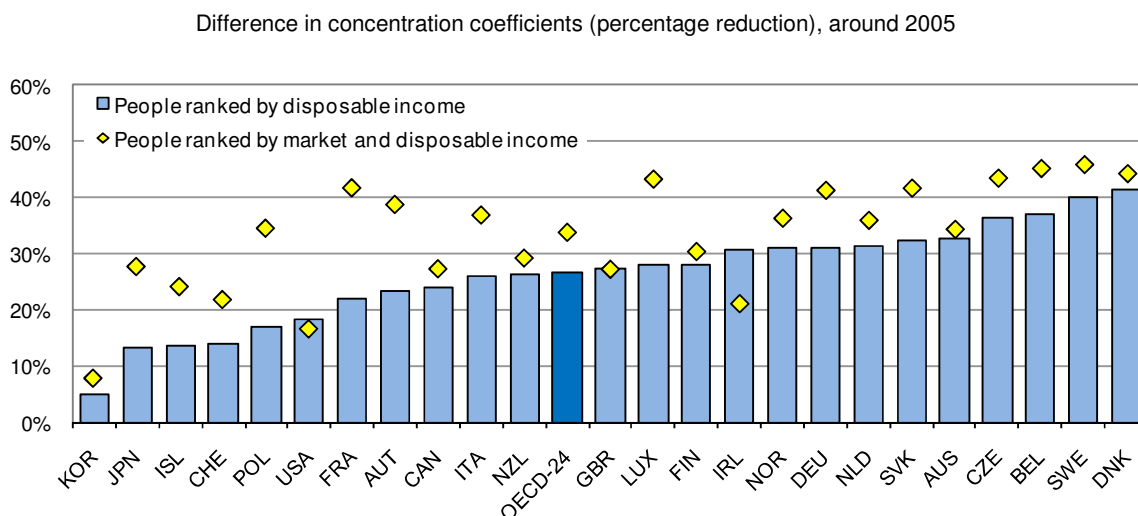
57. A standard approach to account for the redistributive effect of the welfare state is to compare the income distribution “before” and “after” transfers (mostly public cash transfers) and taxes (mostly income taxes). Most of the comparative studies based on LIS, as well as earlier OECD work on this issue, relied on this standard approach. However, as the situation that would prevail in the absence of redistribution cannot be directly observed, the “counter-factual” used in this pre/post approach is problematic in three respects. First, taxes and transfers redistribute both vertically (between individuals) as well as horizontally (between generations). This is important insofar as the social protection systems of various countries put more emphasis on one or the other of these dimensions – social insurance based systems, for instance, focus

primarily on horizontal redistribution.¹⁷ Second, welfare state policies affect both the pre- and post tax/transfer distribution, not only the latter: active labour market programmes, for instance, will have an effect on the earnings distribution, to the extent that they help individual with low earnings potential to move into jobs. Third, the standard approach assumes away behavioural changes, notably labour supply responses to taxes and transfers. These responses will vary between population and income groups. Bergh (2005) summarises the various biases embedded in the standard “pre/post” approach as “the counterfactual problem of welfare state research”.

58. “Growing Unequal?” calculates two measures of the effect of income taxes and cash benefits in reducing income inequality. These are shown in Figure 8:

- In the first approach (shown as diamonds), inequality in the distribution of market income is computed by ranking people by their level of market income. This closely corresponds to the “standard approach” used by most comparative studies. On this measure, on average, across the 24 countries covered, the tax and transfer systems lower income inequality by around one-third (i.e. around 15 percentage points), with declines ranging from around 45% in Denmark, Sweden and Belgium to less than 8% in Korea.
- In the second approach (shown as bars) the Gini coefficient for market income is based on people ranked by their disposable income, i.e. individuals are ranked by where they end up “after” redistribution, rather than where they were placed “before” redistribution. On this second measure, the reduction of inequality achieved by taxes and transfers is a little more than one-fourth (i.e. around 11 percentage points), with declines ranging from around 40% in Sweden and Denmark to 5% in Korea.

Figure 8. Differences in inequality before and after taxes and transfers in OECD countries



Note: Countries are ranked, from left to right, in increasing order of the percentage reduction in the concentration coefficient achieved by household taxes and public cash transfers, based on people ranked by their household disposable income. Bars are computed based on grouped data for average market and disposable income, by deciles of people ranked by their household disposable income. Diamonds are computed based on individual data, with people ranked by market income (for the Gini coefficient of market income) and ranked by disposable income (for the Gini coefficient of disposable income).

¹⁷ Ståhlberg (2007) shows that the horizontal dimension makes up about half of all redistribution in Australia but some 80% in Sweden.

Source: Growing Unequal?

59. The difference between the two measures of redistribution across countries can be seen as a result of the “re-ranking” of some households as a consequence of welfare state programmes. In particular, in countries with generous public pensions, the standard approach implies that middle-class individuals are plunged into market-income poverty on retirement, simply because it is the government, rather than the market, that provides their pensions: generous earnings-related public pensions are then measured as being very effective at reducing inequality, in part because they restore middle-income retirees to their pre-retirement ranking. A comparison between the two alternative measures suggests that, in some OECD countries, a significant part of the redistribution measured by the standard approach reflects such a re-ranking of people. In particular, the countries where the re-ranking effect is most significant are precisely those where public pensions account for more than 90% of the total disposable income of the retirement-age population – Austria, Belgium, France, Italy, Luxembourg and Sweden. In contrast, re-ranking is lower in Korea, the United States, Canada, Finland, the United Kingdom, Ireland and Australia, where public pensions are 50% or less of the disposable income of the retired.

60. While the use of two different benchmarks for the counterfactual distribution gives some important insights, the problem of taking into account behavioural changes remains. Bergh (2005) uses theoretical simulations based on artificially generated data to show that the behavioural feedback induced by taxes and transfers will increase pre-redistribution inequality when taxes are proportional and benefits are flat-rate, while it will decrease pre-redistribution inequality when taxes are progressive and benefits are positively income related. Bergh concludes that the standard approach is “biased towards exaggerating the redistributive effect of flat-rate benefits and underestimating the redistributive effect of systems with progressive taxes and positively income-related benefits.”

61. Esping-Andersen and Myles (2009) identify the “counterfactual problem” as a priority for future income distribution and welfare state research. Rather than Bergh’s approach of theoretical simulation they propose to rely on empirical simulations. Based on partial simulation models of the EUROMOD type, they propose to develop a more comprehensive methodology. Such a methodology should, however, include the modelling of behavioural changes.

Conclusive summary

62. This paper has described and discussed the strengths and limits of the approach used by the OECD to measuring and comparing household income distribution across countries. The objective of the OECD work in this area has been to anchor inequality and poverty concerns in the policy agenda of member countries. The monitoring of anti-poverty goals and policies requires adequate indicators and a statistical infrastructure: we believe that the efforts undertaken so far have allowed to build the basis for such infrastructure. While the scope of “measurement errors” surely exist, this is not unique of income distribution analysis. Further, we believe that comparative work along the lines pursued by the OECD and other international organisations is a powerful tool to achieve greater convergence in statistical practices.

63. For around ten years now, the OECD has conducted a regular data collection (at around five-year intervals) through a network of national consultants who provide standard tabulations based on common definitions and methodological approaches. In that frame, a series of methodological choices have been made to ensure the highest possible degree of comparability. Some of their features are:

- Using income rather than consumption as a yardstick, with the benchmark concept defined as annual cash disposable income;
- Counting individuals rather than households or families;

- Accounting for economies of scale by applying a square root equivalence scale;
- Focusing on relative rather than on absolute poverty;
- Collecting static rather than dynamic measures.

64. While several of these choices are clearly linked to issues of data availability and coverage – the prime aim being to be able to describe internationally comparable trends – others choices are rooted in conceptual and theoretical considerations. There remain, however, four types of limitations in the current OECD reporting system on income distribution

- i. Limits linked to the OECD data collection itself: the low frequency of data collection, the long time lags for collecting and processing but also the fact that tabulations on specific aspects can only be undertaken by the data providers themselves;
- ii. Limits embedded in the household surveys underlying the OECD questionnaire data collection: breaks in series, underreporting of particular income components.
- iii. Limits in the monetary income concept: this concept disregards the sometimes growing importance of items such as own-occupied housing and life insurance claims , as well as publicly provided services or consumption taxes.
- iv. Conceptual limitations: the accurate measurement of government redistribution, as well as the correct treatment of extended monetary and non-monetary measures of economic resources. The question arises whether and to what extent these additional factors should be integrated in the OECD periodic data collection.

65. Finally, the scope of this work has for a long time been limited to constructing comparable indicators across the most developed industrialised countries. With the ongoing OECD enlargement process, the scope is gradually changing, requiring adaptation and extension of the OECD set of indicators on household income distribution.

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ANNEX 1. TERMS OF REFERENCE OF OECD PROJECT ON THE DISTRIBUTION OF HOUSEHOLD INCOMES, 2005/06 WAVE

1. Definitions

The unit of observation of the survey is the **household**. A household is defined as a collection of individuals who are sharing the same housing unit.¹⁸ In the distribution, *each household is weighted by the number of individuals who belong to this household*. For instance, a household of four people has a weight equal to four; this is equivalent to considering a distribution in which this household is represented by four individuals with the same level of income.

Individuals are ranked according with the value of the “adjusted” disposable income per equivalent household member of the household to which they belong. For instance, if Y_i denotes the total disposable income of household i , the “adjusted” income of each member j of household i (W_{ij}) is calculated as following :

$$[1] \quad W_{ij} = \frac{Y_i}{S_i^\varepsilon}$$

where S_i is the number of members in household i and ε is the equivalence elasticity.

All income components are reported on an *annual basis and in constant prices* (prices of the most recent year provided). The total household income (Y_i) is defined as the total disposable income; it includes wages and salaries, self-employment incomes, realised property incomes, cash transfers from the general government less taxes and social security contributions paid by households. Non-cash income components (e.g. imputed rents) should be excluded. Information on the total (non-equivalised) disposable income and its component should be provided so as to allow comparisons with external data (to be reported in the sheet "Characteristics" of the Excel file).

2. Reference populations

For Tables 1, 2, 3, 6 and 6bis, three separate panels refer to the entire population, to the population of working age (18 to 65) and of retirement age (66 and over). Children (persons aged below 18) should be included among the entire population. For each of the three panels, income estimates are ranked separately; i.e. upper bound values should be specific to the three population groups, and each decile should contain 10% of the respective reference population.

Equivalence scale

¹⁸ However, data on a family basis (if available, and only for 2005) are requested for the first time to allow a better identification of "lone parents". See Section 10.

3. Equivalence scale

The equivalence elasticity (ϵ) characterises the amount of scale economies that households can achieve. An equivalence elasticity lower than unity implies the existence of economies of scale in household needs: any additional household member needs a less than proportionate increase of the household income in order to maintain a given level of welfare. Under this assumption, the sum (over j) of individual “adjusted” incomes W_{ij} will exceed the total household disposable income by the amount of scale economies. All the tables specified in this request should be calculated using an *equivalence elasticity* of 0.5. This means that all incomes are adjusted by the square root of the household size¹⁹.

4. Income sources

The following income sources are identified:

- 1) EH, the wage and salary income of the household head, excluding employers’ contributions to social security, but including sick pay paid by governments.
- 2) ES, the wage and salary income of the household spouse, excluding employers’ contributions to social security, but including sick pay paid by governments.
- 3) EO, the wage and salary income from other household members (excluding employers’ contributions to social security, but including sick pay paid by governments).
- 4) K, capital income, including occupational pensions and all kinds of private transfers.
- 5) SE, self-employment incomes.
- 6) TR, social security transfers from public sources (including accident and disability benefits, old-age cash benefits, unemployment benefits, maternity allowances, child and/or family allowances, all income-tested and means-tested benefits)
- 7) TA, taxes and social security contributions paid directly by households.

While this breakdown of income sources is used for most of the tables, Table 6bis asks for a more detailed information on different types of public transfers (see below).

To the possible extent, definitions used in calculating these income sources should be close to the recommendations adopted by the “Canberra Group on household income statistics”, available at: <http://www.lisproject.org/links/canberra/finalreport.pdf>.

Individual disposable income per equivalent household member can then be expressed as follows:

$$[2] \quad W_{ij} = EH_{ij} + ES_{ij} + EO_{ij} + K_{ij} + SE_{ij} + TR_{ij} - TA_{ij}$$

In addition, we define the individual market income per equivalent household member as:

$$[3] \quad M_{ij} = EH_{ij} + ES_{ij} + EO_{ij} + K_{ij} + SE_{ij}$$

In both [2] and [3], all income components are expressed in terms of equivalent household member. For instance, EH_{ij} is calculated by dividing the earning of the head by the number of household member S_j to the power of the equivalence elasticity (ϵ) - just like in [1] - and then allocated to each household member.

¹⁹ For instance, the income of a household with four persons would be divided by two.

5. Treatment of negative income

[1] General treatment. Once equivalent household member adjustments are done, using the equivalence elasticity under consideration (see section 3), all individual components of market income (EH, ES, EO, K, SE) showing negative values should be set to zero. For instance, any negative value of self-employment income is set equal to zero.

Then, market and disposable incomes are calculated using formulas [2] and [3]. The ranking of individuals is done on the basis of these new values of disposable income. All Tables requested will be built using the same ranking (e.g. distribution held constant), even when considering specific household groups.

The mean of market income and disposable income are then computed (over all incomes e.g. zero and positive incomes)

[2] When computing the MLD, the log properties require *strictly positive income values* (see formula [4]).

Any values of *disposable income* W_{ij} lower than 1 per cent of the mean disposable income is set equal to 1 per cent of the mean disposable income. The “bottom coded” value of disposable income per equivalent household member is denoted by W_{ij}^* . (see Table 1 and Table 5)

Any value of *market income* M_{ij} lower than 1 per cent of the mean market income is set equal to 1 per cent of the mean market income.

As a result, taking into account the adjustments described above, mean income has to be re-calculated before computing the MLD.

6. Time coverage

Income distributions refer to a particular year. Trends of income distribution are analysed by comparing static distributions at several points in time: mid-1980, around 1990, mid-1990, 2000 and the most recent year for which data exist (around 2005). It is to national experts to select specific years, depending on data availability. The income-years chosen should be indicated in the Excel spreadsheet.

7. Aggregate trends in income distributions

Table 1 describes evolution of income inequality over the last decades by using deciles values and aggregate indicators of inequality. Individuals are ranked according with their *household disposable income per equivalent household member* as described in equation [1]. Separate panels refer to the entire population, to the population of working age (18 to 65) and of retirement age (over 65). Individuals falling in each of the three population groups should be ranked separately (i.e. working age persons in the first decile are those in the bottom 10% of the working age population). For each reported year, the Excel Table has the following format.

Table 1 : Evolution of income inequality through time.

Entire population

	Entire population			Working-age pop.			Retirement-age pop.		
Total number of individuals									
Total number of households									
	upper bound value ⁽¹⁾	real income	mean	upper bound value ⁽¹⁾	real income	mean	upper bound value ⁽¹⁾	real income	mean
decile 1									
.....									
Decile 10									
TOTAL	(3)			(3)			(3)		
Real median income :									
MLD ⁽²⁾									
SCV									
Gini									
Gini before taxes and transfers									
Standard error Gini (post t&t)									
Share of income to top 1% of pop									

(1) the upper bound value is the value of the real income at the upper breaking point of the corresponding decile. Therefore, the upper bound value of decile 1 corresponds to the income of the 10% up from the bottom individual (referred to as D1 value); that of decile 9, to the income of the 90% up from the bottom individual (referred to as the D9 value) and that of decile 10, to the highest (possibly top coded) income value.

(2) MLD calculations are based on “bottom coded” values W_{ij}^* (see Section 5).

(3) shaded cells are empty.

- The MLD (Mean Log Deviation) index is calculated as :

$$[4] \quad MLD = \frac{\sum_i \sum_j \log\left(\frac{\mu}{W_{ij}^*}\right)}{n}$$

where log is the natural logarithm, μ is the arithmetic mean of disposable incomes $\mu = \frac{\sum_i \sum_j W_{ij}}{n}$; and n is the total number of individuals.

- The SCV (Squared Coefficient of Variation) index is calculated as :

$$[5] \quad SCV = \frac{\text{var}(W_{ij})}{\mu^2} = \frac{\frac{1}{n} \sum_i \sum_j (W_{ij} - \mu)^2}{\mu^2}$$

- The Gini index is calculated as :

$$\begin{aligned}
 \text{Gini} &= \left(\frac{2}{\mu \cdot n^2} \cdot \sum_{k=1}^n k \cdot W_k \right) - \frac{n+1}{n} = \frac{2 \text{cov}\left(W_k, \frac{k}{n}\right)}{\mu} \\
 [6] \quad &= \frac{\frac{2}{n} \sum_{k=1}^n (W_k - \mu) \cdot \left(\frac{k}{n} - \frac{1}{n^2} \sum_{k=1}^n k \right)}{\mu}
 \end{aligned}$$

- where household incomes per equivalent household members ($W_{ij} = W_k$) are ranked in ascending order (such as $k = 1, 2, \dots, n$).

Standard errors of the Gini coefficient (post taxes and transfers) should be provided by using "bootstrap" methods. A description of the method and programming are available on the LIS site (www.lisproject.org/keyfigures/bootsstrapmethods.htm).

Data on the share of income accruing to persons in the top 1% of the population (at least in the most recent year) should also be provided.

8. Income distribution by income sources

This section analyses how various income sources affect the distribution of household disposable income and how the structure of disposable incomes varies across deciles. The income sources considered are those specified in identity [2] above.

The following tables (Table 3 in the Excel sheet) indicate the distribution across deciles of the different income sources. Separate panels refer to the entire population, to the population of working age and to that of retirement age. Individual observations are ranked *following ascending values of household disposable income per equivalent household member* (W_{ij}), just as in Table 1. Each of the panels has the following format.

Table 3: Components of disposable income by decile

	EH	ES	EO	K	SE	TR	TA	EH+ES+E S+K+ SE+TR- TA	
year									
dec. 1								100%	
dec. 2								100%	
...									
dec. 10									100%

As an example, the shaded cell contains the **percentage** of public transfers (in DPI) received by households/individuals of decile 1 and 2 (given that households/individuals are ranked by ascending values of disposable income per equivalent household member). **Taxes should be entered with a negative sign.**

This information will also be used by the Secretariat to derive information on the structure of

disposable income for units in each decile.

An additional breakdown, limited to 2005, is requested for (private) capital income (K) into four components (adding up to 100%):

- 1) **private pensions.**
- 2) **occupational pensions.**
- 3) **other private transfers.**
- 4) **other capital income.**

9. Additional detail on public transfers

In addition to the broad income sources reported above, we would be interested in obtaining additional information on the different types of current transfers. We are aware that the type of breakdown available may differ across countries. Where possible, we would also like to distinguish between the following:

$$TR_{ij} = OAP_{ij} + DB_{ij} + OI_{ij} + SP_{ij} + FCB_{ij} + UB_{ij} + HB_{ij} + OCB_{ij}, \text{ where}$$

- 1) OAP stands for (public) old-age cash benefits;
- 2) DB for disability benefits;
- 3) OI for occupational injury and disease benefits;
- 4) SP for survivor benefits;
- 5) FCB for family cash benefits;
- 6) UB for unemployment benefits;
- 7) HB for housing benefits;
- 8) OCB for benefits on other contingencies.

The categorisation of public transfers follows that used in the OECD Social Expenditure Database (OECD, 1996, "Social Expenditure Statistics of OECD Member Countries). To the extent possible, all types of occupational pensions (even when compulsory) should be **excluded** from OAP (and, a fortiori, from TR) and included in (private) "capital income.

Table 6bis: Components of public transfers by decile

	OAP	DB	OI	SP	FCB	UB	HB	OTH	TR
<u>Year</u>									
dec 1									100%
dec 2									100%
...									
dec 10									100%

As an example, the shaded cell shows the share of old age pensions in all public transfers received by individuals in the deciles 1 and 2 (given that individuals are ranked by ascending values of disposable income per equivalent household member).

10. Income inequality for sub-groups of the population

The aim of this section is to analyse level and changes in the relative position of sub-groups of the population on the income ladder; and how these sub-groups have contributed to the overall trends of income inequality (see Table 7).

Individuals are grouped in household categories depending *first* on the age of the household head (working age head, i.e. 18-65; and retirement age, i.e. 66 and over); and *second*, within each of the two groups, according to the number of adults in the family and to the number of household members in employment (work attachment).

1) households structure:

	WORKING AGE HEAD (WA)	RETIREMENT AGE HEAD (RA)
By number of adults in the household	Single adults (SA); Two and more adults (TA)	Single adults (SA); Two and more adults (TA)
By presence of children	With children (CH); Without children (NC)	
By work attachment of household members	No worker (NW); Worker (WR) One worker (1W); 2 and more workers (2W)	No worker (NW); Worker (WR) One worker (1W); 2 and more workers (2W)

Households with a working-age head are cross-classified according to each of the criteria, thus resulting in 10 groups:

- 1) WASANCWR working-age head, single adult, no children, working
- 2) WASANCNW working-age head, single adult, no children, non working
- 3) WASACHWR working-age head, single adults, with children, working
- 4) WASACHNW working-age head, single adults, with children, non working
- 5) WATANC2W working-age head, two or more adults, no children, two or more working
- 6) WATANC1W working-age head, two or more adults, no children, one working
- 7) WATANCNW working-age head, two or more adults, no children, non working
- 8) WATACH2W working-age head, two or more adults, children, two or more working
- 9) WATACH1W working-age head, two or more adults, children, one worker
- 10) WATACHNW working-age head, two or more adults, children, no workers

Household with a retirement-age head are cross-classified by the number of adults in the household and by work attachment of household members, resulting in 5 groups

- 11) RASAWR retirement-age head, single adult, one worker
- 12) RA SANW retirement-age head, single adult, no worker
- 13) RATA2W retirement-age head, two or more adults, two or more workers
- 14) RATA1W retirement-age head, two or more adults, one worker
- 15) RATANW retirement-age head, two or more adults, no worker

An adult is any individual aged 18 and above. **A worker (W) is an adult with a non-zero annual earning or self-employment income.** Therefore, for instance, an individual belongs to the WASACHNW group if he/she belongs to a household with a working-age head, with a single adult in the household, with children, and with no income from work.

Table 7 provides information for each of the above groups.

Table 7: Household structure and inequality.

	Household with a working age head				Households with a retirement age head			
	WASANCWR	WATACHNW	Total (1)	RASAWR	...	RATANW	Total (2)
Year								
Group mean disposable income in real terms								
% individuals in each group								
[a] % of individuals in:								
decile 1 ¹								
...								
Decile 10 ¹								
[b] TOTAL	100%	100%	100%		100%	100%	100%	

(1) Total, in percent of the entire population.

(2) Total, in percent of the entire population. (1) + (2) = 100%

[a] This panel *refers to individuals* across deciles, for each household type.

[b] Columns corresponding to the total for the working-age and retirement-age headed households should sum to 100%.

For households with a **head of working age and limited to the most recent year**, this version of the questionnaire also asks for information to allow a better characterisation of "workers" and of "families with children". Data on mean income and shares of persons in each group should be provided for the following categories:

Breakdown by full- and part-time work

Single adult households without children:

Working full-time

Working part-time

Single adult households with children:

Working full-time

Working part-time

Two or more adult households without children

Two or more working full-time

At least one working full-time

Others working

Two or more adult households with children

Two or more working full-time

At least one working full-time

Others working

When possible, individuals working full-time should be those defined as those usually working 30 hours or more per week (OECD definitions); when different definitions are used (e.g. based on self-reported status) this should be noted in the Excel file in the worksheet "Characterisitcs".

Breakdown by number of children

Single adult households with children, working:

- One child
- Two children
- Three of more children

Single adult households with children, not-working:

- One child
- Two children
- Three of more children

Two or more adult households with children, working:

- One child
- Two children
- Three of more children

Two or more adult households with children, not-working:

- One child
- Two children
- Three of more children

11. The profile of incomes according to the age of individuals

This section describes how the age-profile of household real incomes has evolved over the time and how its structure in terms of income sources has changed. This will be done by establishing for each period a static income distribution according with various age categories and by analysing how this distribution has changed over the time.

Lifetime profiles should identify the following age categories:

- 1) 0 to 17 years old.
- 2) 18 to 25 years old.
- 3) 26 to 40 years old.
- 4) 41 to 50 years old.
- 5) 51 to 65 years old.
- 6) 66 to 75 years old.
- 7) over 75 years old.

Table 9 summarises the information required for each age category.

Table 9: Distribution of household disposable income by age category.

	0-17 y.	18-25 y.	26-40 y.	41-50 y.	51-65 y.	66-75 y.	>75 y.	total
Year								
population share (%)								100 %
mean disposable income in real terms								
% of individuals in :								
decile 1 ⁽¹⁾								
... decile 10 ⁽¹⁾								
TOTAL	100%	100%	100%	100%	100%	100%	100 %	100 %
% share of total disposable income: EH+ES+EO K SE TR -TA								
TOTAL	100%	100%	100%	100%	100%	100%	100 %	100 %

(1) Same ranking as in Table 1.

In addition to this breakdown by age of individuals, information is also required (for the first time) by gender. This breakdown should be provided, limited to 2005, at the bottom of Table 5.

12. Income poverty

This section identifies the proportion of individuals living in low-income households and the characteristics of the household to which they belong to.

Poverty is defined using both a "relative" and an "absolute" definition:

- **Relative poverty:** the poverty threshold is expressed as a given percentage (40, 50 and 60%) of the current median income in each year. Therefore, it changes (in real terms) over time.
- **"Absolute" poverty:** the (relative) poverty threshold remains constant (in real terms) over time. **Differently from previous version of this questionnaire**, consultants are asked to keep constant (in real terms) the relative (50% of median income) threshold **of mid-1990s** (even when data for the mid-1970s and mid-1980s are available).

We use two indicators to characterise poverty:

The headcount ratio: the number of individuals with disposable household income per equivalent member lower or equal to the poverty threshold, as a percentage of the total number of individuals in the groups considered.

The *income gap* expressed as % of the poverty threshold. It is calculated as the average gap between the poverty threshold and the disposable income of poor expressed as a percentage of the poverty threshold. Thus:

[13] mean poverty gap = $\frac{(z - \mu_p)}{z} = \frac{\left(\frac{1}{p} \sum_{i=1}^p \sum_j (z - W_{ij})\right)}{z}$ where p is the number of poor and μ_p the mean income of the poor.

[14] median poverty gap = $\frac{(z - \hat{\mu}_p)}{z}$ where p is the number of poor and $\hat{\mu}_p$ ²⁰ the median income of the poor.

At least for the most recent year, the poverty gap should also be calculated using the median income of the poor.

Standard errors of the headcount rate should be provided by using "bootstrap" methods. A description of the method and programming are available on the LIS site (www.lisproject.org/keyfigures/bootsstrapmethods.htm).

Table 10 gives an overview of the evolution of poverty (both absolute and relative), for the entire population. For each year, the table is as follows:

²⁰ The median poverty gap is defined as the extent by which, in equivalized income, the median poor person, ranked by euivalized income, falls below the poverty line, as a percentage of that line.

Table 10: Evolution of “absolute” and relative poverty.

	Before taxes and transfers	After taxes and transfers
Relative poverty :		
<i>Poverty threshold = 60 per cent of the current median income</i>		
Headcount ratio		
standard error of the headcount ratio		
Mean poverty gap		
Median poverty gap		
<i>Poverty threshold = 50 per cent of the current median income</i>		
Headcount ratio		
standard error of the headcount ratio		
Mean poverty gap		
Median poverty gap		
<i>Poverty threshold = 40 per cent of the current median income</i>		
Headcount ratio		
standard error of the headcount ratio		
Mean poverty gap		
Median poverty gap		
“Absolute” poverty :		
<i>Poverty threshold = 50 per cent of the median income in the mid-1990s:</i>		
Headcount ratio		
standard error of the headcount ratio		
Mean poverty gap		
Median poverty gap		

Table 11 gives a more detailed description of which kind of households are at risk of poverty, before and after accounting for net transfers (taxes and transfers). The household and age breakdown is the same as in the previous sections. In Table 11, the poverty threshold is set at 50% of the current median disposable income, and poverty is expressed in terms of the headcount ratio.

Table 11 : Poverty rates before and after taxes and transfers, by household type
Head count ratio

	Year 1		Year 2	Year N
	Before taxes and transfers	After taxes and transfers		
Working age head				
<i>Household structure and work attachment</i>				
1) WASANCWR				
2) WASANCNW				
...				
10) WATACHNW				
TOTAL				
Retirement age head				
<i>Household structure and work attachment</i>				
11) RASAWR				
...				
15) RATA2W				
TOTAL				
Age of individuals				
0 - 17 y				
...				
above 75y				
TOTAL				

In the first columns, poverty indicators for the 1970-period are based on market income M_{ij} (see identity [3]); individuals with **market income** lower or equal to half of the *median disposable income* are counted as poor (i.e. the poverty threshold is the same as in Table 10). In the second column, poverty indicators are based on disposable income.

For the most recent year, data on relative poverty rates are also requested for the additional categories specified in Table 7, Section 10 (to allow a better characterisation of "workers" and of "families with children").