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INCOME INEQUALITY AND GROWTH: THE ROLE OF TAXES AND TRANSFERS



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INCOME INEQUALITY AND GROWTH: THE ROLE OF TAXES AND TRANSFERS

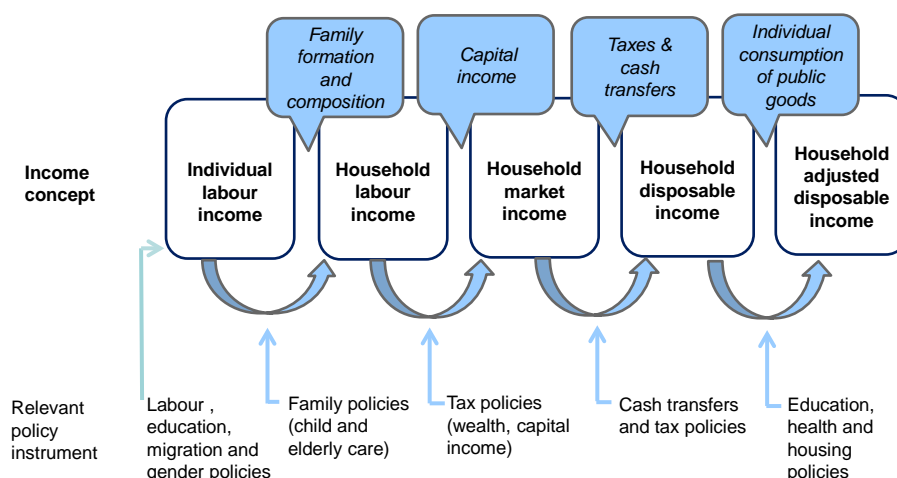
- Inequality of income before taxes and transfers is mainly driven by the dispersion of labour income and the prevalence of part-time employment and inactivity. Despite their wider dispersion, self-employment and capital income play a smaller role.
- Tax and transfer systems reduce overall income inequality in all countries. On average across the OECD, three quarters of the reduction in inequality is due to transfers, the rest to direct household taxation.
- In some countries, cash transfers are small in size but highly targeted on those in need. In others, large transfers redistribute income mainly over the life-cycle rather than across individuals.
- The personal income tax tends to be progressive, while consumption taxes and real estate taxes often absorb a larger share of the current income of the less well-off.
- Some reforms of tax and transfer systems entail a double dividend in terms of reducing inequality and raising GDP per capita. In particular, reducing tax expenditures, which mostly benefit the well-off, contributes to equity objectives while also allowing for a growth-friendly cut in marginal tax rates.
- Other reforms may entail trade-offs between these two policy objectives. Shifting the tax mix to less-distorting taxes – in particular away from labour towards consumption – would improve incentives to work and save, but raise inequality – at least at a given point in time.

Understanding inequality

1. What ultimately matters for people is their income after taxes and transfers, which largely frames their consumption possibilities. The best and most comprehensive available income measure is household disposable income that has been adjusted for household size and for publicly-provided in-kind transfers, such as public spending on education and health care. This income concept, which should ideally be further adjusted to take indirect taxes into account, is shaped by various factors, which are summarised in Figure 1. Income distribution measures are discussed in Box 1.

2. This Policy Note covers two of these five income concepts – household market income and household disposable income, as they are the most relevant in shaping income inequality. It focuses on inequality at a given point in time. Concerns with different aspects of inequality may be less acute, when looked at over people's entire lifetime, as fluctuations of income over time are not considered. For example, consumption and real estate taxes tend to be less regressive from a lifetime than from a current income distribution perspective. An analysis of lifetime income inequality is not possible, due to the absence of harmonised cross-country datasets.

Figure 1. From individual labour earnings to adjusted household disposable income



Box 1. Income distribution measures

Income inequality measures fall into two categories: one-number summary statistics, such as the Gini index, and information about the income distribution at various points, such as shares of income or percentile ratios. One-number summary statistics measure the income distribution throughout the entire distribution. The Gini index ranges from zero (perfect equality) to one (one individual or household receives all the income and the others receive none). The concentration coefficient is a variant of the Gini index, with the only difference being that individuals are not ranked by the values of the income concept for which inequality is computed, but by their disposable income. Shares of income or percentile ratios provide a picture of inequality at specific points in the income distribution, by comparing, for instance, the income of the 90th percentile to that of the 10th percentile.

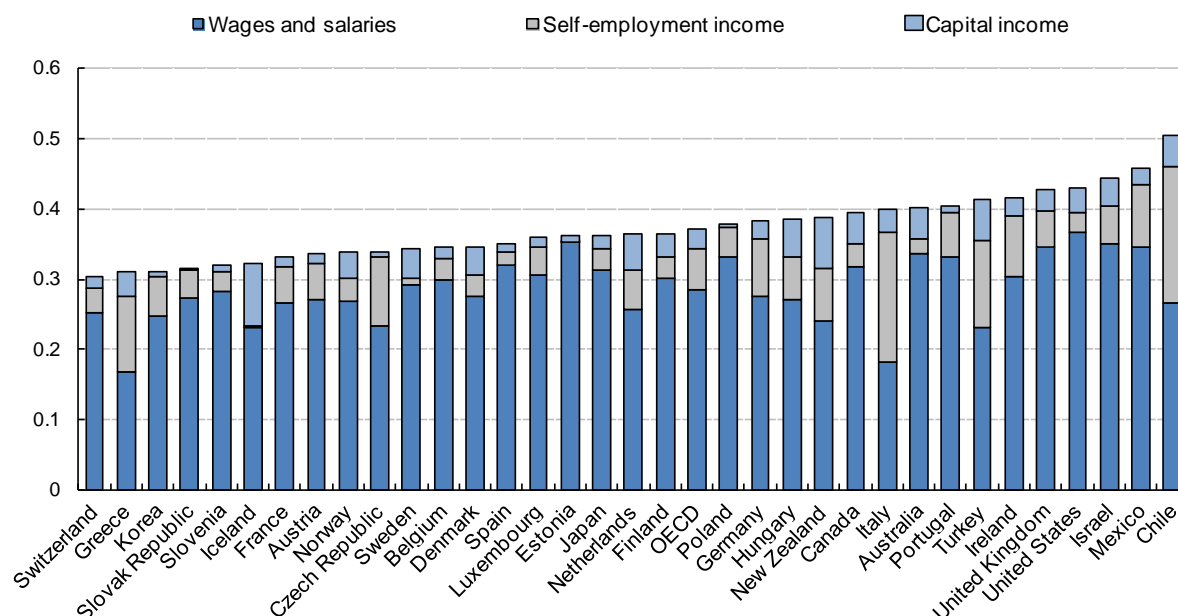
These inequality measures are applied to standardised household surveys, which are assembled in the OECD Income Distribution and Poverty Database. Despite harmonisation, the database has limitations: *i)* The richest often fail to respond and, when they do, they tend to under-report their income, while the poorest may be too marginalised to respond; *ii)* Non-response rates and misreporting varies across countries; *iii)* The income data do not include some components such as home production and imputed rent; *iv)* Household income and property taxes as well as social security contributions paid by employees are included, but social security contributions paid by employers, indirect and corporate income taxes are not, making it difficult to draw cross-country comparisons on the size and redistributive impact of tax systems based on household surveys.

Before taxes and transfers, income dispersion mainly reflects labour market outcomes

3. Countries differ widely with respect to the level of labour income inequality. Labour income inequality is largely shaped by differences in wage rates, hours worked and inactivity. Total market income, which also includes capital and self-employment income, is more concentrated than labour earnings. Even so, given their generally small size, capital income and self-employment income is not a major determinant of total household market income dispersion in most OECD countries. Labour market income accounts for around 75% of the dispersion on average in the OECD, as compared with just 25% for self-employment and capital income combined (Figure 2).

Figure 2. **Labour income inequality is the main contributor to the dispersion in household market income**

Contributions to the concentration coefficient of market income, working age population, in the late 2000s



Note: Contributions to overall household market income inequality are derived by multiplying the concentration coefficients of each income source by their weight in total market income. The data for Greece, Hungary, Mexico and Turkey are net of taxes. Data for France and Ireland refer to the mid-2000s. The concentration coefficient of market income is computed as the Gini index with individuals ranked by household disposable income.

Source: OECD Income Distribution and Poverty, *OECD Social Expenditure Statistics* (database).

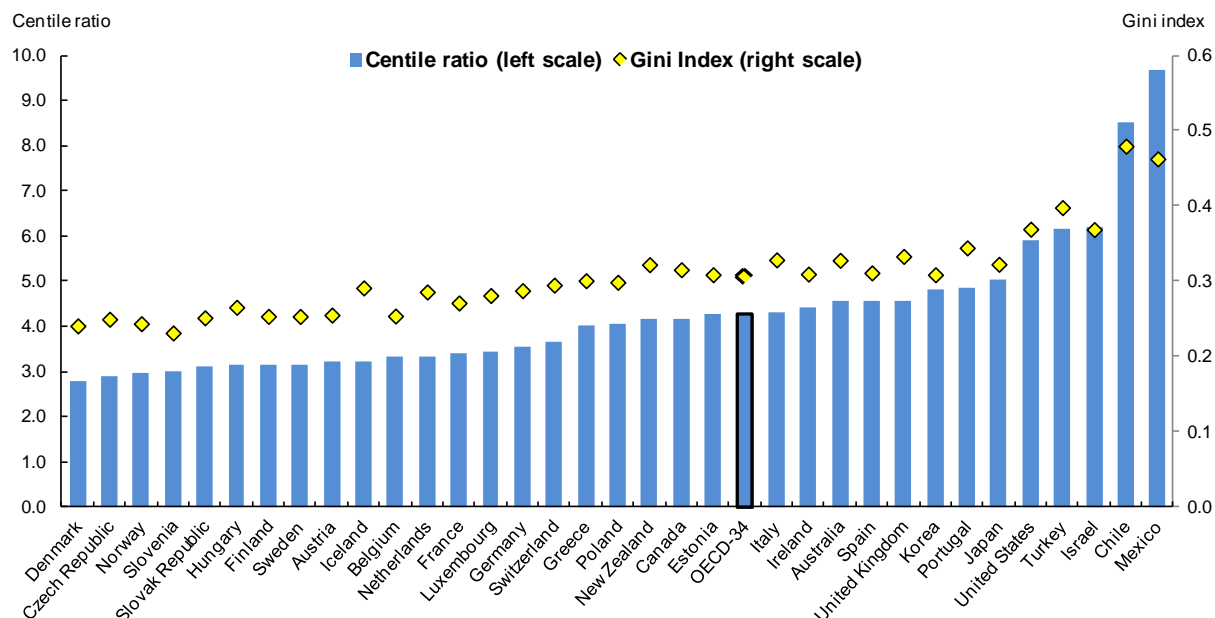
What drives inequality in household disposable income?

Taxes and transfers reduce inequality in all OECD countries

4. OECD-wide inequality in income after taxes and transfers, as measured by the Gini index, was about 25% lower than for income before taxes and transfers in the late 2000s. That said, the distribution of income after taxes and transfers still varies widely across countries (Figure 3). Indeed, after taxes and transfers, the Gini index ranged from below 0.25 in Slovenia (little inequality) to 0.5 in Chile (high inequality). The most unequal countries before taxes and transfers usually remain so after taxes and transfers, even though they tend to redistribute more. Percentiles, which rank individuals by income level in an ascending order, provide an intuitive way to gauge the width of the income distribution. In the late 2000s, the income of the 90th centile, which includes rich households, was three times higher than the income of the 10th centile, which includes poor households, in several Eastern European and Nordic countries. But this ratio stood above 6 for Chile, Israel, Mexico and Turkey. Also, cross-country differences in the share of top income earners (99th centile) in total income are very wide, ranging from 4.5% for Sweden to 18.1% for the United States.

Figure 3. **The divide between the rich and the poor is quite pronounced in some countries**

Household disposable income: Gap between the 10th and the 90th centile and the Gini index in the late 2000s



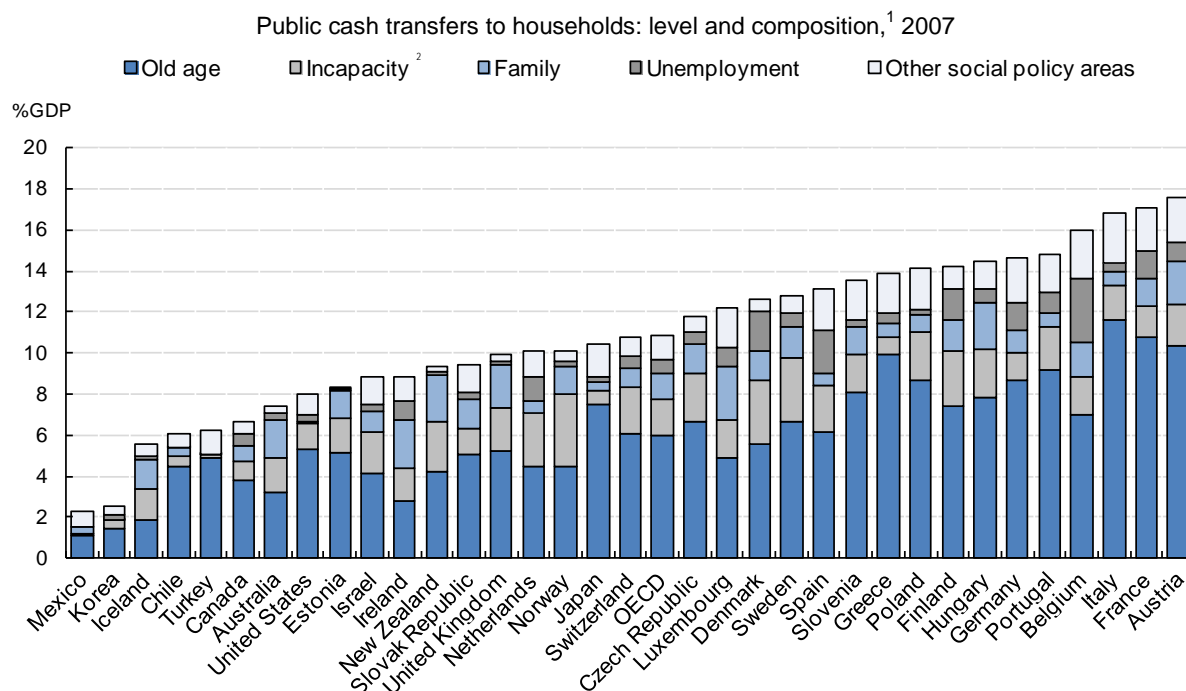
Note: The Gini index ranges from zero (perfect equality) to one (one individual or household receives all the income and the others receive none). Data for France and Ireland refer to the mid-2000s instead of the late 2000s.

Source: OECD Income Distribution and Poverty Database, *OECD Social Expenditure Statistics* (database).

Some countries rely heavily on taxes and transfers to influence distributional outcomes

5. Cash transfers – such as pensions, unemployment and child benefits – account for more than three quarters of the overall redistributive impact in the OECD on average and taxes for the remaining part. There are large differences across the OECD in the size, composition and progressivity of taxes and cash transfers. On the transfer side, pensions account for the bulk of total transfers in most, but not all, countries (Figure 4). They primarily aim at redistributing income over the lifetime of individuals – those with higher incomes contribute more but will also receive higher pensions. Thus, pensions often redistribute little across individuals, but mainly redistribute over their entire lifetime. Other transfers are usually more progressive, although how much depends on their design, *e.g.* the relative role of flat *versus* income-related benefits. In most countries, family and housing benefits are either universal or means-tested, thus involving more redistribution across individuals than benefits based on the insurance principle, which aims at preserving the income level experienced in the past (*e.g.* pensions and unemployment benefits).

Figure 4. **Cash transfers vary greatly across countries, but less redistributive old age transfers often account for the largest share**



1. The data shown here exclude private mandatory spending which accounts for an important share of total social spending in some countries (in particular Chile, Germany and Switzerland). In addition, public cash transfers shown here may not fully account for those programmes and services provided, or co-financed, by local governments. Measurement gaps may be high, notably in federal countries such as Canada.
2. Incapacity-related spending covers expenditure on disability pensions and sick leave schemes (occupational injury and other sickness daily allowances).

Source: OECD Social Expenditure Statistics (database).

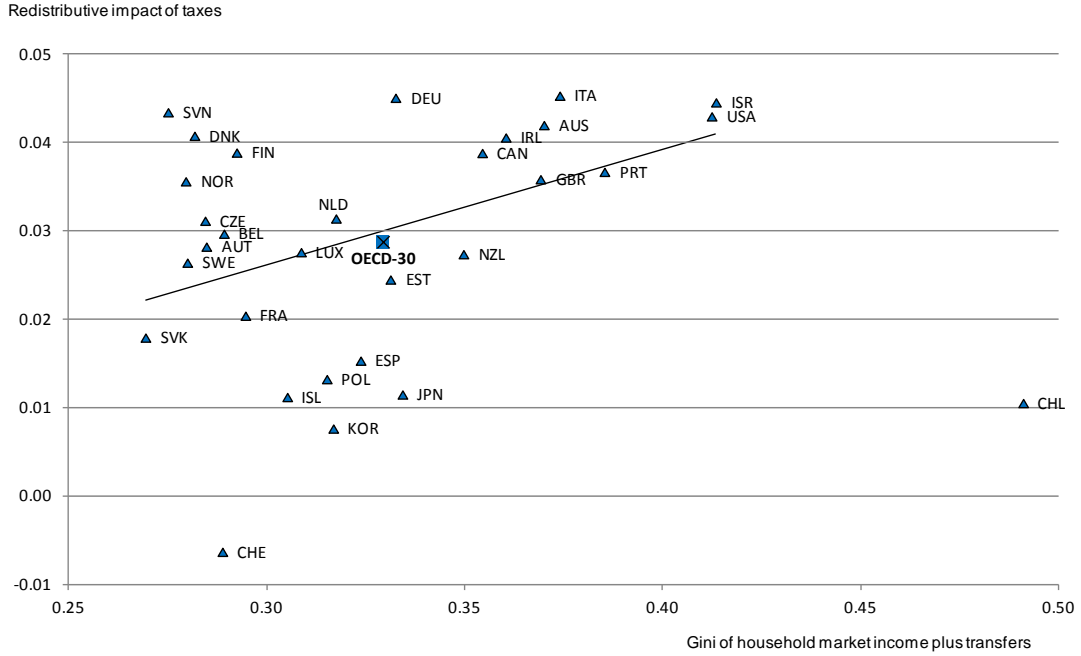
6. The redistributive impact of taxes varies less across countries than the large differences in tax-to-GDP ratios would suggest. Indeed some high-tax countries show little progressivity, either because: *i*) the tax mix favours consumption taxes and social security contributions over more progressive personal income taxes; *ii*) the progressivity of tax schedules is limited; or *iii*) statutory progressivity is weakened by tax expenditures that benefit high-income groups most. In the late 2000s, the redistributive impact of household taxes was the highest in Germany, Israel and Italy (Figure 5, Panel A) and by far the lowest in Switzerland, followed by Chile, Iceland and Korea. Some of the countries with the highest inequality in market income tend to redistribute more through household taxes than less unequal countries.

7. The progressivity of household taxes varies little across countries despite large cross-country differences in the size of taxes. As an illustration, household taxes absorbed more than 35% of household disposable income in Austria, Denmark and Sweden in the late 2000s, but their redistributive impact was lower than in Australia, Israel and the United States, all characterised by a much lower tax-to-income ratio. In many high-tax countries, taxes embody little progressivity (Figure 5, Panel B) – this is particularly the case in Denmark, Iceland and the Netherlands. And household taxes are more progressive in the United States than in most EU countries. However, some countries (including Chile, Korea and Japan) combine a relatively low tax take with very little progressivity.

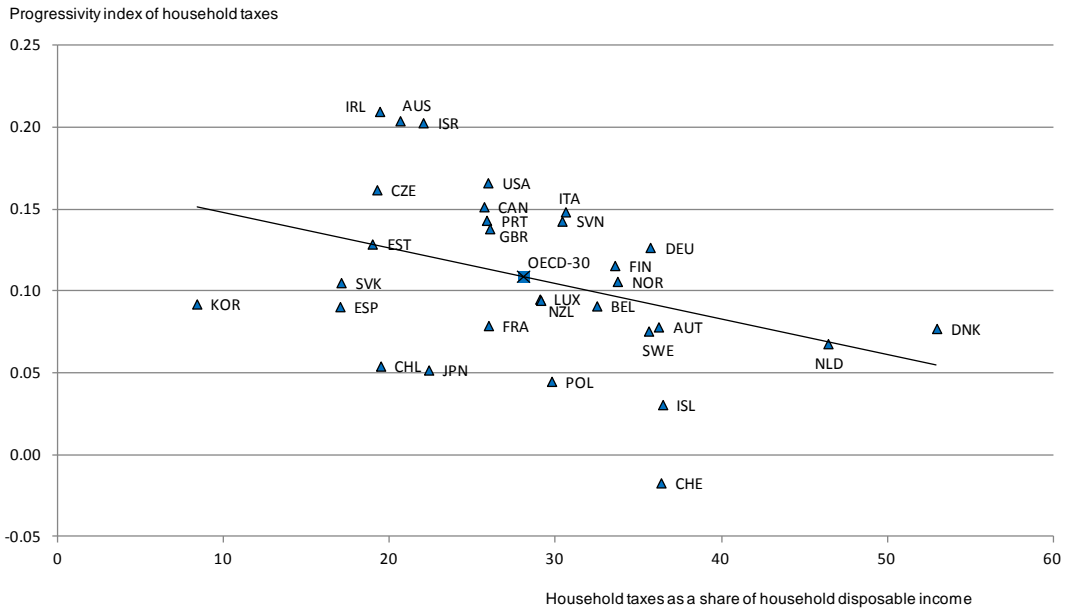
Figure 5. The redistributive impact, size and progressivity of household taxes

In the late 2000s

Panel A. Unequal countries tend to redistribute more through household taxes



Panel B. High tax countries tend to have less progressive household taxes



Note: The redistributive impact of household taxes is measured as the difference between the concentration coefficient of income after transfers but before taxes and that of disposable income (*i.e.* after taxes and transfers). The progressivity index of household taxes is the Kakwani index computed as the concentration coefficient for taxes less the concentration coefficient for income after transfers and before taxes. Data for France and Ireland refer to the mid-2000s. In Panel A, the trend line excludes Chile. Data for Greece, Hungary, Mexico and Turkey are not available.

Source: OECD Income Distribution and Poverty Database.

Classifying countries by their inequality patterns

8. Countries can be grouped according to their inequality patterns (Figure 6). This allows the identification of what inequality dimensions distinguish these groups and provides a guide towards the available policy options for reducing inequality. Five groups have been identified:

- i)* The Nordic countries and Switzerland are characterised by below-average disposable income inequality thanks to little dispersion in wages, in particular at the upper end, combined with a high employment rate. However, the share of part-time employment is above average in all these countries (except Sweden), contributing to inequality in labour income. Cash transfers are often universal and household taxes tend to be largely proportional to household income, implying only moderate redistribution.
- ii)* In eight continental European countries (Belgium, the Czech Republic, Estonia, Finland, France, Italy, the Slovak Republic and Slovenia), inequality originating from the labour market is slightly below the OECD average. Wages are little dispersed in international comparison but inequality in labour earnings is driven by a low employment rate (in particular for Belgium, France, Italy and the Slovak Republic). The high concentration of self-employment or capital income brings inequality in household market income close to the OECD average (except in the Slovak Republic and Slovenia). However, the share of taxes and cash transfers in GDP is high, reducing household disposable income inequality to or below the OECD average.
- iii)* In seven other continental European countries (Austria, Germany, Greece, Hungary, Luxembourg, Poland and Spain) and Japan and Korea, inequality originating from the labour market is at or above the OECD average. However, the underlying causes vary. The wage rate dispersion is wide in all these countries, but the employment rate is low in Greece, Hungary, Korea, Luxembourg, Poland and Spain, while the share of part-time employment is high in Austria and Japan. Cash transfers tend to have little redistributive impact since they are small in size (Korea) or largely insurance-based and thus not highly progressive (Austria, Germany, Greece, Hungary, Japan, Poland and Spain). Overall, both the dispersion in household disposable income and the poverty rate are close to the OECD average.
- iv)* Five English-speaking countries (Australia, Canada, Ireland, New Zealand and the United Kingdom) and the Netherlands all have a large share of part-time employment, driving inequality in labour earnings. On the other hand, the employment rate is above the OECD average in all these countries except Ireland, which reduces inequality. While small in size (for all countries except the Netherlands), cash transfers tend to be more targeted and taxes more progressive than in the other OECD countries, and therefore have a sizable redistributive impact. Household disposable income inequality is, however, above the OECD average in all these countries except for the Netherlands.
- v)* Chile, Israel, Mexico, Portugal, Turkey and the United States are characterised by above average inequality originating from the labour market. This reflects a very wide wage dispersion coupled with a low employment rate (though here the United States is an exception). Capital and self-employment income also tend to benefit a small group of households. Cash transfers have little redistributive impact because they are small in size and often largely insurance-based. The size of tax systems is also small in most of these countries, although progressivity is above the OECD average in some countries. Overall, both inequality in household disposable income and the poverty rate are well above the OECD average.

Growth and inequality: Trade-offs and complementarities associated with tax and transfer system reforms

9. Despite a vast theoretical literature on the link between inequality and growth, no consensus has emerged and the empirical evidence is inconclusive. Still, specific structural reforms that aim at raising living standards also influence the distribution of income. Taxes and transfers, for instance, do not only affect the distribution of income; they also impinge on GDP per capita by influencing labour use and productivity. Some tax reforms appear to be win-win options – improving growth prospects while narrowing the distribution of income. Others, however, may imply a trade-off between these objectives.

Closing tax loopholes, while cutting marginal rates on labour, would foster equitable growth

10. Some policy options could promote growth and reduce inequality. Cutting back tax expenditures, which mainly benefit high-income groups, is likely to be beneficial both for long-term GDP per capita, allowing a reduction in marginal tax rates and for a more equitable distribution of income. Tax relief often distorts resource allocation. Moreover, scaling back tax expenditures would reduce the complexity of the tax system, and thus improve tax compliance and lower collection costs. Specific tax expenditures that should be reconsidered include tax relief on mortgage interest in countries that do not tax imputed rent, tax incentives to promote pension savings or reduced taxation of capital gains from the sale of a principal or secondary residence. Other tax reliefs may provide tax avoidance instruments for top-income earners. In particular, there is little justification for tax breaks for stock options and carried interest. Raising such taxes would increase equity and allow a growth-enhancing cut in marginal labour income tax rates.

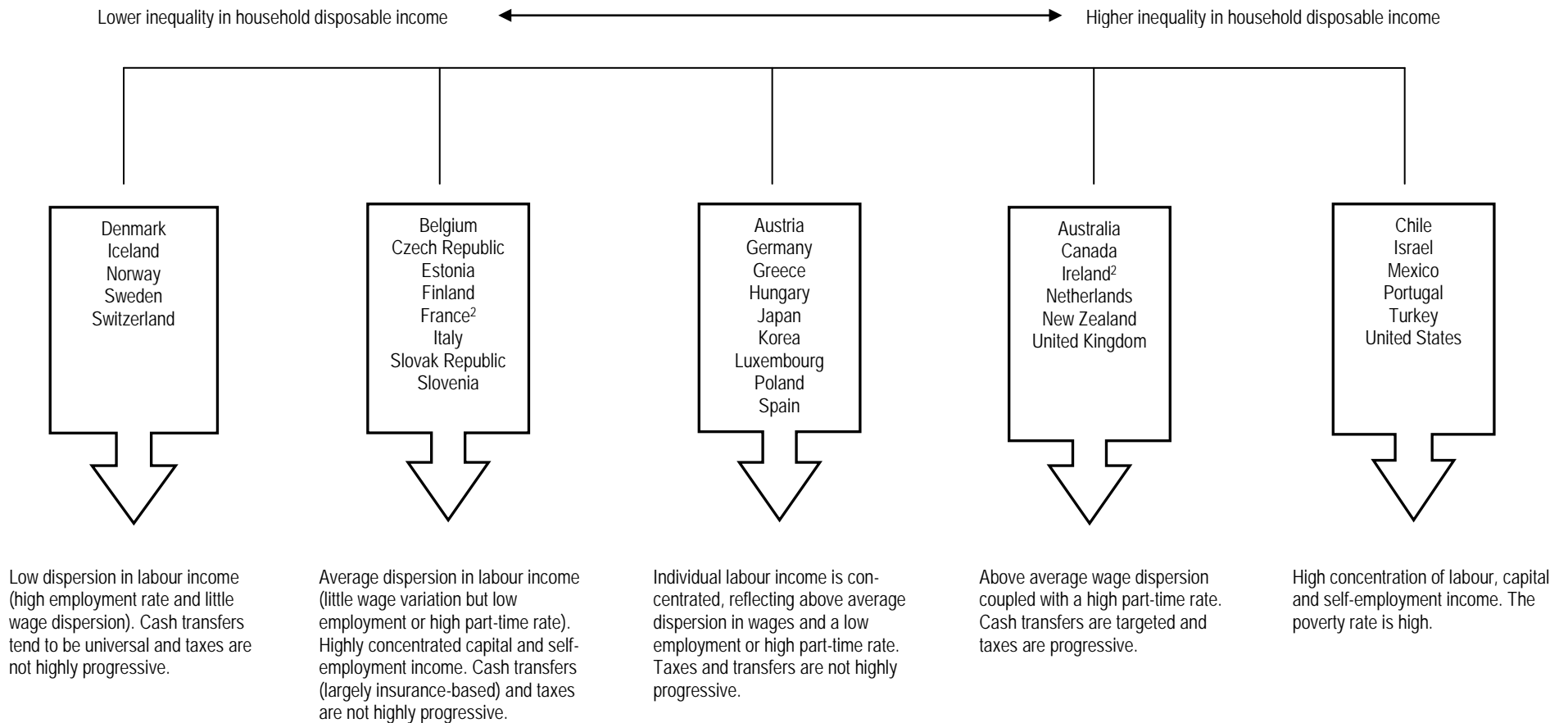
Shifting revenues away from progressive taxes could raise inequality, but promote growth

11. Some taxes have a greater adverse effect on economic activity than others. Personal and corporate income taxes are the most distortive taxes as they have sizable negative effects on labour use, productivity and capital accumulation. Shifting the tax mix away from such taxes and towards recurrent taxes on immovable property (the least distortive) and consumption taxes should thus raise living standards. However, there is likely to be a trade-off with the income distribution objective since personal income taxes are progressive while real estate and consumption taxes are at best neutral in a lifetime perspective. Targeted transfers, however, can reduce the severity of this trade-off.

The effect of transfers on income inequality and growth depends on their design

12. Transfers are usually progressive, although their degree of progressivity depends on their features, *e.g.* on the relative importance of flat *versus* income-related benefits. Effects on GDP per capita depend on whether transfers undermine work incentives with adverse effects on hours worked and income levels. This need not be the case if they are properly designed or accompanied by offsetting measures. For instance, high, but degressive, unemployment benefits may have only limited adverse effects on work incentives when a coherent activation strategy is in place. Likewise, high old-age pension benefit replacement rates may not affect labour force participation of older workers much, if the system is actuarially neutral. Targeted transfers are likely to have adverse incentive effects for those individuals approaching the income level at which benefits are being withdrawn. Adverse incentive effects can be mitigated by avoiding thresholds and the associated spikes in marginal effective tax rates. Universal benefits are likely to have comparatively lower incentive effects, but a higher tax take – which itself entails economic distortions – is needed to finance them.

Figure 6. Country groups with similar patterns of inequality¹



1. Country groups are derived from a cluster analysis of a set of 12 core income inequality indicators, with standardised values and unsquared Euclidean distance to measure differences between groups. Various alternative scenarios have been run. They suggest that the two groups to the right are very stable. The dividing lines between the three groups to the left are less sharp.

2. For France and Ireland, mid-2000s (instead of end-2000s) data have been used for the cluster analysis.

Source: Hoeller, P. *et al.* (2012), "Less Income Inequality and More Growth – Are they Compatible? Part 1. Mapping Income Inequality Across the OECD", *OECD Economics Department Working Paper*, No. 924.

Suggested further reading

The main papers providing background to this note are:

Hoeller, P., I. Joumard, M. Pisu and D. Bloch (2012), "[Less Income Inequality and More Growth – Are They Compatible? Part 1. Mapping Income Inequality Across the OECD](#)", *OECD Economics Department Working Paper*, No. 924.

Joumard, I., M. Pisu and D. Bloch (2012), "[Less Income Inequality and More Growth – Are They Compatible? Part 3. Income Redistribution via Taxes and Transfers across OECD Countries](#)", *OECD Economics Department Working Paper*, No. 926.

OECD (2012), "Inequality in Labour Income – What are its Drivers and how Can it Be Reduced?", *OECD Economics Department Policy Note*, No. 8.

Additional related papers include:

Fournier, J-M. and I. Koske (2012), "[Less Income Inequality and More Growth – Are They Compatible? Part 7. The Drivers of Labour Earnings Inequality – An Analysis Based on Conditional and Unconditional Quantile Regressions](#)", *OECD Economics Department Working Paper*, No. 930.

Fredriksen, K. (2012), "[Less Income Inequality and More Growth – Are They Compatible? Part 6. The Distribution of Wealth](#)", *OECD Economics Department Working Paper*, No. 929.

Hoeller, P. (2012), "[Less Income Inequality and More Growth – Are They Compatible? Part 4. Top Incomes](#)", *OECD Economics Department Working Paper*, No. 927.

Kierzenkowski, R. and I. Koske (2012), "Less Income Inequality and More Growth – Are They Compatible? Part 8. The Drivers of Labour Income Inequality – A Review of the Recent Literature", *OECD Economics Department Working Paper*, No. 931.

Koske, I., J-M. Fournier and I. Wanner (2012), "[Less Income Inequality and More Growth – Are They Compatible? Part 2. The Distribution of Labour Income](#)", *OECD Economics Department Working Paper*, No. 925.

OECD (2011), [Divided We Stand: Why Inequality Keeps Rising](#), OECD Publishing.

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