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Economic Growth from the Household Perspective: GDP and Income Distribution Developments Across OECD Countries

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ABSTRACT/ RÉSUMÉ

Economic Growth from the household perspective: GDP and income distribution developments across OECD countries

Abstract: This paper provides an assessment of how households' income has fared compared with GDP. While the prime focus is on incomes around the median, attention is paid also to the bottom of the income distribution. Thus, one contribution of the paper is to deliver a fresh assessment of the evolution of inequality and poverty across OECD countries over the last fifteen years. The analysis relies on a rich array of indicators, producing new evidence of the various patterns of differences in income distributions across countries and over time. For example, it assesses the extent to which stability in overall income inequality masks compensating changes between the lower and upper halves of the income distribution. Also, it explores whether contracting inequalities coexist with increasing poverty. The paper adds to previous studies by introducing, measuring and analysing income polarisation in a cross-country comparative perspective. Distinguishing polarisation from inequality and comparing their evolution over time provides new policy-relevant perspectives on the nature of the changing income distribution.

JEL codes: D31, I31, I32
Keywords: income distribution, inequality, poverty, polarisation, middle class, median income

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La croissance du point de vue des ménages: PIB et distribution des revenus dans les pays de l'OCDE

Résumé: cet article analyse les évolutions des revenus des ménages en comparaison avec celles du produit intérieur brut (PIB). L'analyse se concentre sur les revenus proches de la médiane, mais une attention particulière est également portée aux bas revenus. Ainsi, une des contributions du papier est de dégager un nouveau diagnostic de l'évolution des inégalités et de la pauvreté au cours des quinze dernières années dans les pays de l'OCDE. L'analyse repose sur un ensemble riche d'indicateurs, et produit une description fine de la nature des différences de distribution du revenu entre pays et au cours du temps. Par exemple, l'article montre qu'un niveau stable de l'inégalité dans son ensemble peut masquer des changements en sens inverse et qui se compensent entre la moitié haute et la moitié basse de la distribution. Aussi, l'article explore la possibilité que la réduction des inégalités puisse s'accompagner d'une hausse de la pauvreté. L'analyse étend les études précédentes en introduisant, mesurant et analysant la polarisation des revenus, et ce dans une perspective comparative entre pays. La distinction entre le concept de polarisation celui d'inégalité et la comparaison de leur évolution au cours du temps portent un éclairage nouveau, y compris en matière de politique économique, quant à la nature des changements de distribution du revenu.

Codes JEL: D31, I31, I32
Mots-clés: distribution du revenu, inégalités, pauvreté, polarisation, classe moyenne, revenu médian

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ECONOMIC GROWTH FROM THE HOUSEHOLD PERSPECTIVE: GDP AND INCOME DISTRIBUTION DEVELOPMENTS ACROSS OECD COUNTRIES

By Orsetta Causa, Sonia Araujo, Agnès Cavaciuti, Nicolas Ruiz and Zuzana Smidova[1]

1. Introduction and main findings

1. GDP per capita is the most widely used measure of living standards as well as a target headline indicator in the context of policy-oriented analysis and recommendations – for instance in the *Going for Growth* structural surveillance exercise (OECD, 2013a). Yet, on its own GDP per capita falls short of accurately measuring people's wellbeing, even from a narrow material living standard perspective (Stiglitz et al, 2009, OECD, 2011a, OECD, 2010,[2] Boarini et al., 2006). For instance, the median household income – an income measure which better reflects the actual material living standards of a "typical" household – has evolved quite differently from GDP per capita in a number of countries. In the United States, the relative stagnation of the median household disposable income since the mid-1990s has fuelled long-standing concerns about rising inequality (Gordon, 2009, Gordon and Dew-Becker, 2008) and led to a resurgence of an old debate about the shrinking middle class (Council of Economic Advisers, February 2012).

2. Against this background, this paper aims at assessing material living standards by focusing more directly on household income.[3] It provides an assessment of how households' income has fared compared with GDP. While the prime focus is on income levels and dispersion around the median, attention is paid also to the bottom of the income distribution. This is consistent with a Rawlsian approach to social welfare, which puts strong weight on the lower end of the distribution. It also reflects mounting concerns on the potential negative effects of the current economic and policy environment on the most vulnerable. Thus, one contribution of the paper is to deliver a fresh assessment of the evolution of inequality and poverty across OECD countries over the last fifteen years, complementing in this regard earlier studies on the topic

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1. The authors are members of the Economics Department of the OECD. They would like to thank their colleagues Romina Boarini, Oliver Denk, Alain de Serres, Jorgen Elmeskov, Michael Forster, Vincent Koen, Fabrice Murtin, Oliver Roehn, Stefano Scarpetta, Jean-Luc Schneider as well as participants to the Working Party No. 1 of the Economic Policy Committee for useful comments and suggestions. They also thank Caroline Abettan for editorial assistance.

2. See Annex 2.A2 of *Going for Growth 2010*, "Incorporating Terms-of-Trade Gains and Losses into International Income Comparisons".

3. This is also one of the recommendations from the Stiglitz-Sen-Fitoussi commission (Stiglitz et al, 2009), whose main messages are increasingly endorsed by governments, as witnessed by formal initiatives taken in Austria, France, New Zealand, Norway and the United Kingdom. See also Atkinson (2012), "Putting People First and Macro-economic Policies"— paper discussed at the OECD New Approaches to Economic Challenges (NAEC) October 2012 meeting. The paper formulates a concrete proposal to replace the GDP headline indicator with a household-income based indicator and it illustrates the implications of this proposal for Euro area countries and the United Kingdom. Moreover, OECD country reviews are increasingly covering wellbeing and its policy implications; see for example the recently-released Austria survey (OECD, 2013b).

(OECD, 2012, OECD, 2011a and OECD, 2011b). Furthermore, the paper goes beyond earlier studies in two respects:

- Firstly, the analysis relies on a richer array of indicators, producing new evidence of the various patterns of differences in income distributions across countries and over time. For example, it assesses the extent to which stability in overall income inequality masks compensating changes between *e.g.* the lower and upper halves of the income distribution. Also, it explores whether contracting inequalities coexist with increasing poverty.

- Secondly, the paper adds to previous studies by introducing, measuring and analysing income polarisation (defined here as clustering of the population away from middle incomes around two sharply defined poles at the low and high-end of the income distribution) in a cross-country comparative perspective. Distinguishing polarisation from inequality and comparing their evolution over time provides new policy-relevant perspectives on the nature of the changing income distribution.

3. The central concept used throughout is that of household disposable income (covering wages and salaries, self-employment income, capital income and transfers net of taxes),[4] as this is considered the best proxy of households' economic resources while being measured according to internationally agreed standards. Moving from GDP per capita to household disposable incomes across the distribution requires prior analysis of the conceptual and measurement differences between macro and micro-based income measures. Table 1 summarises the roadmap of the approach.[5]

4. The following main conclusions emerge from the analysis:

- Cross-country comparisons of material living standards are broadly unaffected by the use of mean or median household disposable income instead of GDP per capita. However, countries compare and rank differently when material living standards are assessed based on household incomes at the bottom of the income distribution.
- Between the mid-90s and the beginning of the Great Recession, GDP has in most countries grown faster than households' mean disposable income, possibly reflecting *inter alia* a faster rise in company profits and re-invested earnings than in employee compensation – resulting in a lower wage share.
  - This general trend was temporarily reversed during the trough of the recession, owing to the impact of automatic stabilisers and anti-crisis measures.
  - Only countries with large commodity-producing sectors experienced stronger gains in household real disposable incomes than in GDP, reflecting favourable shifts in terms of trade.
- Between the mid-90s and the late 2000s, OECD countries experienced "inequality convergence", with marked and opposite-sign changes in overall disposable income inequality for the most and the least unequal countries. The largest increases in inequality were observed in Sweden, Denmark, Finland and Israel and the largest reductions in Turkey, Mexico and Chile.

4. Section 2 presents SNA-based household *adjusted* disposable income per capita, which also covers in-kind transfers from government. While theoretically this is the most appropriate income concept, especially for analysing the income distribution, in practice available estimates are still experimental, hence associated data are not available on the basis of internationally agreed standards. See discussion in Section 3.2.

5. All Figures and Tables are grouped at the end of the text.

- In most countries, changes in inequalities were driven by changes occurring within each half of the income distribution rather than between them. This implies that increases in overall inequality resulted from higher income inequality among the lower and upper-half of the distribution rather than between them:
  - Mean household incomes grew stronger than median incomes in about half of OECD countries, in particular Austria, Australia, France, Denmark, Canada and the United States. In these countries, there is also evidence that middle-income households lost ground relative to the most affluent. The opposite was observed in countries characterised by higher levels of inequality such as Chile, Mexico and Turkey.
  - Median household income outpaced bottom income growth in two-thirds of OECD countries. The divergence was particularly strong in Israel, Sweden, Spain, Finland, the United States and Denmark.
  - As bottom incomes lost ground relative to middle incomes between the mid-90s and the late-2000s, relative poverty increased in most OECD countries. Also, number of countries experienced contrasting developments in the incidence of poverty rate and its depth. This notably occurred in countries exhibiting sharp rises (Sweden) or declines (Ireland and Portugal) in relative poverty.

5. The rest of the paper is structured as follows. Section 2 compares the level and evolution of GDP per capita with SNA-based measures of household incomes across countries. Section 3 summarises the non-negligible differences between micro versus macro-based measures of households' income and provides evidence on the cross-country and time series evolution of median (versus mean) incomes and the "middle class". Section 4 focuses on households' income at the bottom of the income distribution, relying on low-income standards and poverty measures. It attempts to qualify "low-tail" inequality across OECD countries, highlighting for instance that a given level of overall inequality can coexist with various patterns of inequality at the bottom of the income distribution. Based on the broad patterns emerging from the analysis of the multiple indicators covered throughout the paper, Section 5 concludes with a summary dashboard of countries' relative developments.

2. From GDP to household adjusted disposable income

6. The focus of this paper is on households and individuals, against the background of aggregate economic conditions, measured by GDP. The analysis starts with household adjusted disposable income per capita, as available in national accounts and presented in *How's Life*? (OECD, 2012a). Within the national accounts framework, household adjusted disposable income is considered as the measure that best reflects people's economic resources as it combines information on a large number of market and non-market resources. Household adjusted disposable income is obtained by adding to the flows that make up people's gross income (earnings, self-employment and capital income, as well as current monetary transfers received from other sectors) the social transfers in-kind that households receive from governments (such as education and health care services), and then subtracting the taxes on income and wealth and the social security contributions paid by households. This measure can be expressed in both gross and net terms, with the difference being households' consumption of fixed capital. [6] While

6. Consumption of fixed capital is defined as the reduction in the value of the fixed assets used in production. At the household level, the most important fixed asset is usually housing. Under the SNA framework, consumption of fixed capital is estimated by applying a depreciation rate to the current value of each capital asset, *i.e.* its current market price. The depreciation rate varies across countries and depends on the assumption about assets' service lives (*i.e.*, how long the asset is assumed to be used; for example in the United States it is assumed that the service life of a dwelling is 80 years). Depreciation functions may be

How's life? referred to the net measure, this paper relies on the gross measure, mainly because of better data availability.[7] It is worth emphasising some of the major limitations generally associated with household income measures – including the one being used here, in particular: *i*) indirect taxes are not included in the measure of taxes paid by households, implying that their impact is captured only to the extent they are reflected in prices; and *ii*) the deflation procedure cannot rely on different price indices by income groups (see below).

7. Not surprisingly, cross-country differences in household adjusted disposable income per capita are large (Figure 1). For the countries analysed,[8] household adjusted disposable income is highest in the United States, about six times as high as in South Africa, where it is the lowest. Household adjusted disposable income per capita is closely related to GDP per capita, with a pairwise correlation of 0.94 over the countries and years for which data are available. Indeed, cross-country comparisons in material living standards are weakly affected by the use of household adjusted disposable income instead of GDP. There are nonetheless some exceptions such as Luxembourg and Ireland, faring much better in terms of GDP than in terms of household income, reflecting the strong impact of net transfers from abroad, as already highlighted in previous studies such as OECD (2011a) and Boarini et al (2006).[9]

8. Looking beyond the headline numbers, the structure of household adjusted disposable income is relatively homogeneous across countries and it has been relatively stable over time (Table 2). The main component of household gross adjusted disposable income is compensation of employees, followed by income from unincorporated enterprises and transfers in-kind provided by the public sector. On average across OECD countries, social security contributions and other taxes paid by households, net of the current monetary transfers that they receive, detract around 8% of household income. The contribution of taxes, social contributions, social benefits and current transfers has become positive over the recent period for Greece and Portugal. This clearly reflects the impact of the recession – *i.e.* the surge in unemployment and the contraction in aggregate demand reduce taxes received by governments and increase households' reliance on transfers and benefits – and confirms recent OECD findings on the evolution of incomes during the crisis (OECD, 2013c).

9. Since the mid-1990s and in particular over the pre-crisis period, aggregate output has grown considerably more than households' economic resources in many countries. The gap was particularly large in Korea, Central European countries (namely Czech Republic, Hungary, Poland and Slovenia) and Estonia (Figure 2, Panels A and B). In fact, only a few countries with large commodity-producing sectors experienced stronger gains in household incomes relative to GDP (*e.g*. Norway and Russia and, to a lesser extent, Australia).

10. The growth gap between GDP and household incomes temporarily narrowed during the initial phase of the crisis, as automatic stabilisers (i.e. rises in social transfers and falls in income taxes during

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geometric (US assumption for dwellings) or linear. On average across OECD countries for which data are available, consumption of fixed capital represents -5% of net adjusted household disposable income.

7. There are well-known measurement issues in the estimation of households' consumption of fixed capital, suggesting that gross adjusted disposable income may be more appropriate for cross-country comparative purposes. The difference between the two series (net and gross) is modest and the correlation between them close to one (0.99).

8. The data cover all OECD countries except Iceland, Israel and Turkey. South Africa and the Russian Federation are also covered. See Figure 1.

9. Experimental work reported in OECD (2010) suggests that for Ireland (and also for Norway) this pattern could also reflect terms-of-trade effects reducing the level of domestic incomes due to country specificities in the composition of trade.

recessions) and discretionary anti-crisis measures had the effect – to a varying extent across countries – of protecting households' disposable incomes from recession-induced losses in market incomes (i.e. income from work and capital) (Figure 2, Panel C).[10] However, with the effect of automatic stabilisers and anti-crisis measures tapering off, the diverging trends resumed as GDP growth largely outpaced household income growth in 2010-11 (Figure 2, Panel D). Indeed, more than one third of OECD countries experienced contracting household incomes in recent years, reflecting in part the impact of fiscal consolidation.

11. Given that the two concepts of incomes are measured in constant prices, part of the divergence in their trends is due to differences in the corresponding price deflators.[11] In this regard, comparing trends in GDP and household incomes in current as opposed to constant prices (Figure 3, Panels A and B) underscores the potential role of differential price developments and in particular terms-of-trade effects. It shows for instance that the faster real household income gains in commodity-exporting countries were almost fully accounted for by favourable term-of-trade effects; in the case of Norway household income grew even more slowly than GDP when measured in current prices. Conversely, the gap in real household income gains *vis-à-vis* GDP gains observed in Korea and Sweden narrows considerably when measured in current prices, suggesting adverse terms-of-trade effects, possibly linked to falling ICT prices.[12]

12. Still, even when measured on the basis of current prices, the ratio of household income to GDP – which varies substantially across countries – has fallen over time in most of them, especially before the beginning of the crisis (Figure 4). Many factors underlie this trend decline, including: a faster rise in corporate savings and re-invested profits than in employee compensation – resulting in a lower share of primary income accruing to households; a stronger tendency towards outward transfers of firms' profits; and changes in redistribution policies through taxes and social benefits. Discrepancies between GDP and household adjusted disposable income may also be reflective of resources that will in principle increase household material living standards in the future (e.g. re-invested profits) or may diminish it (e.g. higher consumption today financed through external debt). Properly disentangling the various factors underlying these differences is beyond the scope of the present analysis.

3. From mean to median household income – from macro to micro data

13. Mean household disposable income does not say much about the distribution of economic resources across households. To take into account a possible skewness of the distribution, median as opposed to mean income comes closer to being representative of typical household economic resources. In practice, an observed shortfall of median relative to mean household incomes also provides a preliminary assessment of inequality.

10. This pattern is in line with recent OECD work on inequality trends during the crisis, where it is shown that taxes and social transfers alleviated the effects on disposable incomes of falling market incomes during the crisis (OECD, 2013c).

11. Constant values refer to base year 2005. GDP is deflated with the GDP deflator and then converted in US dollars with constant PPPs for the GDP deflator. Household adjusted disposable income is deflated with the deflator for actual individual consumption and then converted with constant PPPs for actual individual consumption. Consistent with the inclusion of in-kind transfers in the income measure, the PPP index and deflator for actual individual consumption include price estimates of government-provided services.

12. This is in line with findings reported in OECD (2010).

3.1 Moving from macro to micro data sources: methodological aspects and associated implications[13]

14. The data source used in this paper to analyse distributional aspects is the OECD Income Distribution Database, which aims at the best possible comparability across countries and over time (Box 1).[14,15] Moving from widely available and internationally harmonised SNA-based income data to survey-based income data[16] raises a number of measurement and methodological issues that need to be borne in mind for subsequent analysis:

- Survey-based data are not available on a yearly basis and time coverage varies widely across countries.

- Survey-based data generally measure income on a cash basis whereas SNA data include systematically several non-cash components such as in-kind public transfers and income from owner-occupied housing.[17] These income components are generally not evenly distributed across the income distribution. For example, in-kind public services represent a higher share of disposable incomes at the bottom of the distribution (see Table 8.1 in OECD, 2011b).[18] The absence of in-kind public services implies that the current paper will likely overestimate the level of inequality in countries (such as e.g. Sweden) where such transfers represent a relatively important income component at the low end of the distribution – hence a major redistribution tool.

- Survey-based data are affected by non-response, which is not random along the income distribution as it increases with the level of income (Deaton, 2005). As a result, household surveys generally fail to measure and track top incomes. To assess top incomes one would need to rely on tax return data, as has been done in recent studies such as Chapter 9 in OECD (2011b), covering 17 OECD countries.[19] While top incomes are not the focus of this study, an associated risk is to underestimate levels and, even more, increases in inequality. Available evidence would suggest that in practice this risk could have tangible (though not measurable) consequences in the case of the United States.

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13. The issues summarised here are covered in more detail in the appendix .

14. The database has been accessed in March 2012.

15. The results presented in this paper may therefore sometimes deviate from national sources. The latter are not generally suitable to produce cross-country comparisons but may sometimes better reflect country-specific developments.

16. Most OECD countries collect these data from household surveys but in some cases such as Nordic countries information is gathered from administrative registers or even from a mix of surveys and registers as in the case of France.

17. While almost two-thirds of OECD countries provide some estimates of non-cash income components such as imputed rents, the high heterogeneity in the methodology applied for deriving such figures makes them unsuited to cross-country comparisons. These items are therefore excluded from the OECD database.

18. The distributive patterns of imputed rents are likely to vary across countries reflecting different estimation methods and also different institutional settings. See Törmälehto and H. Sauli (2010).

19. Chapter 9 in OECD (2011b) is based mostly on pre-tax income data compiled by Atkinson et al. (2011). There is evidence of the rise in top income shares in the three decades before the crisis for certain OECD countries, especially in the United States and also, though substantially less, in Canada and the United Kingdom. See more recent work by Piketty (2013).

- Survey-based data are not defined on a per-capita basis but refer to the concept of "equivalised" (or "per consumption unit") household disposable income.[20]

Box 1. The OECD Income Distribution Database

In order to benchmark and monitor countries' performance in the field of income inequality and poverty, the OECD has developed over the last 20 years a statistical database of a number of standardised indicators. These indicators are based on the central concept of "equivalised household disposable income", i.e. the total income received by the household less the current taxes and transfers they pay, adjusted for household size with an equivalence scale.

The method of data collection used for the OECD Income Distribution Database aims to maximise internationally comparability as well as inter-temporal consistency of data. This is achieved by a common set of protocols and statistical conventions (e.g. on income concepts and components) to derive estimates. The information obtained by the OECD through a network of national data providers is more up-to-date relative to that available through many other statistical sources, but reflects the long time-lags that characterise data collection in this field in most OECD countries. Country estimates are provided to the OECD in the form of semi-aggregated tabulations, and are based on national sources that are deemed to be most representative for each country. One disadvantage of this approach is that it does not allow accessing the original micro-data, which constrains the subsequent analysis that can be performed.

The data collection is undertaken via a standardised questionnaire. Selected data from this questionnaire can be obtained through OECD.Stat cubes available at www.oecd.org/social/income-distribution-database.htm.

The data cover OECD countries and span the period from mid-70s until late 2000s. Currently, the data are not available on a yearly basis and time coverage varies widely across countries, ranging from e.g. three points for Switzerland to 35 points for Canada. Due to the increasing importance of income inequality and poverty issues in policy discussion, the database is in the process of being annually updated. The OECD aims to extend its database to Brazil, China, India, Indonesia, Russia and South Africa.

15. These, together with other factors, explain the gaps between SNA and micro-based measures of mean household incomes (Appendix). For instance, across the countries for which information is currently available, the ratio of micro-based mean household disposable income to macro-based mean adjusted disposable income ranges between 138% in Korea and 61% in Mexico (Figure 5, Panel A). As explained above, one source of these discrepancies is the difference in income components measured by the two sources and SNA data allow for tentatively netting out some of them, as done in Atkinson (2012). The idea is to obtain a national-account estimate of household income that comes conceptually closer to its survey-based (cash) counterpart – which is why it is labelled "spendable income" (Figure 5, Panel B). This is estimated by subtracting from household adjusted disposable income several non-cash components when they are available in the national accounts: *i*) the value of individual services which households receive free of charge from governments, such as health, education and cultural services (the so called "social transfers in kind"); *ii*) changes in households' net equity pension funds, and *iii*) owner-occupied imputed rent.[21]

16. By definition, the ratio of micro-based to macro-based mean household disposable income is higher when the latter is measured by spendable income. However, the relative ranking of countries is not hugely affected and substantial variations across them remain, suggesting that factors other than imputed components drive the wedge between the two sources of income. In particular, both ratios are relatively high for Nordic countries and the Netherlands, which could tentatively reflect better coverage of top

20. The notion of "equivalisation" implies that the income attributed to each person in a household reflects income sharing within the household and adjusts for household needs. It is assumed that these needs increase with household size, but less than proportionally (total household income is divided by the square root of household size).

21. Because this estimate can be computed for only less than half of OECD countries, it will not be used further in the paper.

incomes through micro sources (because the latter rely on administrative registers) compared with other OECD countries. Another source of discrepancy between the two measures is, as discussed above, the "equivalisation'' of incomes in micro-based measures, which – all else equal –will tend to inflate micro- compared with macro-based measures. This also implies that cross country-differences in the ratio between the two measures could reflect demographic factors such as differences in the structure of households.

17. The household surveys underlying the OECD Income Distribution Database are not structured as panels – they do not follow households and individuals over time. This makes it impossible to measure inequality in a dynamic perspective and therefore to study intra and inter-generational income mobility. As a consequence, this paper focuses on inequality from a static perspective. As introduced in the previous section, an additional limitation of the income inequality assessment presented in the rest of this paper is the implicit assumption of a single representative consumption structure across the income distribution. This is the case in the overwhelming majority of inequality studies because price indices differentiated by population groups are not available for most countries.[22] It is a caveat, however, as people with different income levels not only may buy different bundles of goods (*e.g*. poor people spend more on food and less on leisure), they also may buy their goods and services of different quality in different types of stores (which sell "similar" products at very different prices). [23]

3.2 A first hint at income distribution: Comparing mean and median incomes

18. Cross-country differences in median household disposable income are larger than in mean household disposable. Median household disposable income is highest in Luxembourg, about eight times as high as in Mexico while mean household disposable income is less than seven times higher (Figure 6, Panel A). Despite these differences, using median instead of mean equivalised household disposable income does not affect cross-country comparisons in material living standards: indeed, across countries and years for which the data are available, the correlation between the level of mean and median equivalised incomes is equal to 0.99 and the associated country ranking almost identical (Figure 6, Panels B and C).[24] This general pattern hides some notable exceptions: relative to the OECD average, Chile and the United States feature higher material living standards in terms of mean than median incomes, while the opposite occurs in the case of Belgium and the Nordic countries. This difference is an initial indication of the lower level of income inequality in the latter compared with the former group of countries.

19. Mean and median incomes have, in general, moved in tandem since the mid-1990s. Hence, as was the case for mean income, median income has lagged GDP growth in a large number of countries during the pre-crisis period but has been relatively shielded from the sharp contraction in GDP during the

22. Data on real household disposable income across the income distribution are constructed by deflating nominal values with a common price deflator (in this case following common practice the consumer price index).

23. Some studies have adjusted price indexes for heterogeneity in consumption structures across income groups and have concluded that this had very small distributional implications (see e.g. in France, Quinet and Ferrari, 2008). However, ideally the adjustment should not only apply to consumption structures but also to unit prices in order to take into account that different income groups face different unit prices for the same products. Differentiated prices constructed in such a way to cover both adjustments margins could likely deliver higher inequality than currently measured, because there is evidence that less affluent households buy more frequently and in lower quantities and therefore face higher unit prices compared to the more affluent. The lack of price indices differentiated by population groups might also potentially bias measures of developments in income inequality at times of important changes in relative prices.

24. The correlation between SNA-based household adjusted disposable income per capita and micro-based median household disposable income per consumption unit is equal to 0.93.

initial phase of the crisis (Figures 7 and 8).[25] However, this general finding needs to be qualified with a number of observations that provide information on the evolution of income inequality across OECD countries:

- Mean income growth outpaced median income growth in approximately half of OECD countries – especially in the pre-crisis period (Figure 7), implying that incomes in the middle of the distribution lost ground relative to those in the upper tail of the distribution. The largest gaps in mean versus median income growth rates occurred in Austria, Australia, France Denmark, Canada and the United States.

- The OECD countries characterised by higher levels of inequality, e.g. Chile, Mexico and Turkey, as well as Spain, experienced a substantive narrowing of the gap between mean and median incomes amid different GDP growth rates (Figures 7 and 8).

- Median income growth generally outpaced mean income growth during the crisis (or it fell by less) amid contracting GDP (Figure 7, Panel C). Apart from confirming the role of automatic stabilisers and discretionary measures in protecting households from recession-induced income losses, this suggests that such measures may have been progressive or that crisis-induced income losses have affected in particular the upper-end of the distribution.

3.3 How representative is the median? From the median household to the "middle class"

20. Using the median household income as an alternative to mean income can be justified on the ground that it is a simple and intuitive measure of the situation of the "typical" individual or household. It also comes close, in theory, to the median voter, hence a key focus for policy-makers. However, the median individual or household income on its own does not necessarily fully reflect the evolution of material living standards of a majority of households. Indeed, depending on countries' distribution of income, there may be very few households close to the median, as would be the case for instance if the population was clustered around two far-away poles with a less densely populated middle. One way to focus on the "typical" household while incorporating wider distributional aspects is to try to capture the concept of the "middle class".

The "middle class" and income polarisation: background issues

21. Concerns about a shrinking middle class, along with that of a relative impoverishment of the middle class, have been present for some time in the United States and it has gained recent prominence in Europe.[26] The perceived shrinking of the middle class reflects changes in the distribution of incomes, *i.e.*

25. One word of caution is needed here. As stressed above, the micro data do not allow, contrary to the national accounts data, to obtain a proper time series and therefore isolate the crisis period. This is because survey data are not available on a yearly basis. The figures presented in this and the following sections result from an effort to isolate the crisis period while ensuring an acceptable degree of comparability across countries. Indeed, depending on data availability, it has not been possible to use 1995, 2007 or 2010 data, but the closest year available in each case.

26. The US administration explicitly stated among its primary goals that of promoting policies that lifted middle-class families and their stagnant incomes, see Council of Economic Advisers (2012). In turn, the US political debate is reflected in an abundant academic literature, reaching back to the 1980s, focusing on the relative affluence and size of the middle class. A non-exhaustive list of papers on the shrinking of the US middle class includes Blackbrun and Bloom (1985), Duncan et al. (1991), Levy (1987a and 1987b), Horrigon and Haugen (1988), Bradbury (1986) and Thurow (1984). Recent papers have covered European countries, see Grabka and Frick (2008) on Germany, Goos and Manning (2007) on the UK, Pressman (2007) who provides a cross-country perspective. Ravallion (2010) focuses on developing countries.

increased polarisation. Polarisation can be defined as clustering of the population away from middle incomes around two sharply defined poles at the low- and high-end of the income distribution. A number of studies have attributed this phenomenon to structural changes in the labour market, notably a trend towards job polarisation (Box 2).[27]

Box 2. Job polarisation: an overview

Job polarisation is the label applied to a "hollowing out" in the middle of the wage and occupation distribution, as a result of employment polarising into high wage and low-wage jobs at the expense of middle-income jobs. While there has been an extensive debate on the explanation of this trend such as e.g. skill-biased technological change and globalisation, some consensus has been reached with the identification of (de)-"routinisation" as the main driving factor. The idea is that in advanced countries, technologies are becoming more intense in the use of non-routine tasks concentrated in high-skilled and low-skilled non-tradable service jobs, at the expense of routine tasks concentrated in manufacturing and clerical work (Goos et al. 2009).

In most OECD countries, employment by wage or skill level has become more polarised over the last two decades. Empirical evidence is quite large in this respect.[1] Strong job growth experienced in the US over the period from the 1990s and the beginning of the recession was strongly polarised at the bottom and the top of the wage scale, with a hollowing out in the middle. Over the same period, the European Union exhibited a similar pattern, though the aggregate evidence was more one of upgrading with polarisation, with top jobs showing more growth than the jobs at the bottom. The most important factor behind the disappearing middle was found to be the polarisation of services sector employment, with jobs being generated at the top and at the bottom of the income distribution but comparatively little in the middle.

Recent EU evidence (European Commission, Employment and Social developments in Europe 2011, Chapter 3) suggests that while the recession period (2008-2010) was one of rapid employment contraction, it amplified previous polarisation trends in the sense that it hollowed out the labour market by disproportionately affecting jobs in the middle of the wage distribution. A good proportion of the job losses in the middle of the wage distribution took place in the construction sector, in jobs where skill-wage mismatches were more pronounced, i.e. where the generally observed wage-skill correlation are weak.

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1. See e.g. work undertaken in the context of the European Union, in particular the Eurofounds Jobs Project (EU, 2011, Fernandez-Macias et al. 2008) and CEDEFOP(2011) and academic literature such as e.g. Goos et al (2009), Goos and Manning (2007), Oesch and Rodriguez (2011). See e.g. Autor et al. (2006) on the US, along with Beach et al (1997) who directly link the shrinkage of the middle class with the increase in earnings polarisation.

22. Interest in polarisation and the middle class is also grounded in a political-economy literature suggesting that a polarised society may be conducive to lower provision of public goods and political instability with possible adverse effects on growth (see e.g. Rodrik, 1999, Esterly and Levine, 1997, Perotti, 1996, Alesina et al. 1994, 1999, 2003). [28] Easterly (2001) provides some tentative cross-country empirical evidence that a large and homogenous middle class is associated with higher growth. Ezcurra (2009) relies on European regional-level data to estimate the negative impact of income polarisation on economic growth. Woo (2005) finds that polarisation among socioeconomic groups is associated with fiscal instability, with negative effects on the capital accumulation process and growth.

Atkinson and Brandolini (2012) focus on comparing various measures of the middle class and therefore present a methodologically-focused cross-country perspective.

27. Clearly, household income polarisation also results from factors other than the labour market – in particular demography and the design of tax and transfer policies. However the role of labour market factors is likely to be predominant given the high share of labour market incomes in disposable income.

28. Some political economy explanations suggest that societies that are ethnically or socially polarised tend to focus on redistribution between polarised factions that alternate in power; societies that are not polarised are able to reach a consensus on public goods and overall economic development (Alesina et al. 2003).

The "middle class" and income polarisation: measurement and outcomes

23. Despite the extensive debate, there is no proper definition of the middle class and associated studies do not exhibit any unified measurement framework. The literature has generally relied on various intuitive income thresholds around the middle of the distribution for measuring the size or the relative affluence of the middle class (Box 3). In a number of studies, the middle class has been identified as the middle three quintiles of the income distribution (*i.e.* ranging from the 20% to the 80% poorest households) and the associated middle-class index defined as the share of income accruing to the middle class.[29] This measure, known as Levy's index, can be calculated with the OECD database and is presented in Table 3 along with the share of income in bottom and top quintiles:

- On average across OECD countries for which data are available, the income share of the three middle quintiles reaches 53% and it varies between 44% (Mexico) and 56.5 per cent (Slovenia).

- The (mild) average increase in the income share of the three middle quintiles observed between the mid-90s and the late 2000s does not reflect a general improvement in the relative material living standards of middle-income households across OECD countries, but rather the substantial increases in middle-income shares in Turkey, Mexico and Chile. In these countries, increases in middle-income shares were overwhelmingly driven by reductions in top-quintile shares.

- At the other end of the spectrum, a number of OECD countries experienced marked reductions in the income share of the three middle quintiles: Austria, Australia, Canada, Denmark and France, along with, though to a lesser extent, Sweden, the United States and Germany; these countries were previously identified as having also experienced a marked increase in the ratio of mean to median disposable income, a signal that middle income households lost ground relative to the most affluent. Indeed, in all such cases, this outcome was accompanied by large increases in the share of income accruing to top quintile – especially in Sweden and Denmark – amid comparatively lower reductions in the share of income of the bottom quintile.

29. The data do not allow for calculating an alternative, intuitive measure of the middle class, based on the "income space'' approach (Box 3), that is defining the middle class in terms of the density function of the income distribution and looking at the proportion of the population falling within a selected range whose upper and lower cutoffs are percentages of the median income.

Box 3. Measuring the middle class: main approaches and challenges

The literature has developed various definitions and measures of the middle class (see Atkinson and Brandolini, 2012, for an in-depth survey of income and non-income based approaches). Income-based measures can be broadly classified in two categories. Following the language used by Atkinson with reference to the income distribution function, one can distinguish ''people space'' approaches and ''income space'' approaches:

- The ''people space'' approach treats the definition of middle class in terms of the cumulative income distribution and looks at the income distance of individuals located within a fixed range around the middle. For example, Levy identifies the middle as the 50th percentile and the middle class as the range between the 20th and the 80th percentiles. Levy's index is equal to the share of income received by the middle three quintiles.[1] This class of measures has been criticized for a number reasons, notably for:[2] *i*) relying on an arbitrary income range hence inevitably implying ambiguous rankings over income distributions; and *ii*) ruling out any discussion on the size of the middle class.

- The ''income space'' approach treats the definition of middle class in terms of the density function of the income distribution and looks at the proportion of the population falling within a selected range whose upper and lower cutoffs are percentages of the median income. This is the approach used by Thurow (1984) and by Blackburn and Bloom (1985). For example, Thurow chooses the middle income range of 75% to 125% the median and defines the middle class as the share of the population with incomes between that range. As for the former approach, the choice of the range is quite arbitrary, as alternative ranges lead to contradictory results on the size of the middle class.

It should be said that definitions based purely on the income dimension are limited insofar as they fail to capture other aspects highlighted in the social sciences middle class literature, such as, e.g. broader concepts of economic resources, incorporating wealth and access to credit, class and occupation – as developed in the sociological literature on the topic (Erikson and Goldthorpe, 1992) – cultural interest and activities, known as 'cultural capital' and the social networks and connections, known as "social capital" (on this broader concept, see for instance recent findings from the "Great British Class Survey", Savage et al. 2013). However, there is widespread evidence that income is a central and discriminating factor of living standards. Noteworthy, for the purpose of this study, income can be relatively easily compared across countries and over time, due to the existence of reliable data on a comparable basis, contrary to other dimensions, where measurement and other data-related limitations reduce the scope for robust empirical analysis.

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1. It can be interpreted in terms of the Lorenz curve. Recalling that for every p between 0 and 1, the Lorenz value L(p) is the share of income received by the poorest p of the population, Levy's measure is simply L(0.8)-L(0.2).

2. Foster and Wolfson (2010), Horrigan and Haugen (1988), Atkinson and Brandolini (2012).

3. For example, Foster and Wolfson demonstrate that any symmetric distribution will have the same middle class index using Levy's approach, irrespective of whether the incomes range widely or fall within one dollar of the median income. The authors demonstrate that Levy's index is simply a measure of the skewness of the income distribution.

24. While informative in its own right, any assessment derived from the share of income in the middle three quintiles is debatable as it depends on the choice of an arbitrary income range within which to classify households. This has been illustrated formally by Atkinson and Brandolini (2012), who provide strong evidence of the arbitrariness of any delimitation of the middle class by showing for instance that for some countries the variation in the share of the middle class changes sign with changes in the delimiting income cutoffs. Against this background, an alternative indicator is the Foster-Wolfson (FW) index developed recently in Foster and Wolfson (2010): contrary to traditional middle class measures, it does not depend on any arbitrary income range.

25. Intuitively, the FW index defines the middle class in terms of income polarisation with median income as the two-group divide. As a result, it is a useful indicator of the income distribution. It allows synthetically measuring and uncovering patterns in the income distribution which are distinct from those

traditionally assessed in inequality studies. This is because polarisation is conceptually distinct from inequality and can actually diverge from it. A more formal definition of the index along with some intuition of its distinguishing properties with respect to inequality requires first recalling some basic conceptual principles underlying inequality measurement:[30]

- Inequality measures are consistent with widely accepted Lorenz ordering criteria, most importantly the so-called Dalton principle of transfers. The principle states that starting from any distribution of income, any transfer of income from an individual to one richer (that is, a regressive transfer) must increase inequality, regardless of *where* – in the income distribution – the transfer takes place.

- The Gini coefficient, one of the most widely used inequality indicator, is indeed defined by Lorenz ordering criteria. The Gini coefficient is defined as the area between the Lorenz curve (which plots cumulative shares of the population, from the poorest to the richest, against the cumulative share of income that they receive) and the 45° line, taken as a ratio of the whole triangle.[31]

26. Formally, the FW index is derived from two polarisation curves which, like the Lorenz curve in inequality analysis, signal unambiguous increases in polarisation. It is defined as follows:

$$P= (T-G)*(mean/median)$$

Where mean and median refer to mean and median income, G is the Gini (income-based) coefficient and T is relative median deviation, defined as (meanU- meanL)/mean, where meanU and meanL represent, respectively, the mean income of those above the median and of those below the median. Intuitively, T captures the income distance between those above and those below the median, implying that increases in T should increase polarisation. It can be easily shown that T can be also interpreted and defined in terms of the Lorenz curve. Recalling that for every p between 0 and 1, the Lorenz value L(p) is the share of income received by the poorest p of the population, Foster and Wolfson show that T= 1-2*L(0.5), where L(0.5) is the share of income received by the poorest 50% of the population, or the share of income received by those below the median. The FW index is therefore the difference between relative median deviation and the Gini, scaled up by a measure of positive skewness. When the distribution is symmetric (implying that mean income equals median income), T is the sum of inequality and polarisation. Positive skewness in the distribution leads to a value of (mean/median) that is greater than unity and augments the measure of polarisation.

27. The index can also be measured with respect to the Gini coefficient, allowing direct comparison between inequality and polarisation. Indeed, it can be expressed as a function of “between-group” inequality and “within-group” inequality, where the two groups are income households above and below the median income (i.e the upper and lower halves of the distribution):

$$P= (Gb-Gw) *(mean/median),$$

30. See Esteban and Ray (1994, 2007) and Foster and Wolfson (2010) for formal derivations of this result as part of the axioms defining the concept of polarisation.

31. The values of the Gini coefficient range between 0, in the case of "perfect equality" (i.e. each share of the population gets the same share of income), and 1, in the case of "perfect inequality" (i.e. all income goes to the individual with the highest income).

where Gb and Gw measure respectively, inequality between the upper and lower halves of the distribution and inequality within these two groups, all measured by the Gini coefficient.[32] [33] Because in this setting the overall Gini equals the sum of Gb and Gw,[34] analysing polarisation in terms of between and within-group inequality and comparing this decomposition with overall inequality indicates how inequality and polarisation differ:

- More inequality between the upper and lower halves of the distribution, as obtained by means of a transfer of income from an individual below to an individual above the median income (that is, a regressive transfer between the upper and the lower-half of the distribution), increases both inequality and polarisation.

- On the contrary, more inequality within each half of the income distribution, as obtained by means of a pair of income transfers on each side of the median, from an individual to a richer one (that is, a pair of regressive transfers, among the upper and among the lower-half of the distribution), must raise overall inequality according to Lorenz ordering criteria, but it lowers polarisation.

28. Polarisation rises with income distance between the groups of households below and above the median income but it declines with income dispersion within the two groups. Polarisation and inequality move in opposite directions when transfers occur on the same side of median income.

Descriptive evidence on polarisation, inequality and the middle class

29. Weakly polarised countries generally feature high income shares in the middle three quintiles, which unambiguously signal relatively affluent and densely populated middle classes. This is observed in low inequality countries such as Denmark, Norway, Slovenia and Sweden (Figure 9, Panel A). The data also suggest a negative association over time between shifts in polarisation and in the share of income in the middle three quintiles (Figure 9, Panel B), with relative income gains in the middle of the distribution coincident with reduced polarisation as observed in Mexico, Chile, and Turkey.

30. The level of polarisation is highly correlated with that of overall inequality, as measured by the Gini coefficient for household disposable income, and cross-country rankings are hardly affected by the use of either indicator, with the exception of the United Kingdom, which exhibits relatively high inequalities but comparatively lower polarisation, and Slovenia, where the opposite holds. However, comparing the evolution of overall inequality to that of income polarisation delivers a different picture (Figures 10 to 12). Main patterns of the changing income distribution across OECD countries can be summarised as follows:

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32. The resulting index varies between 0 and 0.25, with 0 corresponding to an income distribution characterised by no polarisation and 0.25 an income distribution characterised by maximum polarisation (i.e. half of the population has zero income, the other half has twice the mean income). It has been scaled-up by a factor of 4 in this paper so as to simplify comparability with the Gini coefficient.

33. The between-group term is found by applying the Gini to the "smoothed" distribution in which households above and below the median receive the mean income of their respective group. The Lorenz curve of the smoothed distribution is formed by connecting the three points along the original Lorenz curve at p = 0, 0.5, and 1. The within-group term is a population weighted average of the inequality levels within the two groups.

34. Gini additivity generally not holds while it does in this case because the two groups (households above and below the median income) are non-overlapping.

- Between the mid-90s and late 2000s, OECD countries experienced what could be referred to as a form of cross-country "convergence" (Figure 12), insofar as a number of high inequality countries such as Turkey, Mexico and Chile saw notable contractions in inequality and polarisation of incomes while the opposite was observed in low inequality countries such as Sweden, Finland and Denmark. Despite these changes, it needs to be reminded that the level of income inequality remains comparatively very low in the latter cluster of countries and very high in the former. There were exceptions to this broad convergence pattern: in Israel and the United States, the relatively high starting level of inequality and polarisation increased further over the period.

- Between the former two polar groups, changes in income disparities were of lower magnitude and OECD countries broadly split in two equally-sized groups experiencing respectively increases and contractions in disposable income inequality.

- In more than four-fifth of OECD countries, changes in overall income inequality were driven by changes in inequality within the upper and lower halves of the distribution rather than between the upper and lower halves of the distribution. Recalling that polarisation is an increasing function of between-group inequality and a decreasing function of within-group inequality (where the two groups are households below and above the median income), the differential evolution of these two components explains why inequality increased more (or contracted less) than polarisation (Table 4). This pattern suggests that in most OECD countries the income distribution became less bipolar, i.e. was characterised by increasing disparities among the lower and upper-half of the distribution rather than between these two groups.

- In contrast, Japan and the United States experienced relatively large increases in income polarisation but comparatively smaller rises in inequality. This is indicative of a shrinking middle class, as has long been claimed by many in the case of the United States.

- Germany experienced relatively strong increases in both polarisation and inequality, reflecting increased income dispersion within and between the upper and lower halves of the distribution. In Australia, France and Denmark – especially prior to the crisis (Figure 10, Panels A and B), a non-negligible rise in inequality was accompanied by a mild increase in polarisation. In these countries, changes in the income distribution were driven by a marked increase in inequalities within the upper and lower halves of the distribution rather than between them (Table 4). Going further, the decomposition in Table 4 would suggest that within-group inequality increased relatively more in the upper compared to the lower-half of the income distribution, as suggested by the sharp rise in the ratio of mean to median income. This confirms the aforementioned findings that in these three countries middle-class households lost ground relative to upper incomes.

- Some countries experienced episodes of divergence between inequality and polarisation (Figures 10 and 11): for example, between the mid-nineties and 2010, Austria, Ireland and the United Kingdom recorded increases in income inequality associated with reductions in income polarisation. Again, this divergence is the result of opposing trends in inequalities within and between the groups of households below and above the median income. The United Kingdom experienced an increase in inequality within these two groups but a contraction of inequalities between them (Table 4). Taken together, these diverging trends in the income distribution signal an increase in the size of middle class and at the same time in overall inequality.

- Keeping in mind the limitations associated with such early estimates of the crisis years, there is some evidence of increased disconnection between inequality and polarisation after 2007 (Figure 10, Panels B and C). This pattern could reflect developments in the job market and in particular sharp rises in job polarisation in countries experiencing substantive employment losses

in the construction sector such as Ireland and Spain (see Box 2 and Panel C), but also the differential effects of taxes and transfers on polarisation as opposed to inequality.[35]

4. The bottom of the income distribution

31. This section focuses on the low tail of the distribution – on low incomes and poverty. In addition, developments in the upper-end of the income distribution are covered though more succinctly (see e.g. Chapter 9 in OECD, 2011b, and Atkinson et al. 2011 for a detailed analysis of the evolution of top incomes).

32. The analysis relies on the two main approaches for tracking low incomes, namely:

- "Income standards", *i.e.* summary measures of the income distribution using a single representative level of income, which can then be used in comparison of material living standards across countries and over time; the bulk of this section uses the most common income standard employed in related studies – *i.e.* the mean income of the bottom 20% of the distribution.

- "Poverty measures", i.e. using a poverty line to identify the poor and poverty measures to summarise the extent of their poverty. The analysis of poverty incidence – e.g. percentage of low-income people over the total population – is complemented with that of poverty depth – e.g. mean incomes of low-income people as percentage of the poverty threshold. While several OECD countries (such as the United States) have official measures of poverty that rely on "absolute" standards, this paper mainly relies on the customary OECD poverty line, which is based on a relative concept of poverty with a threshold set as 50% of the median income.[36]

4.1 Low-income standards

33. Cross-country differences in income levels at the bottom of the income distribution are large, both in absolute terms (Figure 13, Panel A) and compared to differences at middle incomes.[37] Average incomes in the bottom quintiles are the lowest in Mexico – one fifth of the OECD average – and the highest in Luxembourg – more than twice the OECD average. While mean income in the United States is around 1.5 times *higher* than the OECD average, income in the bottom quintile is *at par* with the OECD average and income in the bottom decile is around 20% *lower* than the OECD average. Not surprisingly, the country ranking for household income of those at the bottom of the distribution differs significantly from that based on median and mean incomes (Figure 13, Panel B).

35. In order to shed light and discriminate between these two factors, one would need to analyse inequality and polarisation before and after taxes and transfers, which is beyond the scope of this paper.

36. Also, the use of "absolute" thresholds is less advisable in this context as it poses difficult methodological issues for cross-country comparisons (Förster, 1994).

37. Real differences may be even larger than those measured here due to the misleading inclusion of "atypical'' household categories among bottom income groups. For example, in the Nordic countries, a relatively high proportion of households at the bottom of the distribution are likely to be composed of students, reflecting the relative generosity of student support in these countries compared to the rest of the OECD (where students would need to stay with their parents longer for liquidity reasons). This justifies the focus of the analysis on the first income quintile as opposed to the first income decile.

34. There are marked differences in the sources of households' disposable income between the bottom and the upper-half of the income distribution.[38] Moreover, OECD countries are heterogeneous in this respect (Table 5):

- Transfers represent the highest share of disposable income in the lower half of the income distribution, with substantive differences across OECD countries: while in Denmark the poorest 20% households rely on transfers for almost 87% of their disposable income, in Korea the share of transfers in the first income quintile is lower than 19%.

- Differences in the share of taxes and transfers across the income distribution reflect differences in the extent of progressivity and redistribution embedded in policy settings: the gap in the income share of taxes and transfers between the bottom and top quintiles is higher than 100 percentage points in Denmark and lower than 15 percentage points in Korea.

- Wages always represent a lower share of disposable income in the lower compared with the upper-half of the income distribution, particularly in Nordic countries with highly developed welfare states compared with Southern Europe and lower-income OECD countries (such as e.g. Mexico and Turkey).

- Capital income is, as expected, concentrated in the top rather than the bottom of the income distribution, but the gap in the share of capital income between top and bottom quintiles varies widely across OECD countries. The share of capital in disposable income within the top quintile has tended to increase between 1995 and 2007, consistent with previous findings where this trend was associated with increased inequality (OECD, 2011b).

- Self-employment income tends to be skewed towards the upper-half of the income distribution – markedly so in Germany – but in some countries – such as *e.g.* Canada – it is equally distributed across income groups while in others – such as Mexico, Japan and Spain – it represents a higher proportion of disposable incomes at bottom than at top quintiles, potentially reflecting the relatively higher share of low-income farmers compared to other OECD countries.

- The evolution of taxes and transfers in disposable incomes would broadly suggest a general trend of reduced progressivity: between the mid-nineties and the pre-crisis years, the (negative) weight of taxation on top quintile incomes and the (positive) weight of transfers on bottom quintile incomes decreased in the majority of OECD countries.[39] The crisis period has been characterised by an increase in the share of transfers (net of taxes) in disposable incomes, and this increase has been generally driven by rising transfers to bottom income households.

35. Over the last fifteen years, household incomes at the bottom of the distribution did not in general grow with GDP (Figure 14, Panels A and B, Figure 15): in almost all OECD countries for which data are available, GDP growth was substantially higher than households' income growth in the first quintile and, even more so, the first decile of the income distribution. Low incomes were also largely outpaced by median incomes. The divergence between low and median incomes was particularly strong in Israel, Sweden, Spain, Finland and the United States. The opposite pattern, albeit much lower in magnitude, was

38. This is in line with previous OECD studies such as e.g. OECD (2011b).

39. This interpretation may require a number of qualifications, such as: *i*) the possibility that reduced progressivity may have increased employment incentives, hence all else equal translated into higher market incomes for some people; and *ii*) the tendency for declining unemployment to mechanically reduce redistribution as being measured here.

experienced in Belgium, Italy and Portugal along with Greece prior to the crisis: a catching-up of low incomes with respect to median incomes and GDP.

36. The comparison between median and bottom income growth over the period 2007- late 2000s (keeping in mind the limitations associated with such early estimates of the crisis years) would suggest that less affluent households have been more severely hit by the crisis than households in the middle of the income distribution (Figure 14, Panel C). The majority of OECD countries experienced higher median than bottom income growth after 2007 (Figure 14, Panel C).[40] This process was especially marked in Greece and Spain, but also, though to a lesser extent, the Slovak Republic, Israel, Italy and Ireland. This could suggest that anti-crisis measures and automatic stabilisers were less effective at reducing disposable income losses at the bottom of the distribution than in the middle of the income distribution. At the same time, some countries such as Finland, Portugal and Estonia succeeded at preserving bottom incomes from the contraction in GDP.

37. The widespread drifting away of bottom incomes from middle incomes between the mid-90s and the end of the 2000s was associated with a marked increase in inequalities in the lower half of the income distribution: the vast majority of OECD countries experienced a significant reduction in the ratio of bottom to middle incomes amid diverging trends in overall income inequality (Figure 16, Panel A).[41] In fact, trends in inequality in the lower-half of the income distribution were relatively weakly reflected in the evolution of "overall" inequality compared with trends in inequality in the upper-half of the income distribution (Panels A and B of Figure 16).[42] Cross-country patterns can be summarised as follows:

- Increases in income disparities in the lower-half of the income distribution were highest in Sweden, Israel, Spain, and Finland. Finland, Israel and Sweden experienced rising inequality in both segments of the distribution, resulting in major increases in overall inequality. By contrast, in Spain, the increase in inequality the lower-half of the distribution was concomitant with a *reduction* in overall inequality, reflecting lower inequalities in the upper-half of the income distribution.

- Apart from Spain, a number of countries experienced rising inequalities in the lower-half of the income distribution despite declining overall inequality (*e.g*. New Zealand, Mexico and Turkey). Indeed, rising income inequality in the lower-half of the distribution went in parallel with declining inequality in the upper-half of the distribution.

- Reductions in disparities between bottom and middle incomes were much lower in magnitude than increases and achieved in only a limited number of OECD countries, notably Belgium, Italy, Portugal and Chile amid even lower reductions in disparities between middle and upper incomes.

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40. However, the crisis period may have been characterised by higher individual income (upwards and downwards) mobility *between* deciles: cross-sectional comparisons presented here should not be interpreted as longitudinal developments at the individual and household level.

41. For the purpose of this figure, inequality in the lower half of the income distribution is measured by the ratio of the average income in the fifth decile to that of the first quintile (equal to the average income in the two first deciles). Inequality in the upper half of the income distribution is measured by the ratio of the average income in the fifth quintile (equal to the average income in the two last deciles) to that of the fifth decile. Using the first decile instead of the first quintile, the last decile instead of the last quintile, and the median instead of the fifth decile does not affect any of the results.

42. As already mentioned before, the micro-data used here are poorly suited to track developments in top incomes, which implies to interpret these results with some caution.

4.2 Poverty

38. Inequalities in the lower-half of the income distribution translate into incidence of income poverty, where the latter is defined in relative terms (*i.e.* with respect to the median). The number of low-income people varies significantly across OECD countries. In Mexico and Israel, at least 20% of the population is below the low-income threshold of 50% of median income, compared with only 6% in the Czech Republic (Figure 17, Panel A). While the general cross-country patterns are consistent with those obtained for a poverty thresholds of 60% of median income, the poverty rate increases substantially across the two measures, by 6 percentage points on average across OECD countries. Across countries, there is a relatively strong correlation between the incidence of poverty and its depth, with countries recording the largest number of low-income people also being those where these people are the furthest from the poverty threshold. There are some exceptions though, such as Norway, exhibiting a low poverty rate and a high poverty gap, and Australia, where the opposite holds (Figure 17, Panel B).

39. Between the mid-90s and 2010, relative income poverty increased in most OECD countries, consistent with rises in inequality in the lower half of the income distribution (Figure 18, Panel A). Poverty increased the most – by more than 2 percentage points –, in countries that started at low levels, Sweden, Finland and Luxembourg. In Sweden, the poverty rate in 2010 (9%) was more than twice what it was in 1995 (4%). Poverty also increased in some middle- and high-poverty countries like Spain, Japan, Israel, Turkey and Australia. At the same time, poverty fell in some high-poverty countries, such as Chile, Portugal and Italy. As found in the previous section, GDP growth was generally not "pro-poor" within OECD countries over this period, and relative poverty increased during the growth period before the recession (Figure 18, Panel B).

40. The crisis had a limited impact on relative income poverty in its early years (Figure 18, Panel C): between 2007 and 2010, relative poverty increased by more than one point only in Greece, Spain, the Slovak Republic, Turkey and Poland while it fell by more than one point in Estonia, the United Kingdom and Portugal.[43] One word of caution is needed here. Recession episodes are often characterised by declining or stable relative income poverty measures, when income at the bottom of the distribution falls by less than at the median (see OECD, 2013c). Indeed, assessing changes in poverty based on an indicator which measures poverty against a benchmark "anchored" to half the median incomes observed in 2005 suggests that recent increases in income poverty are much higher than implied by "relative" income poverty, for instance in the case of Ireland and Spain (see OECD, 2013c).

41. The evolution of poverty rates did not follow that of overall income inequality and some countries experienced diverging trends, such as the Czech Republic, Spain, New Zealand, the Netherlands and Turkey, where declines in the Gini coefficient went in parallel with increases in the prevalence of poverty, as well as Ireland and the United Kingdom, where the opposite occurred (Figure 19, Panel A).[44] Also, the evolution of poverty incidence was not always in line with that of its depth (Figure 19, Panel B).[45] A number of countries experienced what could be tentatively qualified as a trade-off between the two, notably: *i*) Sweden, experiencing the strongest increase in the poverty rate across OECD countries

43. This picture is consistent with the previous comparison between low and median income growth over the crisis period, insofar as the latter group of countries experienced higher gains (or lower losses) in the bottom income quintile than in the median income while the opposite occurred in the former countries.

44. The correlation between changes in the poverty rate and in polarisation is even lower than it is between changes in the poverty rate and in the Gini coefficient.

45. The poverty gap is calculated as the distance between the poverty threshold and the mean income of the poor, expressed as a percentage of the poverty threshold.

in concomitance with a reduction of the poverty gap, and; *ii*) Ireland and Portugal exhibiting the opposite pattern, that is a reduction in the prevalence of poverty but higher poverty gaps.

5. Conclusion

42. This paper has used a number of metrics to explore how the income of households, measured at different points of the distribution, has evolved over time and across countries in relation to GDP. The patterns described do not easily lead to straightforward conclusions, reflecting the high level of heterogeneity both within and across countries. As a way to summarise the material presented in the analysis, the conclusion presents a tentative "dashboard'' of countries' relative developments.

43. The summary dashboard is based on normalised values of selected indicators, focusing on their dynamics. The normalisation procedure allows for greater comparability across countries and indicators and it is performed as follows: for each country and each indicator, the change over the period from the mid-90s to late 2000s is normalised by the minimum and maximum values of the indicator, as observed in the sample of countries for which the data are available.[46] The resulting normalised indicators vary between 0 and 1, where higher values signal more desirable – welfare-enhancing – outcomes in terms of growth and the income distribution, *i.e.* stronger growth in GDP or in household incomes on the one hand, declines in income inequality or in relative poverty on the other (Table 6).

44. The dashboard provides a standardised cross-country comparison of different dimensions of material living standards and inequality. At the same time, the normalisation procedure allows for a synthetic assessment of the association between these different dimensions. Table 6 (Panel A) presents the outcome of this tentative exercise for some of the areas and indicators discussed in the paper. This analysis leads to the following conclusions:

- Countries' relative positions are broadly coincident when they are compared on the basis of the evolution of GDP, mean, or median incomes. This is confirmed by the relatively high level of correlation between these normalised indicators (Table 6, Panel B). A similar though weaker conclusion holds when the evolution of material living standards is assessed for households at the bottom of the income distribution.

- In contrast, countries' relative positions differ not only depending on whether they are compared on the basis of the evolution of GDP and household incomes as opposed to that of inequality – a non-novel finding – but also with respect to inequality *within* the distribution. On the one hand, countries' relative developments in the ratio of mean to median incomes follow closely those of inequality in the upper-half of the distribution and are strongly reflected in the evolution of overall inequality, as measured by the Gini coefficient (Panel B). This finding is not specific to the period covered by this study but rather reflects the fact that the Gini coefficient is highly sensitive to the middle of the distribution and relatively insensitive to its "tails". On the other hand, normalised bottom-sensitive inequality indicators depict a different story. While there is a strong correlation between the evolution of relative poverty and that of inequality in the lower-half of the income distribution, these two measures are almost unrelated with developments in the upper-half of the distribution and hardly reflected in the evolution of overall inequality (Table 6).

45. Building on these broad patterns, the dashboard is relied upon for tentatively identifying country groups, where the latter are defined by similar relative developments in the area of material living

46. The change is either the average annual growth rate (for GDP and household income indicators) or the cumulative change in percentage points or index-based points (for inequality indicators).

standards and inequality. Reflecting the findings reported above, the analysis is first narrowed from nine to four dimensions: GDP per capita, median income, mean over median income ratio and inequality in the lower-half of the income distribution. Figure 20 presents country-specific profiles which summarise by means of diamonds the relative outcome of each country over these four dimensions, where again higher values signal welfare-enhancing outcomes in terms of growth and inequality. Relative outcomes in terms of these four dimensions are then assessed against each other by-means of bivariate comparisons, allowing clustering countries sharing similar co-movement between growth and inequality. For each bivariate comparison, the groups are simply identified by specifying common cut-off points in associated indicators (i.e. 0.25, 0.5, and 0.75). This analysis is done for the following "pairs": GDP per capita against median income, GDP per capita against mean over median income ratio and mean over median income ratio against inequality in the lower-half of the income distribution (Figure 21). Main patterns can be summarised as follows:

- Most countries cluster along or close to the diagonal of the matrix plotting GDP per capita versus median income (Panel A). While this again reflects of the strong co-movement between the two aggregates, countries' experiences are relatively heterogeneous around this trend, making it difficult to properly define clusters on the basis of common developments. Japan's unfavourable position stands out – reflecting concomitant declines in GDP and real incomes. Among the group of countries that fared comparatively better in terms of median incomes than in terms of GDP, one can find commodity-exporters such as Australia, Canada, New-Zealand and Norway, in line with the results discussed in this paper which pointed to favourable terms-of trade effects.
- By contrast, when countries are compared on the basis of the joint evolution of GDP and inequality (Panel B) on the one hand, and of different measures of inequality on the other (Panel C), most are to be found off the diagonals of the associated matrixes – confirming the weak co-movement between growth and inequality as well as between different aspects of inequality. While the analysis broadly illustrates the earlier finding of cross-country convergence in inequality – as can be seen by comparing the position of Chile, Mexico and Turkey with that of Denmark, Finland and Sweden – it also signals a high degree of heterogeneity. As highlighted in the paper, a few relatively unequal countries became even more unequal, in particular Israel and, though to a less extent, the United States. But again, countries' experiences were diverse: Spain's isolated position in Panel C reflects inequitable dynamics in the lower-half of the income distribution only while inequality declined overall, reflecting favourable dynamics in the upper-half of the distribution (Figure 16).

TABLES AND FIGURES

Table 1. Road map

System of National Accounts

Gross domestic product

per capita

Total final consumption

of which:

Household final consumption expenditure,

Final consumption of NPISHs,

General government final consumption expenditure

+

Gross capital formation

of which:

Gross fixed capital formation,

Changes in inventories

+

External balance of goods and services

of which:

Exports,

Imports

Note: no information on distributional aspects available; per capita concept; reference population refers to the resident population as derived from national censuses.

Net national income

per capita

Gross domestic product

+

Net receipts of wages, salaries and property income from abroad

-

Depreciation of fixed capital assets through wear and obsolence

Note: no information on distributional aspects available; per capita concept; reference population refers to the resident population as derived from national censuses.

Difficulties with measuring international income flows and capital depreciation.

Household adjusted disposable income

per capita

= Household final consumption expenditure + savings

Or

= Wages, salaries

+ Mixed income

+ Net property income

+ Net current transfers, social benefits

- Taxes on income, wealth, social security contributions

+ Social benefits in kind (such as education and health...)

Note: no information on distributional aspects available; per capita concept; reference population refers to the resident population as derived from national censuses.

Net measure exludes consumption of fixed capital, but there can be valuation differences across countries.

National household income surveys

Household disposable income

equivalised (per consumption unit)

(adjusted for economies of scale in households, i.e. sharing of income and resources between members of the household)

=

Wages, salaries of a household members

+

Capital and private transfers

+

Self-employment income

+

Social security and public transfers

-

Taxes and social security contributions

Note: Reference population is private households (i..e. excluding persons living in institutions); income concept is cash-based, does not take into account in-kind social benefits, FISIM, income from imputed rents and social security contributions paid by employer.

"Middle" of the income distribution and polarization

- **Median**: income level which divides the income distribution into two groups of equal size half having income above that amount and half having income below that amount).

- **Decile, quintiles**: the distribution is sliced in parts of equal size (quintiles, deciles) and Income standards can be measured as average incomes in each income group.

- **Middle class**:

Standard range-dependent measures:

1. People-space: i.e share of income received by a population located within a fixed range around the middle such as e.g the range between the second and fourth quintile.

2. Income space: i.e proportion of population falling within a specific income range specified by a percentage of the median income (*can not be calculated based on the data available).*

Range free measure

3. Polarization index: hollowing out of the middle income distribution and concentration of income at the extremes. It can be expressed as a function of "between-group" inequality minus "within-group", where the two groups are households above and below the median income.

Inequality and poverty

- **Overall inequality**: Measured by the Gini coefficient.

- **Between-group / Within-group inequality**: Measured by the Gini coefficient where the two groups are those above and below the median.

- **Inequality in the upper half of the income distribution**: Measured by income ratio of top quintile to fifth decile.

- **Inequality in the lower half of the income distribution**: Measured by income ratio of fifth decile to bottom quintile.

- **Relative poverty** : Share of individuals with equivalised disposable income less than 50% of the median for the entire population.

- **Poverty gap**: Distance between the poverty threshold and the mean income of the poor, expressed as a percentage of the poverty threshold.

Table 2. Components of household gross adjusted disposable income

Percentage

	Compensation of employees	Operating surplus and mixed income, gross	Property income	Taxes, social contributions, social benefits and current transfers	Social transfers in kind
AUT					
1995	68.9	17.5	7.3	-8.4	14.8
2007	65.4	20.9	11.3	-12.0	14.4
2010	66.7	20.4	8.1	-10.3	15.2
BEL					
1995	65.2	18.9	16.8	-17.0	16.1
2007	69.4	18.2	11.6	-18.0	18.8
2010	68.4	16.6	11.1	-16.2	20.0
CZE					
1995	59.2	30.6	6.4	-11.3	15.0
2007	66.1	25.2	5.7	-12.9	15.9
2010	61.9	24.7	4.8	-7.3	16.0
DNK					
1995	75.8	17.2	3.0	-20.6	24.7
2007	85.0	12.6	2.1	-28.2	28.6
2010	79.1	11.0	2.4	-22.5	29.9
FIN					
1995	68.2	16.6	4.7	-9.1	19.6
2007	69.6	17.0	6.3	-13.7	20.7
2010	65.7	15.8	5.2	-7.7	21.0
FRA					
1995	63.9	18.5	8.5	-8.6	17.7
2007	64.1	18.2	8.1	-8.7	18.4
2010	63.4	16.7	7.5	-6.6	19.0
DEU					
1995	68.1	18.5	13.0	-14.4	14.7
2007	63.0	17.3	18.1	-13.1	14.7
2010	63.3	16.1	17.1	-12.1	15.5
EST					
1995	68.6	14.4	0.9	-4.6	20.7
2007	78.8	15.7	4.2	-13.6	14.9
2010	72.7	13.1	2.7	-5.7	17.2
GRC					
1995	na	na	na	na	na
2007	42.4	36.7	12.3	0.0	8.6
2010	45.3	36.1	5.8	3.4	9.4
HUN					
1995	59.0	26.1	6.9	-7.7	15.6
2007	68.1	19.9	5.1	-9.7	16.6
2010	66.7	19.3	4.1	-6.6	16.5
IRL					
1995	na	na	na	na	na
2007	69.4	21.6	1.0	-10.3	18.3
2010	64.8	16.2	1.8	-1.9	19.1
ITA					
1995	49.0	26.4	23.9	-11.3	12.0
2007	50.6	26.5	18.7	-10.1	14.3
2010	52.0	26.7	14.8	-8.7	15.2
JPN					
1995	na	na	na	na	na
2007	68.5	16.4	6.7	-5.5	13.9
2010	66.0	15.9	5.7	-2.3	14.8
LUX					
1995	na	na	na	na	na
2007	62.9	19.5	2.9	-5.8	20.4
2010	na	na	na	na	na
MEX					
1995	na	na	na	na	na
2007	36.9	33.6	22.0	0.6	6.8
2010	37.0	34.1	22.0	-0.6	7.4

Note: The data refer to the components of gross adjusted household disposable income per capita. Components do not exactly sum to household gross adjusted disposable income due to statistical discrepancies.

Source: OECD calculations based on OECD (2011), How's Life?: Measuring well-being, OECD Publishing.

Table 2. Components of household gross adjusted disposable income *(cont.)*

Percentage

	Compensation of employees	Operating surplus and mixed income, gross	Property income	Taxes, social contributions, social benefits and current transfers	Social transfers in kind
NLD					
1995	74.8	17.2	13.6	-24.0	18.3
2007	75.5	18.0	8.9	-25.7	23.3
2010	77.1	14.3	6.1	-23.5	26.1
NOR					
1995	69.3	18.1	2.0	-7.9	18.4
2007	75.5	13.3	1.4	-12.9	22.8
2010	72.7	12.2	2.6	-10.8	23.4
POL					
1995	47.1	34.2	7.5	-2.4	13.5
2007	50.2	35.2	4.5	-3.6	13.7
2010	50.1	32.5	4.2	-1.3	14.5
PRT					
1995	57.7	22.3	10.5	-2.2	11.8
2007	60.4	17.8	8.3	-0.2	13.7
2010	58.7	17.2	7.7	2.3	14.2
SVK					
1995	66.1	28.1	7.7	-8.9	7.0
2007	58.1	35.4	1.8	-7.3	12.0
2010	54.3	34.2	2.6	-3.9	12.7
SVN					
1995	70.9	21.8	1.7	-8.4	13.9
2007	69.2	22.2	1.5	-7.3	14.4
2010	69.0	19.7	0.9	-5.5	15.8
ESP					
1995	na	na	na	na	na
2007	64.3	28.8	4.7	-12.2	14.4
2010	61.7	24.2	4.1	-5.8	15.8
SWE					
1995	73.6	10.9	4.6	-14.9	25.8
2007	80.0	10.2	4.4	-22.3	27.8
2010	75.3	8.8	5.0	-16.3	27.3
CHE					
1995	80.8	18.8	14.1	-22.3	8.5
2007	80.5	15.0	15.4	-19.7	8.8
2010	80.6	14.5	14.7	-18.7	8.9
GBR					
1995	66.0	13.5	13.0	-6.6	14.1
2007	71.4	15.2	8.9	-12.8	17.2
2010	67.2	13.1	9.5	-7.7	17.9
USA					
1995	na	na	na	na	na
2007	68.9	22.4	8.8	-7.9	7.8
2010	64.9	20.3	8.1	-0.9	7.6
RUS					
1995	na	na	na	na	na
2007	72.2	13.9	5.7	-4.6	12.7
2010	69.1	12.5	5.5	0.7	12.3
OECD average					
1995	65.9	20.5	8.8	-11.1	15.9
2007	65.9	21.3	7.9	-11.3	16.2
2010	64.2	19.7	7.1	-7.9	16.8

Note: The data refer to the components of gross adjusted household disposable income per capita. Components do not exactly sum to household gross adjusted disposable income due to statistical discrepancies.

Source: OECD calculations based on OECD (2011), How's Life?: Measuring well-being, OECD Publishing.

Table 3. Defining the middle class in "people's space": income shares of the middle three quintiles

Income shares by quintiles, percentage[1]

	Bottom quintile			Middle three quintiles			Top quintile		
	Mid 90s	2007	Late 2000s	Mid 90s	2007	Late 2000s	Mid 90s	2007	Late 2000s
AUS	7.7	7.1	7.1	54.2	52.2	52.4	38.1	40.7	40.4
AUT	9.7	9.4	9.4	56.5	54.7	54.3	33.8	35.9	36.3
BEL	7.9	9.0	9.0	55.7	55.3	56.0	36.5	35.7	35.0
CAN	8.2	7.6	7.5	54.7	52.9	53.0	37.1	39.5	39.5
CZE	10.2	10.0	10.0	53.9	54.4	54.4	35.9	35.6	35.6
DNK	10.6	9.8	9.7	57.4	55.9	55.6	32.0	34.2	34.7
FIN	10.9	9.3	9.5	56.4	55.5	55.5	32.7	35.1	35.0
FRA	9.1	8.9	8.6	53.9	52.5	52.2	37.0	38.6	39.2
DEU	9.2	8.8	8.7	54.8	53.6	53.8	36.0	37.7	37.5
GRC	7.0	8.1	7.2	52.5	52.9	52.6	40.5	39.0	40.3
HUN	8.8	9.3	9.1	52.9	54.1	54.3	38.3	36.6	36.7
ISL	na	9.4	9.5	na	53.2	54.2	na	37.4	36.3
IRL	8.1	8.4	7.6	51.7	53.4	51.6	40.2	38.2	40.8
ITA	6.7	7.4	7.4	54.0	53.6	54.0	39.3	38.9	38.6
JPN	6.9	6.6	6.5	53.7	53.8	53.5	39.4	39.6	40.0
KOR	na	6.8	6.6	na	55.2	55.5	na	38.0	37.9
LUX	9.7	9.3	9.1	54.8	54.0	54.3	35.5	36.8	36.6
MEX	3.7	4.0	4.0	39.5	43.8	44.5	56.8	52.2	51.5
NLD	8.8	8.8	8.8	53.0	52.6	53.4	38.3	38.6	37.8
NZL	7.7	7.7	7.8	51.1	51.4	52.5	41.2	40.9	39.7
NOR	9.6	9.3	9.3	56.4	56.3	56.4	34.0	34.4	34.3
POL	na	7.9	8.0	na	52.5	53.6	na	39.5	38.4
PRT	6.7	6.9	7.3	50.3	49.6	51.0	43.0	43.5	41.6
SVK	na	9.7	9.2	na	55.9	55.4	na	34.4	35.4
ESP	6.8	7.3	6.1	51.9	54.7	54.3	41.3	38.0	39.5
SWE	11.0	9.1	8.8	56.8	56.0	55.6	32.2	35.0	35.6
CHE	na	8.4	8.3	na	53.2	53.2	na	36.1	38.6
TUR	4.9	5.8	5.6	40.1	47.1	47.1	55.0	47.1	47.2
GBR	7.4	7.2	7.4	51.3	51.3	51.0	41.2	41.4	41.6
USA	6.1	5.6	5.5	51.8	51.0	51.0	42.1	43.4	43.5
CHL	3.8	4.2	4.3	38.4	40.1	40.8	57.9	55.7	54.9
EST	na	7.5	7.6	na	53.7	53.4	na	38.8	39.0
ISR	7.2	5.6	5.5	52.5	51.3	51.9	40.3	43.0	42.6
SVN	na	9.6	9.4	na	56.7	56.5	na	33.8	34.1
OECD average	7.9	7.9	7.8	52.2	52.8	52.9	39.8	39.2	39.3

Note: The income distribution is divided into five equally-sized groups referred to as quintiles, where households are ranked according to equivalised disposable incomes. The table presents the level and evolution of income shares in the middle three income quintiles (ranging from the 20% to the 80% poorest households) along with income shares of top (the 20% richest households) and bottom (the 20% poorest households) quintiles.

1. Mid 90s refer to 1995 except for Austria for which the data refer to 1993, for Czech Republic, France, Luxembourg and Chile for which the data refer to 1996, for Greece, Ireland, Mexico, Turkey and the United Kingdom for which the data refer to 1994. Late 2000s refer to 2009 except for Australia, Canada, Denmark, France, Germany, Israel, Mexico, the Netherlands, Norway, Sweden, the United Kingdom and the United States for which the last available observation is 2010, for Korea for which it is 2011 and for Switzerland for which it is 2008.

Source: OECD Income Distribution Database.

Table 4. Interpreting changes in income polarisation as changes in "between" and "within" inequality of the two halves of the income distribution

Changes over the period mid 90s - late 2000s[1]

	Polarization	Ratio of mean to median income	Gini coefficient	'Between-group" Gini coefficient	'Within-group" Gini coefficient
AUS	2.4	3.6	7.7	5.2	13.2
AUT	-1.4	4.8	11.7	6.7	23.1
BEL	-3.2	-0.2	-8.9	-7.2	-12.5
CAN	8.0	3.1	10.3	8.9	13.4
CZE	-4.1	-1.3	-1.1	-1.6	-0.2
DNK	12.8	3.5	16.0	14.1	20.0
FIN	15.9	1.1	15.7	15.4	16.2
FRA	1.1	3.3	9.0	6.1	14.8
DEU	5.6	0.6	7.2	6.6	8.3
GRC	-4.6	-0.4	-1.3	-2.1	0.3
HUN	-10.5	-1.9	-7.6	-7.9	-7.1
IRL	-4.5	1.1	2.1	0.1	6.6
ITA	-5.8	0.0	-4.3	-4.7	-3.4
JPN	10.4	1.0	3.7	5.3	0.5
LUX	7.1	0.9	6.5	6.4	6.7
MEX	-9.0	-12.4	-10.7	-7.5	-16.5
NLD	-3.5	-0.8	-3.0	-2.9	-3.1
NZL	-12.4	-3.3	-5.5	-6.5	-3.5
NOR	0.8	0.5	2.3	1.8	3.4
PRT	-4.7	-1.0	-5.8	-5.3	-6.9
ESP	-3.0	-8.0	-2.9	-0.8	-7.4
SWE	25.0	1.6	24.2	24.0	24.6
TUR	-13.7	-17.7	-17.6	-12.7	-26.3
GBR	-7.8	0.2	1.2	-1.1	6.0
USA	8.8	3.0	5.3	5.4	5.0
CHL	-12.6	-8.1	-6.5	-6.1	-7.2
ISR	18.4	0.3	10.7	12.7	6.3

Note: The Foster and Wolfson polarisation index can be expressed as a function of “between-group” inequality minus “within-group” inequality as measured by the Gini coefficient (where the two groups are families above and below the median): P= (Gb-Gw) *(mean/median) , where Gb and Gw measure respectively, inequality between the upper and lower halves of the distribution and inequality within the two subgroups, all measured by the Gini coefficient (see text for details). All indexes are defined on a logarithmic scale and multiplied by 100.

1. Mid 90s refer to 1995 except for Austria for which the data refer to 1993, for Czech Republic, France, Luxembourg and Chile for which the data refer to 1996, for Greece, Ireland, Mexico, Turkey and the United Kingdom for which the data refer to 1994. Late 2000s refer to 2009 except for Australia, Canada, Denmark, France, Germany, Israel, Mexico, the Netherlands, Norway, Sweden, the United Kingdom and the United States for which the last available observation is 2010, for Korea for which it is 2011.

Source: OECD Income Distribution Database.

Table 5. Income components at different points of the distribution

Percentage

		Bottom quintile					Top quintile					Fifth decile					Mean income				
		Wage and salary income	Capital and private transfers	Self-employment income	Social security transfers	Taxes and social security contributions paid	Wage and salary income	Capital and private transfers	Self-employment income	Social security transfers	Taxes and social security contributions paid	Wage and salary income	Capital and private transfers	Self-employment income	Social security transfers	Taxes and social security contributions paid	Wage and salary income	Capital and private transfers	Self-employment income	Social security transfers	Taxes and social security contributions paid
AUS																					
	1995	14.5	7.1	4.5	76.1	-2.1	111.9	8.5	12.7	2.4	-35.5	85.1	10.2	8.8	14.5	-18.5	92.0	7.8	10.0	14.9	-24.8
	2008	18.7	9.4	5.9	67.0	-1.0	104.7	16.8	7.9	0.9	-30.2	79.4	11.3	9.2	13.4	-13.4	89.8	12.5	7.4	11.0	-20.6
	2010	16.6	8.7	4.1	71.6	-1.0	100.8	15.8	8.3	1.0	-25.8	82.3	9.1	6.7	14.5	-12.7	87.8	11.5	6.8	12.0	-18.1
AUT																					
	1995	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	2007	46.6	3.3	9.0	62.9	-21.9	97.4	7.2	15.7	24.6	-44.9	75.0	2.4	11.7	43.1	-32.2	85.1	4.7	12.5	35.6	-37.6
	2009	43.7	3.2	8.7	64.5	-20.1	98.0	7.0	20.4	21.4	-46.7	77.1	2.6	9.1	42.1	-31.0	83.7	4.3	14.2	35.1	-37.4
BEL																					
	1995	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	59.1	6.3	6.5	28.1	na
	2007	na	na	na	na	na	100.4	8.0	20.5	11.9	-40.8	82.4	3.4	10.0	32.8	-28.6	na	5.1	12.7	26.9	-34.2
	2010	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
CAN																					
	1995	41.4	6.7	7.2	52.6	-7.9	100.1	18.4	14.5	6.6	-39.6	86.4	10.8	7.4	21.0	-25.5	89.2	13.6	9.9	17.4	-30.0
	2007	46.6	8.1	9.5	45.4	-9.6	100.8	18.2	11.5	4.0	-34.5	82.7	13.7	6.0	17.5	-20.0	88.6	15.6	8.2	13.3	-25.7
	2010	39.6	7.6	10.1	50.6	-7.8	99.6	18.3	10.7	4.7	-33.3	81.3	13.5	5.3	18.4	-18.5	86.4	14.9	8.1	14.8	-24.3
CZE																					
	1996	37.5	2.0	5.5	61.4	-6.4	89.9	5.2	27.7	5.4	-28.3	81.5	1.5	7.8	26.2	-17.0	76.9	2.7	14.1	19.9	-19.5
	2002	35.9	3.2	7.1	59.8	-6.0	87.2	3.3	31.7	6.0	-28.2	66.5	1.3	10.7	35.5	-14.0	70.4	2.1	17.4	22.5	-18.4
	2010	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
DNK																					
	1995	24.4	8.5	4.0	97.5	-34.4	133.5	8.9	13.6	8.8	-64.8	102.3	7.7	5.9	33.1	-49.0	105.7	7.9	8.4	31.3	-53.3
	2007	33.3	9.4	3.4	86.1	-32.1	128.3	18.8	13.8	4.4	-65.2	110.7	9.5	5.2	21.5	-47.0	109.9	12.4	8.0	22.5	-52.8
	2010	30.1	8.9	3.0	86.9	-28.9	128.1	12.8	12.4	4.7	-58.0	100.8	10.6	4.4	26.2	-41.9	105.2	10.5	7.1	24.3	-47.1
EST																					
	1995	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	2007	35.8	1.7	3.5	66.0	-7.0	114.5	2.5	1.8	6.6	-25.4	95.1	1.0	0.5	20.9	-17.6	97.3	1.7	1.5	18.6	-19.9
	2009	37.0	2.1	4.3	64.1	-7.5	107.8	2.6	1.3	11.8	-23.5	77.4	1.4	1.8	33.4	-14.0	87.4	1.9	1.6	25.3	-17.8
FIN																					
	1995	23.1	3.3	6.5	83.8	-16.8	103.8	10.8	17.7	21.8	-54.0	77.3	2.8	6.4	47.3	-33.7	82.1	5.8	11.0	41.2	-40.0
	2008	27.4	4.0	3.5	79.0	-14.0	104.6	13.4	12.0	13.1	-43.1	82.5	3.2	6.4	35.3	-27.4	88.1	7.1	8.2	29.3	-32.5
	2009	28.3	3.9	3.5	78.0	-13.7	103.3	13.3	9.9	14.4	-40.9	77.7	2.9	5.4	39.1	-25.1	85.3	6.9	7.1	31.7	-30.7
FRA																					
	1996	36.9	4.4	5.5	56.3	-3.1	70.1	13.2	13.7	20.4	-17.5	63.1	6.3	4.0	32.5	-5.9	64.5	8.9	8.0	29.2	-10.6
	2008	40.4	5.3	2.9	55.4	-4.0	66.9	21.5	13.5	19.7	-21.5	68.9	6.0	2.8	32.1	-9.7	66.6	12.4	7.1	28.3	-14.4
	2010	36.4	4.5	3.5	59.7	-4.1	69.0	21.0	11.7	20.4	-22.2	68.0	5.6	3.3	33.7	-10.6	66.5	11.9	6.5	30.1	-15.1
DEU																					
	1995	54.2	5.3	1.8	54.2	-15.4	105.1	11.5	19.5	12.5	-48.6	92.8	3.6	4.5	31.1	-32.0	96.6	7.3	9.9	24.3	-38.0
	2004	37.4	5.8	1.8	64.4	-9.4	90.6	14.9	23.2	14.3	-43.1	90.9	3.8	2.4	32.0	-29.1	85.5	8.8	11.4	28.0	-33.6
	2010	33.5	5.9	3.9	67.5	-10.7	73.2	13.3	46.6	13.4	-46.4	89.1	5.4	5.2	30.7	-30.3	77.1	8.5	23.5	26.7	-35.8
GRC																					
	1994	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	42.6	9.3	28.7	19.4	na
	2008	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	45.8	7.2	23.1	23.9	na
	2010	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
HUN																					
	1995	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	47.1	2.8	16.2	33.9	na
	2007	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	49.5	5.0	7.5	38.0	na
	2009	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	47.0	3.8	7.6	41.6	na
ISL																					
	1995	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	2007	69.1	8.6	7.2	41.7	-26.5	107.4	22.9	3.2	7.4	-40.9	107.4	6.0	5.8	17.6	-36.8	104.5	12.6	4.4	15.0	-37.8
	2009	64.1	9.7	6.4	45.9	-26.1	98.4	23.5	3.1	16.5	-41.5	94.9	8.5	5.6	27.2	-36.1	95.7	13.6	3.6	23.0	-37.4
IRL																					
	1994	11.2	3.1	9.7	78.7	-2.7	91.5	5.0	27.4	4.9	-28.8	62.0	6.4	12.3	33.3	-13.9	73.1	4.2	18.1	20.8	-20.1
	2007	19.3	2.7	9.1	71.7	-2.7	89.9	6.7	21.3	11.8	-29.8	67.5	2.8	12.1	28.8	-11.2	73.2	4.3	14.8	26.5	-18.7
	2010	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
ISR																					
	1995	36.2	4.3	6.4	57.7	-4.6	102.2	10.8	27.3	5.2	-45.5	76.4	6.0	14.6	18.7	-15.6	86.8	8.1	18.8	14.9	-28.6
	2008	40.2	6.0	7.1	53.6	-6.9	98.2	14.3	17.3	4.4	-34.3	73.4	9.0	12.1	16.0	-10.6	85.1	11.2	13.6	12.1	-22.0
	2010	42.8	4.6	7.2	52.3	-6.9	90.6	14.9	20.2	5.2	-31.0	72.5	8.9	11.5	16.9	-9.7	80.9	11.2	15.2	12.7	-20.1
ITA																					
	1995	32.6	8.3	41.7	37.5	-20.2	68.7	9.9	32.8	25.7	-37.1	53.7	6.7	27.3	39.7	-27.3	64.2	9.3	28.3	29.7	-31.5
	2008	47.2	4.3	22.1	43.7	-17.4	65.8	6.8	41.0	28.8	-42.4	65.8	3.4	19.5	38.1	-26.7	66.2	5.1	28.1	33.5	-33.0
	2010	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
JPN																					
	1995	58.1	6.5	19.6	31.1	-15.4	95.2	7.7	15.9	5.9	-24.7	91.7	2.4	9.0	12.6	-15.7	91.0	5.0	12.3	11.4	-19.8
	2006	44.7	6.1	17.2	51.6	-19.5	95.3	8.2	12.8	9.3	-25.6	77.5	3.4	7.6	31.0	-19.6	84.5	5.7	10.9	21.2	-22.3
	2009	46.5	9.1	11.3	50.5	-17.5	99.2	11.1	7.1	10.1	-27.6	70.9	5.1	4.8	37.0	-17.8	85.1	7.8	5.9	23.6	-22.4

Note: The data refer to components of household disposable income at different points of distribution: the poorest and richest 20% of households (bottom and top quintiles) and households with incomes just below the median, i.e. ranging from the poorest 40% to the poorest 50% (fifth decile). The figure also displays income components for mean income computed over the entire population of households.

Source: OECD Income Distribution Database.

Table 5. Income components at different points of the distribution *(cont)*

Percentage

		Bottom quintile					Top quintile					Fifth decile					Mean income				
		Wage and salary income	Capital and private transfers	Self-employment income	Social security transfers	Taxes and social security contributions paid	Wage and salary income	Capital and private transfers	Self-employment income	Social security transfers	Taxes and social security contributions paid	Wage and salary income	Capital and private transfers	Self-employment income	Social security transfers	Taxes and social security contributions paid	Wage and salary income	Capital and private transfers	Self-employment income	Social security transfers	Taxes and social security contributions paid
KOR																					
	1995	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	2007	44.7	24.0	24.8	13.0	-6.5	77.5	7.0	22.8	2.5	-9.9	67.0	8.5	26.9	4.1	-6.5	70.3	8.6	25.2	4.0	-8.2
	2011	48.5	18.8	21.5	18.9	-7.7	76.2	6.2	24.7	3.4	-10.5	69.5	5.8	28.5	4.5	-8.3	72.1	7.1	25.0	5.0	-9.2
LUX																					
	1996	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	64.3	4.2	5.3	26.1	na
	2007	69.8	2.4	2.4	45.1	-19.7	na	na	na	na	na	77.2	4.2	3.3	36.8	-21.6	na	5.0	6.1	28.5	-27.9
	2010	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
MEX																					
	1994	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	67.2	24.5	4.8	3.5	na
	2008	51.0	10.0	19.4	19.6	0.0	67.9	5.6	18.6	7.9	0.0	74.1	6.4	12.5	7.1	0.0	70.2	6.0	16.1	7.8	0.0
	2010	49.8	9.9	17.1	23.2	0.0	75.1	5.8	10.1	9.1	0.0	72.2	6.7	12.6	8.4	0.0	73.0	6.3	11.6	9.1	0.0
NLD																					
	1995	36.4	4.7	4.2	84.9	-30.2	97.8	19.4	24.1	7.6	-49.0	98.1	12.9	5.5	23.7	-40.2	92.4	15.5	13.0	22.4	-43.3
	2007	51.9	7.9	2.8	62.6	-25.2	98.5	26.1	22.7	5.5	-52.8	101.0	14.6	4.5	19.6	-39.7	96.2	18.6	12.1	17.5	-44.3
	2010	51.6	8.1	4.1	65.2	-29.0	103.2	20.1	23.5	5.9	-52.7	99.5	15.5	4.9	22.3	-42.2	97.0	16.8	12.4	19.3	-45.5
NZL																					
	1995	24.7	7.9	2.2	68.2	-3.0	98.8	14.2	22.1	1.9	-37.0	85.6	11.2	5.2	24.8	-26.9	88.3	11.9	13.7	15.7	-29.6
	2007	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	2010	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
NOR																					
	1995	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	11.0	11.7	22.5	-33.7
	2007	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	2009	42.8	9.9	4.1	62.6	-19.4	108.4	14.2	11.8	10.6	-45.1	85.4	8.1	4.6	31.1	-29.2	90.8	10.3	7.3	26.1	-34.5
POL																					
	1995	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	2007	53.8	2.4	16.8	54.6	-27.6	102.9	1.7	15.1	15.2	-34.9	73.3	1.6	12.2	41.6	-28.8	87.1	1.6	13.5	29.8	-31.9
	2010	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
PRT																					
	1995	30.3	3.8	17.8	54.1	-5.9	79.6	8.4	18.4	15.5	-21.8	63.7	4.8	18.2	24.2	-10.8	70.4	6.2	18.3	20.9	-15.8
	2007	45.6	2.4	17.7	49.4	-15.1	na	na	na	na	na	79.4	2.3	7.1	28.2	-16.9	na	2.7	15.2	26.4	-27.1
	2010	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
SVK																					
	1995	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	2007	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	0.8	10.3	24.2	-17.6
	2010	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
SVN																					
	1995	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	2007	47.9	1.4	7.5	57.0	-13.8	114.0	2.9	10.6	16.6	-44.1	90.8	1.3	4.8	28.2	-25.1	94.4	1.8	7.6	26.8	-31.0
	2010	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
ESP																					
	1995	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	58.7	5.6	12.1	23.6	na
	2007	48.0	2.9	16.8	44.8	-12.4	97.2	4.2	8.9	12.5	-22.9	73.8	1.9	11.1	27.6	-14.3	84.3	3.0	9.8	20.9	-18.1
	2010	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
SWE																					
	1995	32.6	6.8	4.4	80.9	-24.7	117.1	15.6	2.8	17.5	-53.0	85.9	6.3	2.4	43.4	-38.1	90.6	10.0	2.9	38.4	-42.0
	2008	31.2	6.8	3.1	81.6	-22.7	108.9	20.4	4.2	9.7	-43.1	90.3	7.3	3.0	30.4	-31.1	93.9	12.6	3.6	27.1	-35.6
	2010	27.8	5.6	2.7	83.8	-19.9	107.0	18.3	4.6	9.7	-39.7	86.5	6.6	3.4	31.6	-28.0	90.0	11.1	3.7	27.3	-32.2
CHE																					
	1995	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	2005	59.3	15.2	23.0	55.2	-52.7	105.5	10.0	14.2	5.1	-34.8	96.6	13.0	9.0	16.6	-35.2	95.4	12.0	12.6	15.9	-36.0
	2008	66.6	8.7	10.7	58.1	-44.1	101.8	7.8	14.8	11.3	-35.7	97.6	4.0	8.7	24.4	-34.8	97.8	6.3	11.1	21.1	-36.4
TUR																					
	1994	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	31.6	12.9	49.2	6.3	na
	2007	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	49.0	10.4	22.2	19.3	na
	2009	45.8	12.9	24.9	17.8	-1.4	48.5	13.0	23.7	15.9	-1.1	50.7	9.8	17.6	23.2	-1.2	49.1	11.6	21.2	19.3	-1.1
GBR																					
	1995	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	2007	27.7	9.4	7.1	66.4	-10.6	102.7	12.7	16.7	2.9	-35.1	71.9	13.1	7.2	26.9	-19.0	86.3	12.2	11.3	17.1	-26.9
	2010	27.9	8.0	6.3	66.4	-8.6	103.1	12.5	15.8	3.7	-35.1	66.5	11.1	7.6	31.5	-16.8	84.0	11.6	10.5	19.4	-25.6
USA																					
	1995	48.8	5.2	4.8	47.0	-5.8	110.5	17.0	7.8	4.3	-39.5	88.7	8.9	5.0	14.4	-17.0	97.8	12.3	6.1	11.0	-27.2
	2008	51.2	5.7	5.5	44.1	-6.5	110.0	13.8	8.7	4.3	-36.7	88.6	8.0	4.9	14.2	-15.7	98.3	10.5	6.5	10.6	-25.9
	2010	45.2	5.7	4.6	50.2	-5.7	109.6	13.5	7.6	4.9	-35.5	84.0	7.9	4.5	18.0	-14.4	96.0	10.4	5.8	12.6	-24.8
OECD average																					
	1995	33.9	5.5	9.1	63.9	-12.4	98.5	11.5	18.6	10.4	-39.0	80.9	6.8	9.0	27.5	-24.2	75.3	8.9	14.1	21.9	-29.9
	2007	43.3	6.5	9.9	55.4	-15.0	97.5	11.5	15.6	10.0	-34.6	81.8	6.0	8.5	25.8	-22.1	82.1	7.7	11.9	22.0	-26.9
	2010	41.2	7.8	8.1	56.9	-14.0	95.0	13.2	14.4	9.9	-32.6	80.2	7.4	7.8	25.7	-21.1	82.8	9.5	10.3	21.9	-25.8

Note: The data refer to components of household disposable income at different points of distribution: the poorest and richest 20% of households (bottom and top quintiles) and households with incomes just below the median, i.e. ranging from the poorest 40% to the poorest 50% (fifth decile). The figure also displays income components for mean income computed over the entire population of households.

Source: OECD Income Distribution Database.

Table 6. Wrapping-up: a tentative dashboard of countries' relative developments - Normalised indicators

A. Evolution over the period mid-90s - late 2000s[1]

	GDP per capita	Mean disposable income	Median disposable income	Mean disposable income of the bottom quintile	Relative poverty headcount	Gini coefficient	Inequality in the lower half of the income distribution	Inequality in the upper half of the income distribution	Mean over median income ratio
AUS	0.3	0.6	0.6	0.6	0.4	0.2	0.6	0.0	0.0
AUT	0.3	0.3	0.3	0.3	0.7	0.2	0.7	0.0	0.0
BEL	0.2	0.3	0.3	0.4	0.9	0.6	1.0	0.2	0.2
CAN	0.2	0.5	0.5	0.4	0.6	0.2	0.6	0.0	0.1
CHL	0.5	0.4	0.5	0.6	0.9	0.7	0.8	0.6	0.6
CZE	0.5	0.5	0.5	0.5	0.6	0.4	0.6	0.2	0.2
DNK	0.1	0.4	0.3	0.3	0.6	0.2	0.6	0.0	0.0
FIN	0.4	0.5	0.5	0.3	0.4	0.2	0.5	0.0	0.1
FRA	0.1	0.3	0.3	0.3	0.7	0.2	0.6	0.0	0.0
DEU	0.2	0.2	0.2	0.2	0.6	0.3	0.6	0.1	0.1
GRC	0.4	0.5	0.5	0.5	0.8	0.5	0.7	0.2	0.2
HUN	0.4	0.5	0.5	0.5	0.8	0.6	0.7	0.3	0.2
IRL	0.8	0.8	0.8	0.7	0.9	0.4	0.6	0.1	0.1
ISR	0.3	0.4	0.4	0.2	0.0	0.1	0.0	0.0	0.2
ITA	0.0	0.2	0.2	0.4	1.0	0.5	0.9	0.2	0.2
JPN	0.0	0.0	0.0	0.0	0.5	0.3	0.6	0.1	0.1
LUX	0.5	0.4	0.3	0.3	0.5	0.3	0.6	0.1	0.1
MEX	0.2	0.0	0.1	0.2	0.9	0.8	0.6	0.8	0.8
NLD	0.3	0.2	0.3	0.3	0.7	0.5	0.7	0.2	0.2
NZL	0.2	0.5	0.5	0.5	0.5	0.6	0.6	0.3	0.3
NOR	0.2	0.6	0.6	0.6	0.7	0.4	0.6	0.1	0.1
POL	0.7	na	na	na	na	na	na	na	na
PRT	0.2	0.4	0.4	0.5	1.0	0.6	0.9	0.2	0.2
ESP	0.3	0.3	0.4	0.2	0.3	0.5	0.2	0.3	0.5
SWE	0.4	0.5	0.5	0.3	0.2	0.0	0.3	0.0	0.1
CHE	0.2	na	na	na	na	na	na	na	na
TUR	0.4	0.5	0.7	0.6	0.4	1.0	0.6	1.0	1.0
GBR	0.3	0.4	0.4	0.4	0.8	0.4	0.7	0.1	0.2
USA	0.2	0.2	0.2	0.2	0.7	0.3	0.5	0.0	0.1

B. Correlations between the normalised indicators

	GDP per capita	Mean disposable income	Median disposable income	Mean disposable income of the bottom quintile	Relative poverty headcount	Gini coefficient	Inequality in the lower half of the income distribution	Inequality in the upper half of the income distribution	Mean over median income ratio
GDP per capita	1.0								
Mean disposable income	0.7	1.0							
Median disposable income	0.7	0.9	1.0						
Mean disposable income of the bottom quintile	0.6	0.8	0.8	1.0					
Relative poverty headcount	0.0	-0.1	-0.1	0.4	1.0				
Gini coefficient	0.1	-0.2	0.1	0.4	0.4	1.0			
Inequality in the lower half of the income distribution	-0.1	-0.1	-0.1	0.4	0.8	0.4	1.0		
Inequality in the upper half of the income distribution	0.1	-0.2	0.1	0.3	0.2	0.9	0.2	1.0	
Mean over median income ratio	0.1	-0.2	0.2	0.2	0.0	0.8	0.0	1.0	1.0

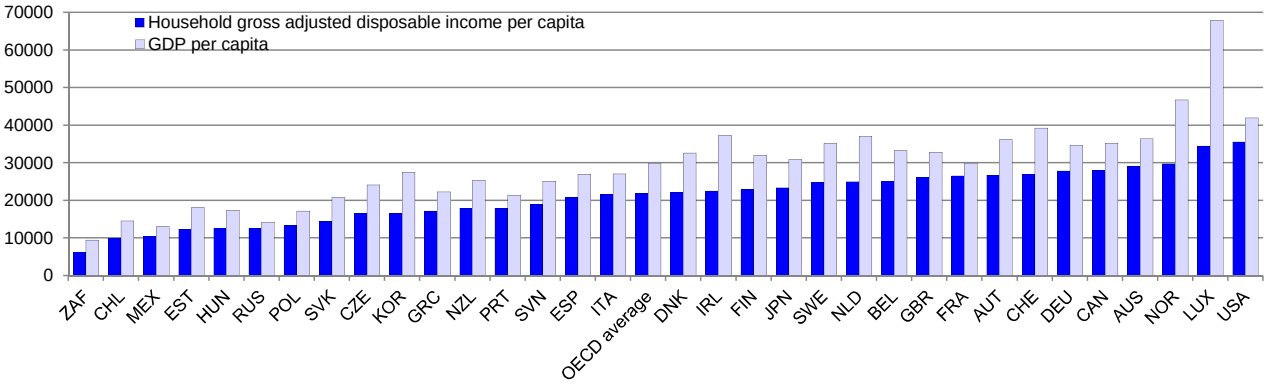
Note: Panel A presents normalised values of selected indicators: for each country and each indicator, the change over the period from the mid-90s to late 2000s is normalised by its respective minimum and maximum value, as observed in the sample of countries for which the data are available. The resulting normalised indicators vary between 0 and 1, where countries scoring 0 are those that experienced minimum growth in a comparative perspective, and countries scoring 1 those that experienced maximum growth in a comparative perspective. In order obtain the same direction of desirable changes across indicators, this procedure is inverted in the case of inequality and relative poverty. Hence higher values of normalised indicators signal more desirable outcomes in terms of growth and the income distribution, i.e. stronger growth in GDP or in household incomes on the one hand, declines in income inequality or in relative poverty on the other. Panel B presents Pearson correlations across the above presented indicators. See text and Table 1 for details and definitions of the indicators.

1. Mid 90s refer to 1995 except for Austria for which the data refer to 1993, for Czech Republic, France, Luxembourg and Chile for which the data refer to 1996, for Greece, Ireland, Mexico, Turkey and the United Kingdom for which the data refer to 1994. Late 2000s refer to 2009 except for Australia, Canada, Denmark, France, Germany, Israel, Mexico, the Netherlands, Norway, Sweden, the United Kingdom and the United States for which the last available observation is 2010, for Korea for which it is 2011 and for Switzerland for which it is 2008.

Source: OECD calculations based on National Accounts and Income distribution Databases.

Figure 1. Cross-country patterns in GDP and household disposable income

Late 2000s[1]



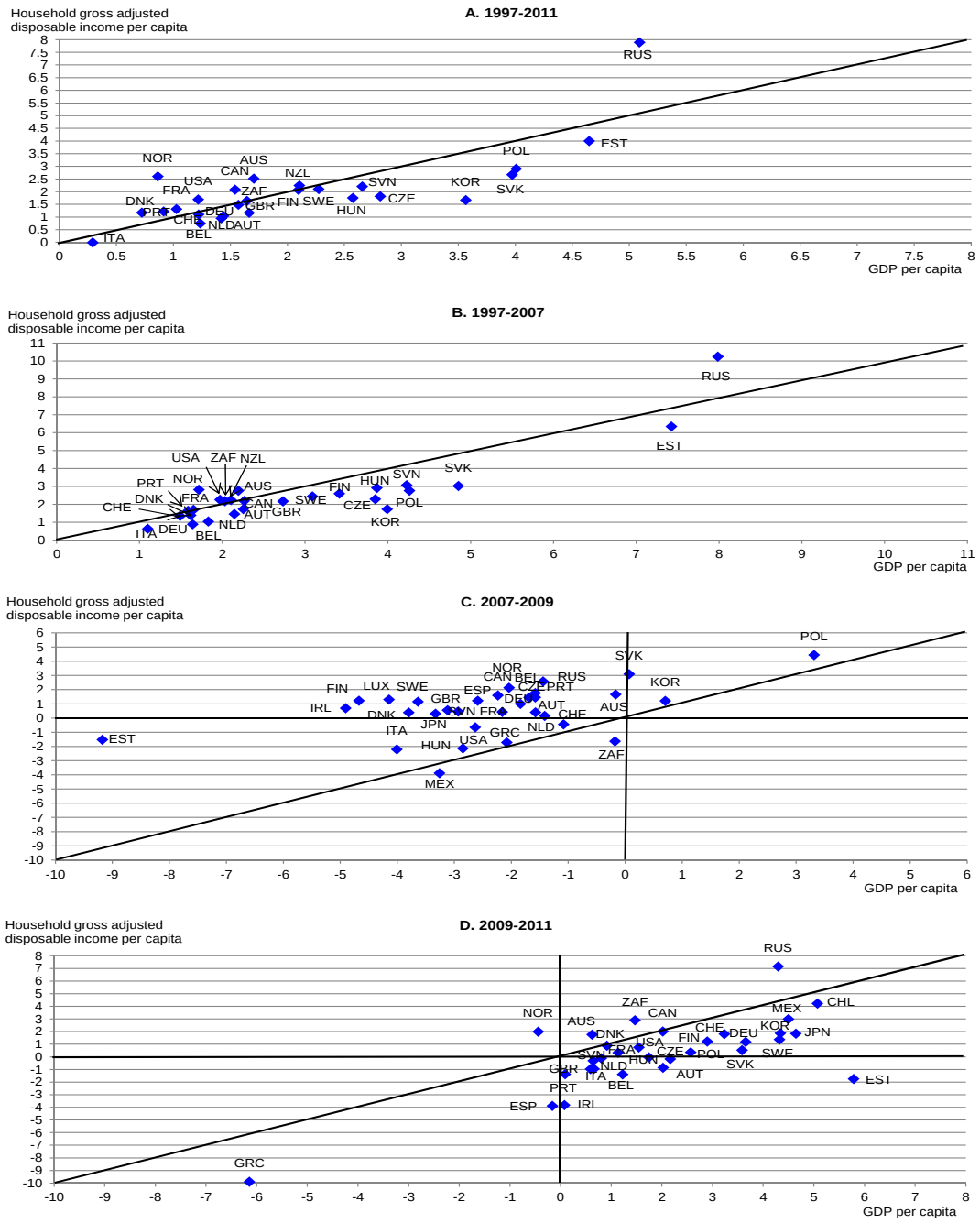
Note: Household gross adjusted disposable income per capita and GDP per capita are expressed in USD, constant prices, constant PPPs, OECD base year 2005. For household gross adjusted disposable income per capita Purchasing Power Parities (PPPs) are those for actual individual consumption of households while in the case of GDP per capita, PPPs for the GDP deflator are used.

1. Late 2000s refer to 2011 except for Australia, Canada, Chile, Japan, Mexico, Poland, Switzerland, the United States, the Russian Federation and South Africa for which the last available observation is 2010; for Luxembourg it is 2009; for New-Zealand it is 2006.

Source: OECD calculations based on National Accounts Database.

Figure 2. Real annual growth rates of GDP and household disposable income: cross-country patterns[1]

Average annual growth rates in percentages



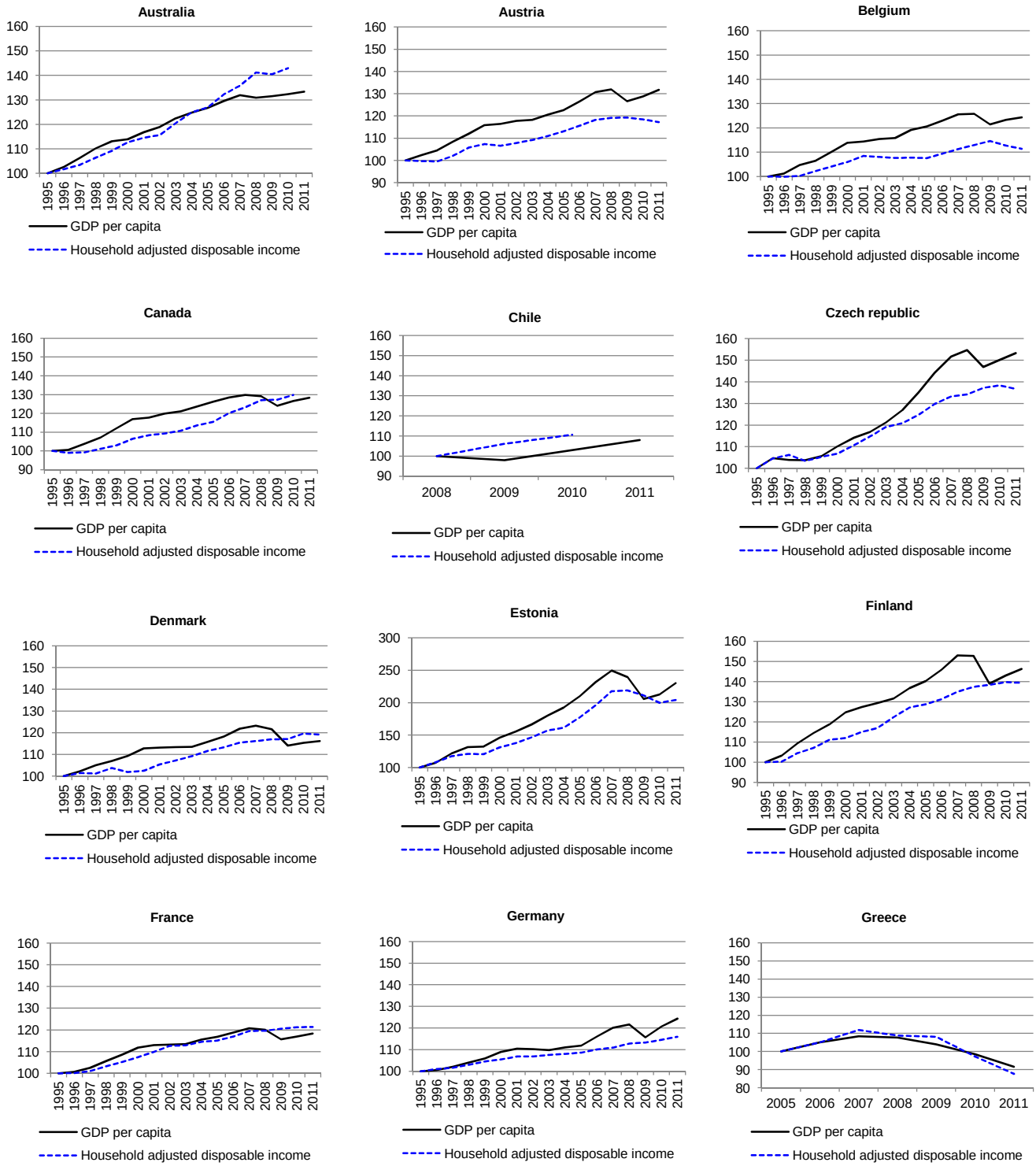
Note: Household gross adjusted disposable income per capita and GDP per capita are expressed in USD, constant prices, constant PPPs, OECD base year 2005. For household gross adjusted disposable income per capita Purchasing Power Parities (PPPs) are those for actual individual consumption of households while in the case of GDP per capita, PPPs for the GDP deflator are used.

1. For New-Zealand, the last available observation is 2006, for Luxembourg 2009 and for Australia, Canada, Chile, Japan, Mexico, Poland, the Russian Federation, South Africa, Switzerland, the United States it is 2010. Instead of 2007 data, 2006 data for New Zealand and 2008 for Chile.

Source: OECD calculations based on National Accounts Database.

Figure 3. Trends in GDP and household disposable incomes per capita

A. Constant prices



Note: Household gross adjusted disposable income per capita and GDP per capita are expressed in USD, constant prices, constant PPPs, OECD base year 2005. For household gross adjusted disposable income per capita Purchasing Power Parities (PPPs) are those for actual individual consumption of households while in the case of GDP per capita, PPPs for the GDP deflator are used.

Source: OECD calculations based on National Accounts Database.

Figure 3. Trends in GDP and household disposable incomes per capita (*cont.*)

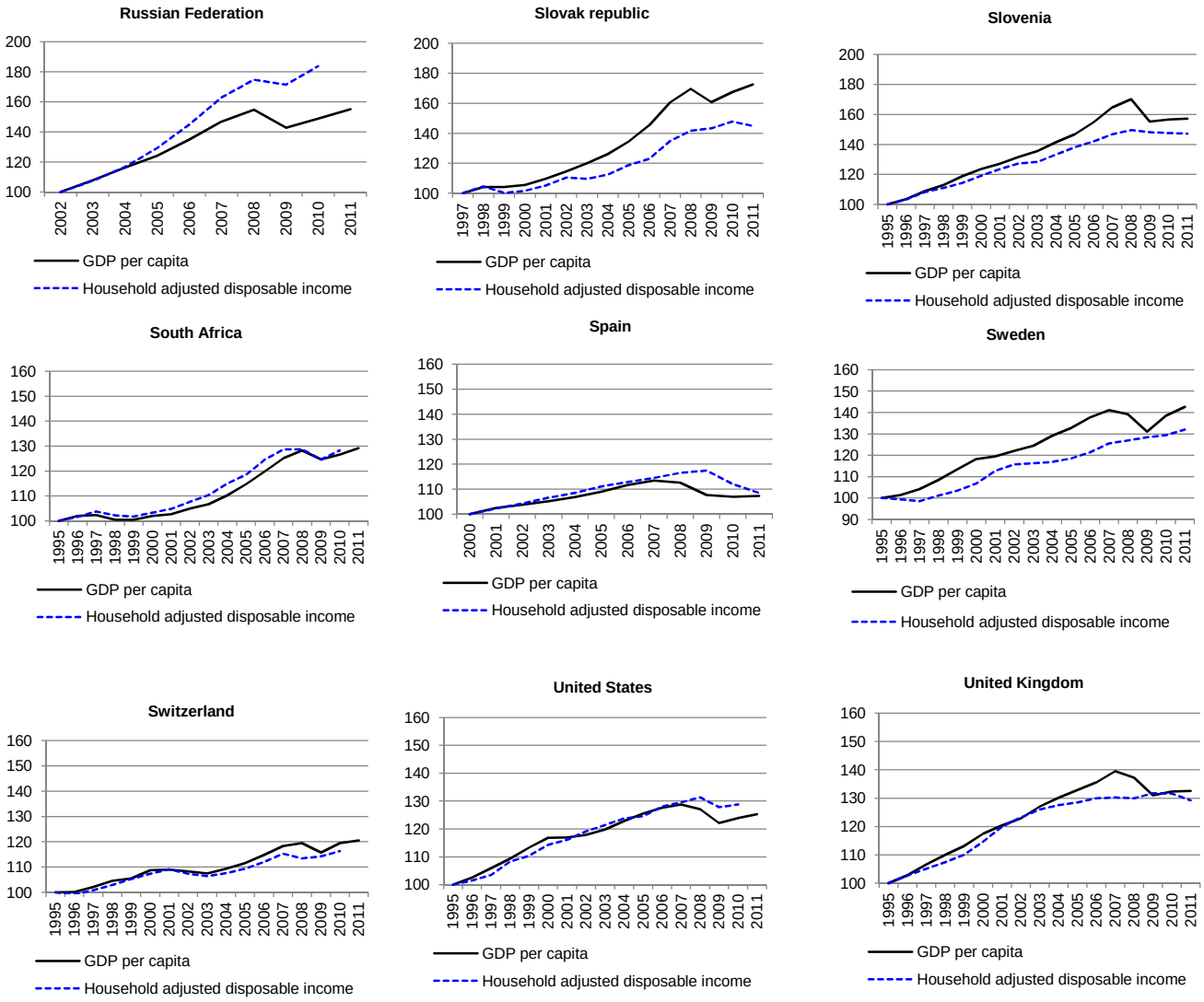
A. Constant prices

Note: Household gross adjusted disposable income per capita and GDP per capita are expressed in USD, constant prices, constant PPPs, OECD base year 2005. For household gross adjusted disposable income per capita Purchasing Power Parities (PPPs) are those for actual individual consumption of households while in the case of GDP per capita, PPPs for the GDP deflator are used.

Source: OECD calculations based on National Accounts Database.

Figure 3. Trends in GDP and household disposable incomes per capita (*cont.*)

A. Constant prices

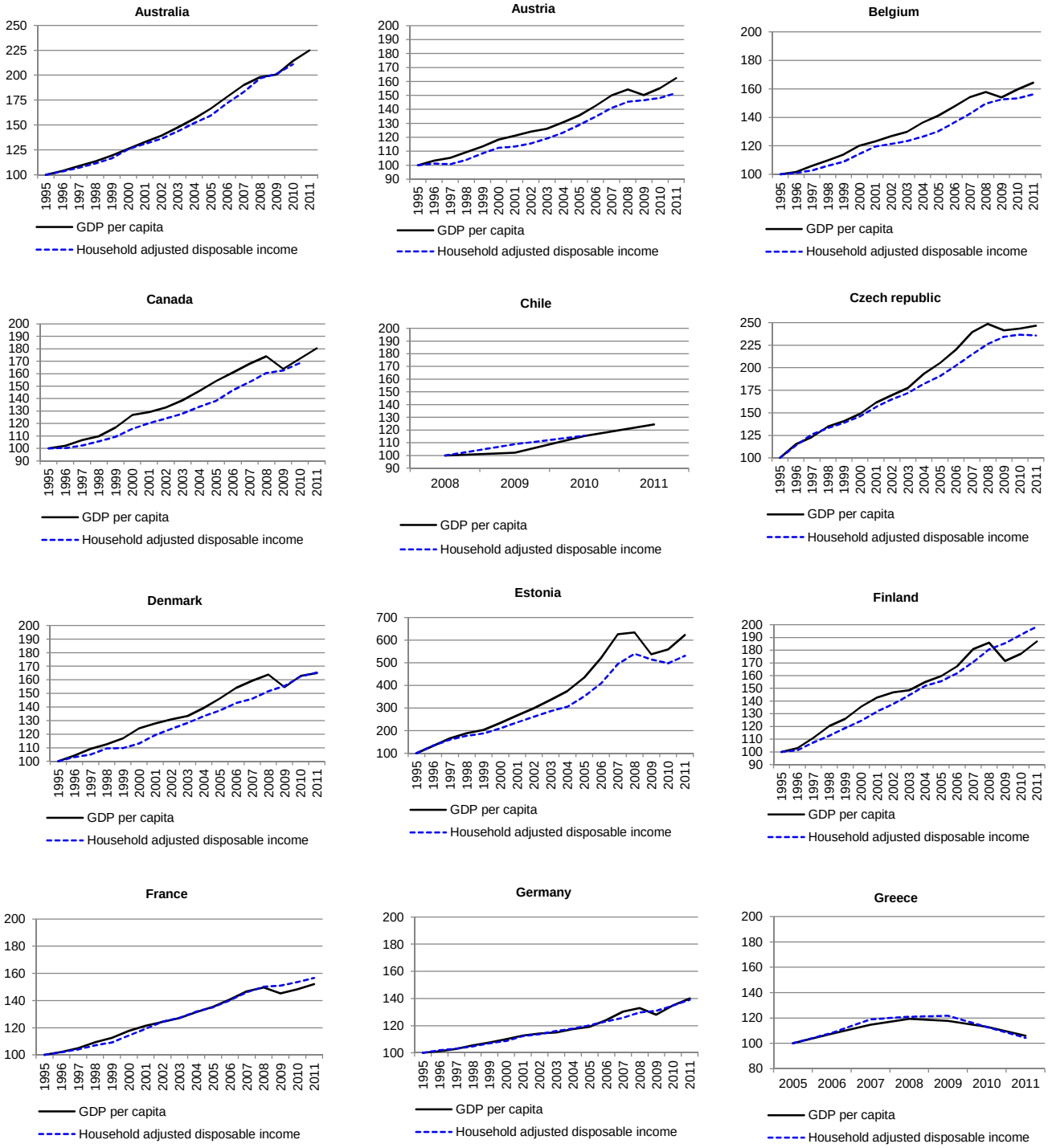


Note: Household gross adjusted disposable income per capita and GDP per capita are expressed in USD, constant prices, constant PPPs, OECD base year 2005. For household gross adjusted disposable income per capita Purchasing Power Parities (PPPs) are those for actual individual consumption of households while in the case of GDP per capita, PPPs for the GDP deflator are used.

Source: OECD calculations based on National Accounts Database.

Figure 3. Trends in GDP and household disposable incomes per capita (*cont.*)

B. Current prices

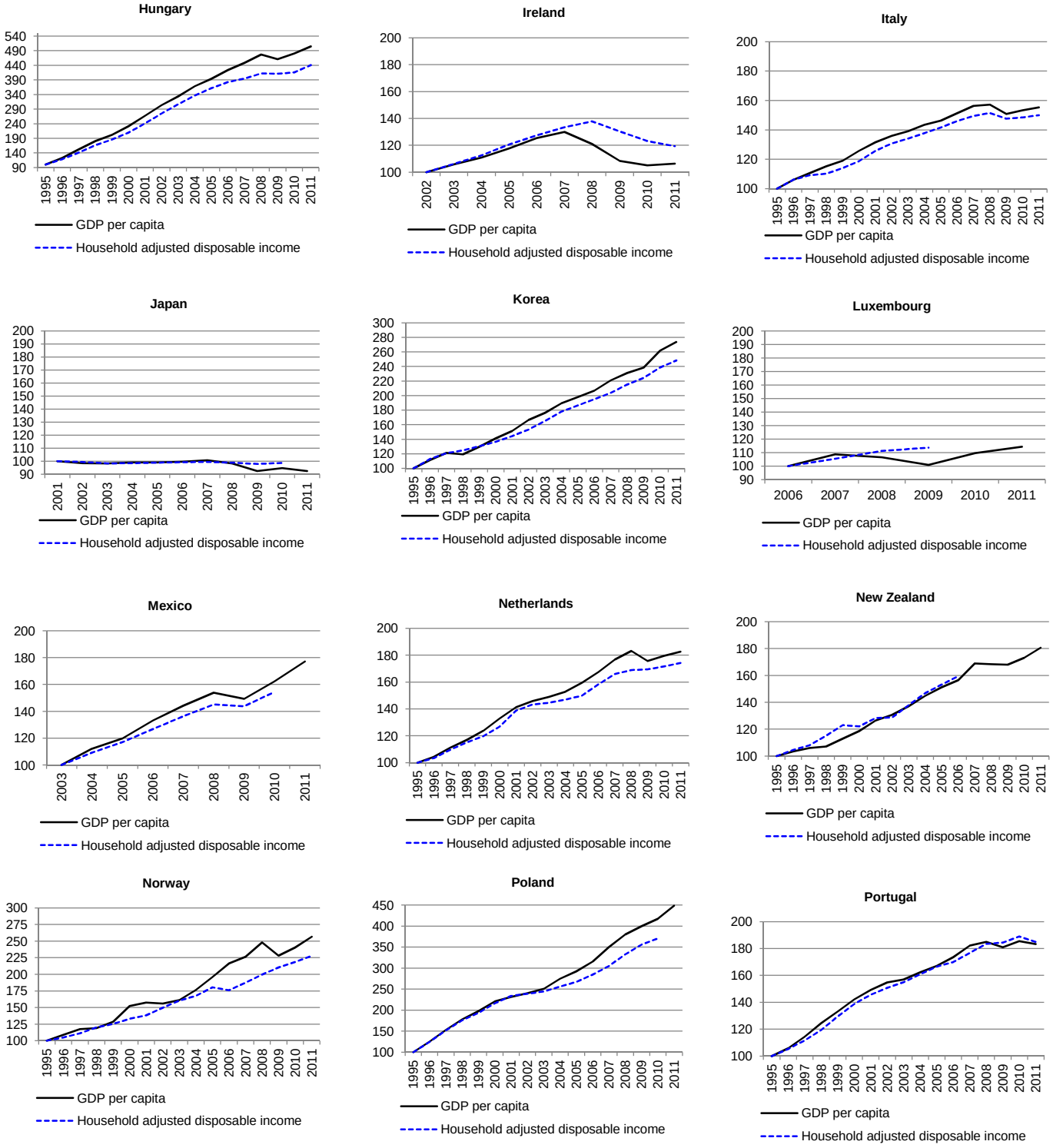


Note: Household adjusted disposable income and GDP per capita are expressed in current values of local currency.

Source: OECD calculations based on National Accounts Database.

Figure 3. Trends in GDP and household disposable incomes per capita (*cont.*)

B. Current prices

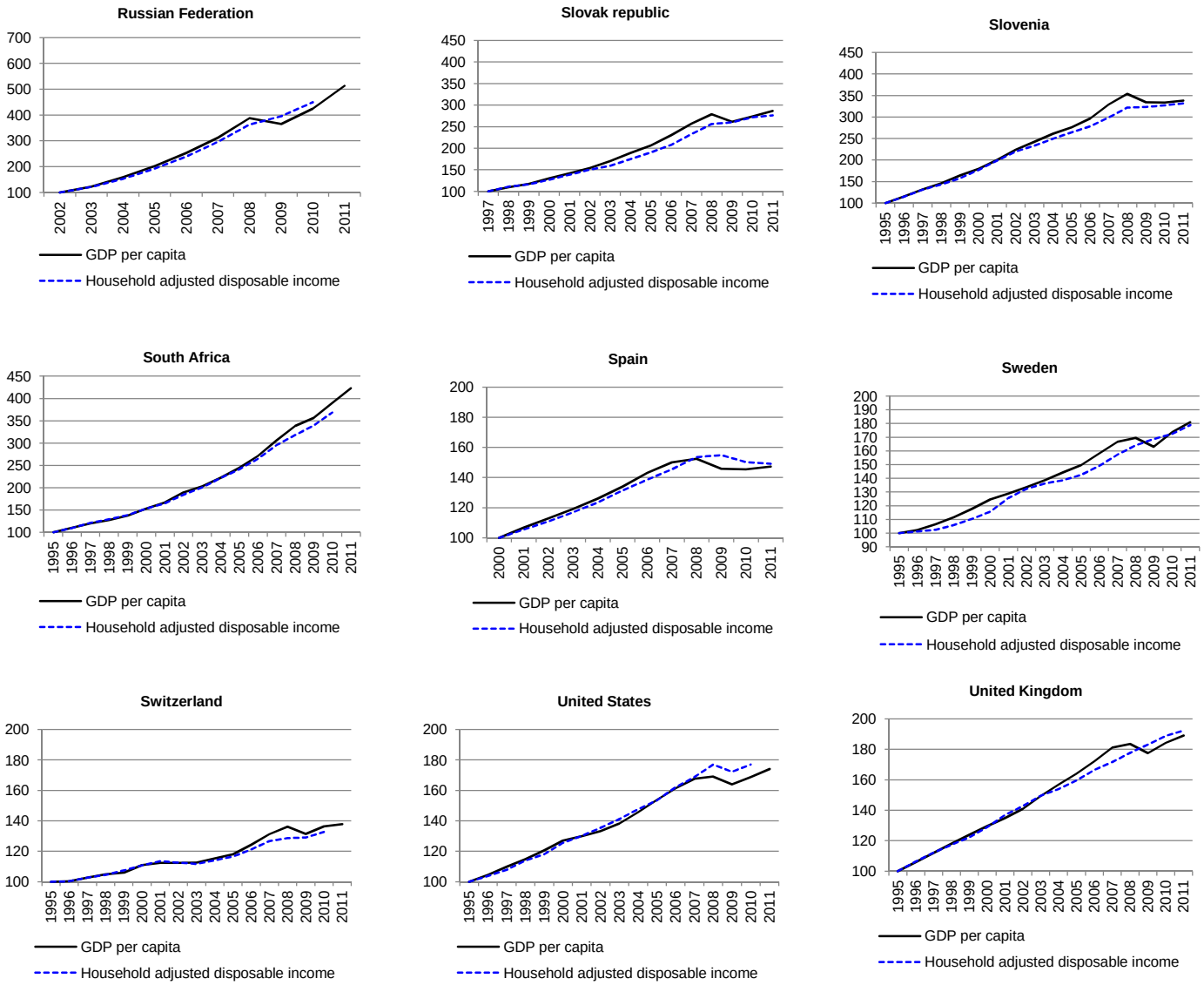


Note: Household adjusted disposable income and GDP per capita are expressed in current values of local currency.

Source: OECD calculations based on National Accounts Database.

Figure 3. Trends in GDP and household disposable incomes per capita (*cont.*)

B. Current prices

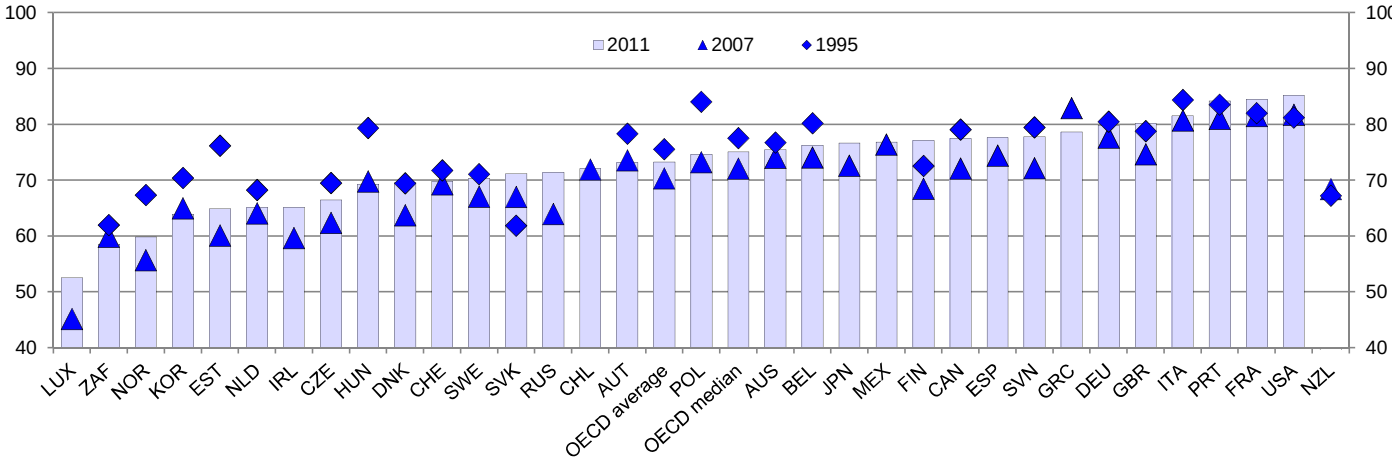


Note: Household adjusted disposable income and GDP per capita are expressed in current values of local currency.

Source: OECD calculations based on National Accounts Database.

Figure 4. Household adjusted disposable income as a share of GDP[1]

Percentage



Note: Both household gross adjusted disposable income and GDP are expressed in current prices.

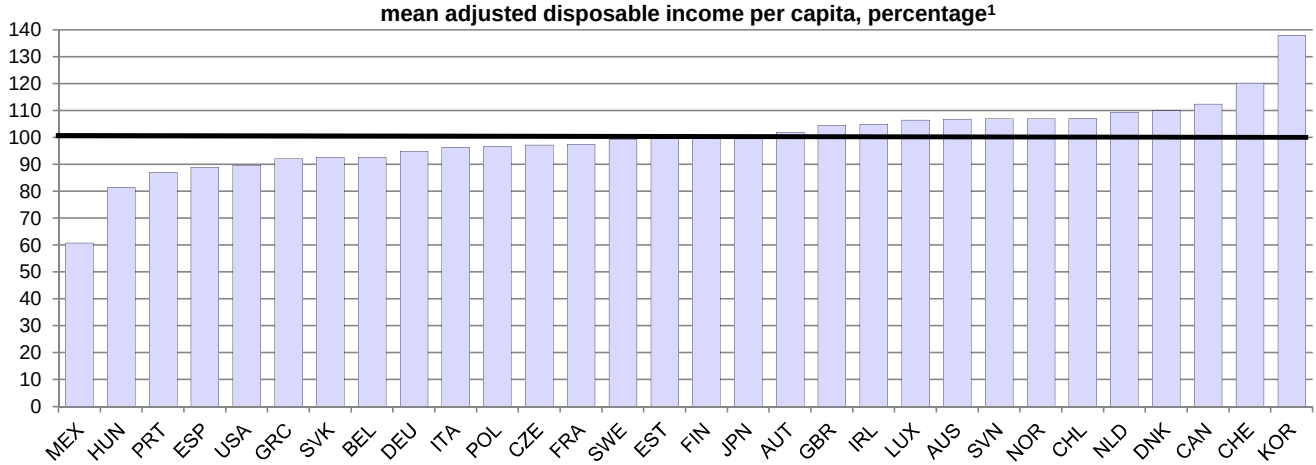
1. For Australia, Canada, Japan, Mexico, Poland, Switzerland, the United States, Chile, the Russian Federation and South Africa the last available year is 2010; for Luxembourg it is 2009 and for New Zealand it is 2006. Instead of 2007, for Chile data refer to 2008.

Source: OECD calculations based on National Accounts Database.

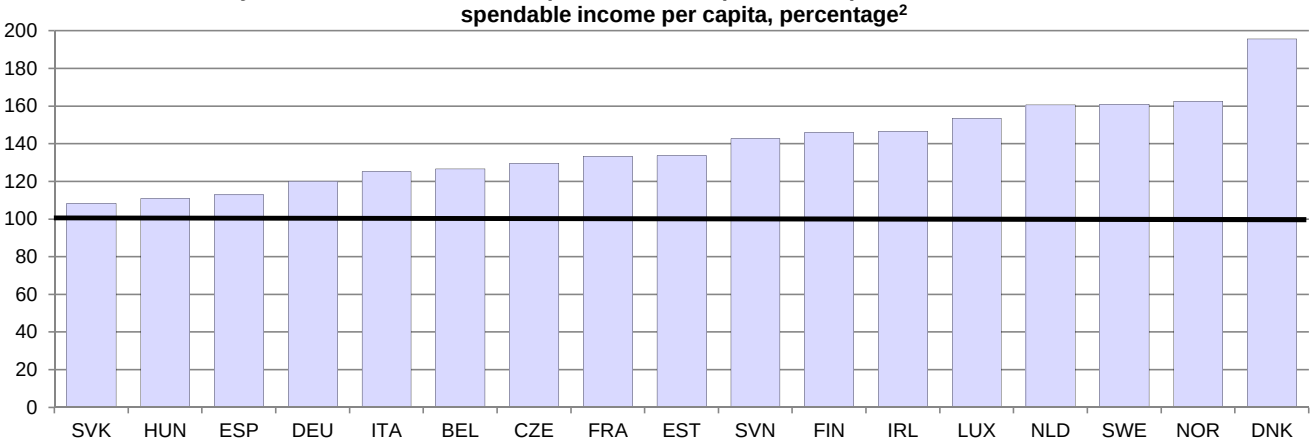
Figure 5. From macro to micro sources

Late 2000s

A. Survey-based mean household disposable income per consumption unit as a share of SNA-based mean adjusted disposable income per capita, percentage[1]



B. Survey-based mean household disposable income per consumption unit as a share of SNA-based spendable income per capita, percentage[2]



Note: Spendable income is derived from the national accounts by subtracting from household adjusted disposable income several non-cash components in order to derive a measure of household income conceptually closer to its survey-based counterpart (see main text). For the purpose of this comparison, the data are used in current values of domestic currency.

1. Data refer to 2009 except for Australia, Canada, Denmark, France, Germany, Israel, Mexico, the Netherlands, Norway, Sweden, the United Kingdom and the United States for which the last available observation is 2010, for Korea for which it is 2011 and for Switzerland for which it is 2008.

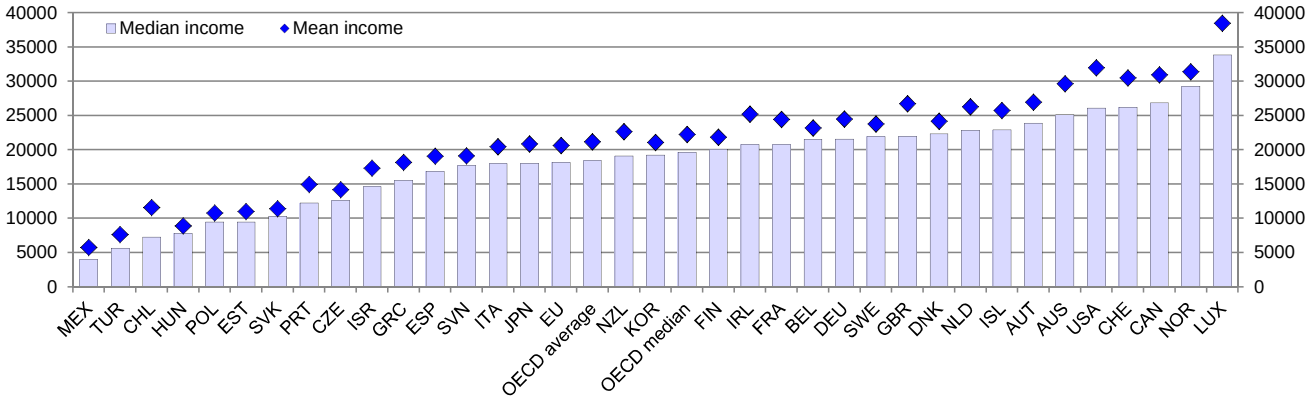
2. Data refer to 2010 except for Belgium, Czech Republic, Finland, Hungary, Ireland, Luxembourg, Norway, Spain, Estonia and Slovenia for which data refer to 2009 and for Slovak republic for which it is 2008.

Source: OECD calculations based on OECD National Accounts and Income Distribution Databases.

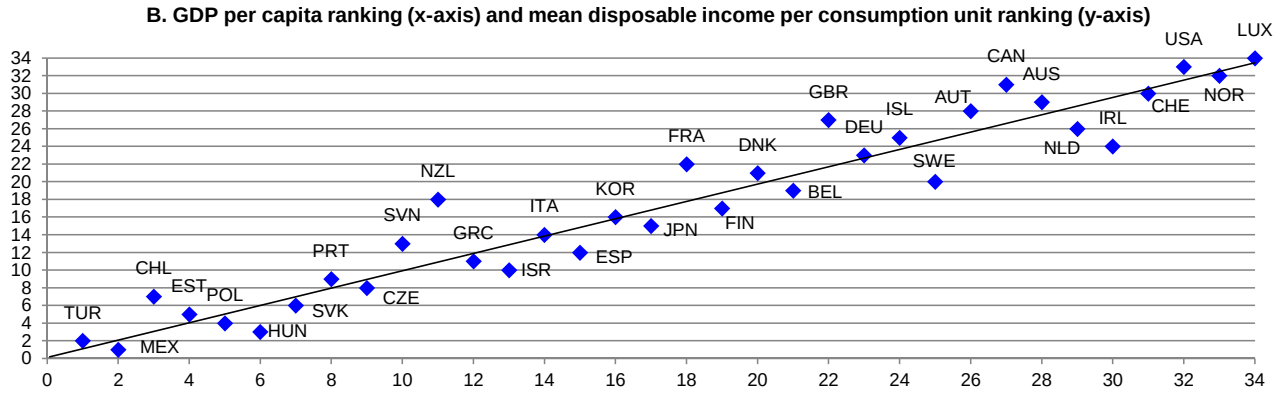
Figure 6. GDP, mean and median household disposable incomes

Late 2000s[1]

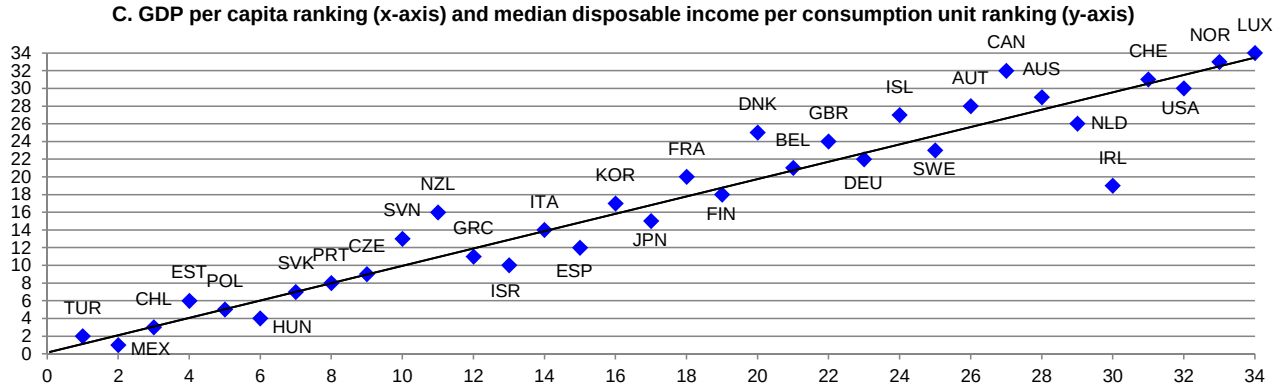
A. Household mean and median disposable income per consumption unit, US dollars at 2005 PPPs



B. GDP per capita ranking (x-axis) and mean disposable income per consumption unit ranking (y-axis)



C. GDP per capita ranking (x-axis) and median disposable income per consumption unit ranking (y-axis)



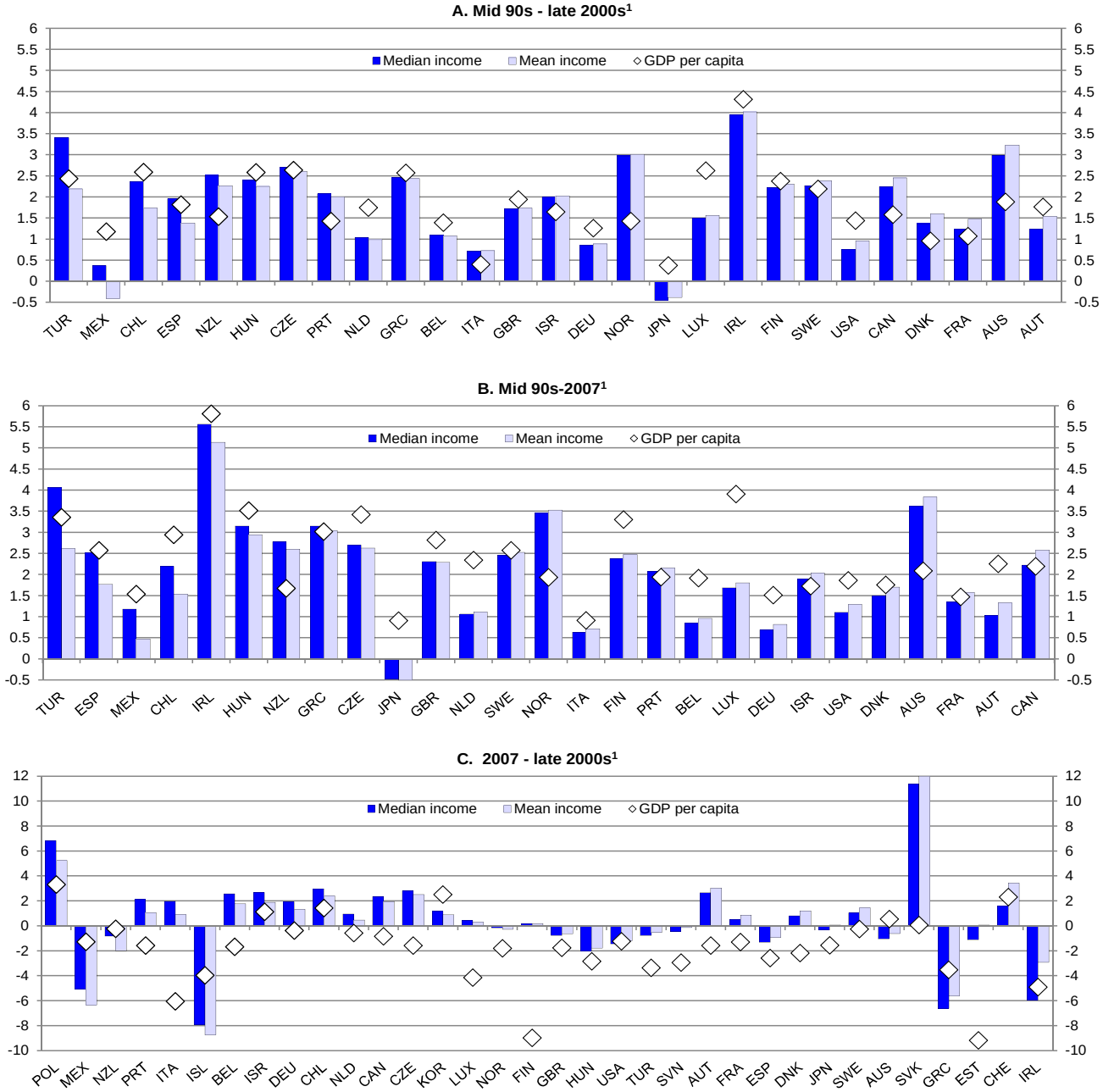
Note: All disposable income indicators used in this and the following sections refer to the concept of "equivalised" (or ''per consumption unit'') household disposable income. The notion of "equivalisation" implies that the income attributed to each person in a household reflects income sharing within the household and adjusts for household needs. It is assumed that these needs increase with household size, but less than proportionally (total household income is divided by the square root of household size). In the case of mean and median equivalised household disposable incomes, PPPs are those for private consumption of households. For GDP per capita, PPPs for the GDP deflator were used.

1. Late 2000s refer to 2009 except for Australia, Canada, Denmark, France, Germany, Israel, Mexico, the Netherlands, Norway, Sweden, the United Kingdom and the United States for which the last available observation is 2010, for Korea for which it is 2011 and for Switzerland for which it is 2008.

Source: OECD calculations based on OECD National Accounts and Income Distribution Databases.

Figure 7. Real annual growth rates of GDP, mean and median household disposable incomes across OECD countries

Average annual growth rates, percentage

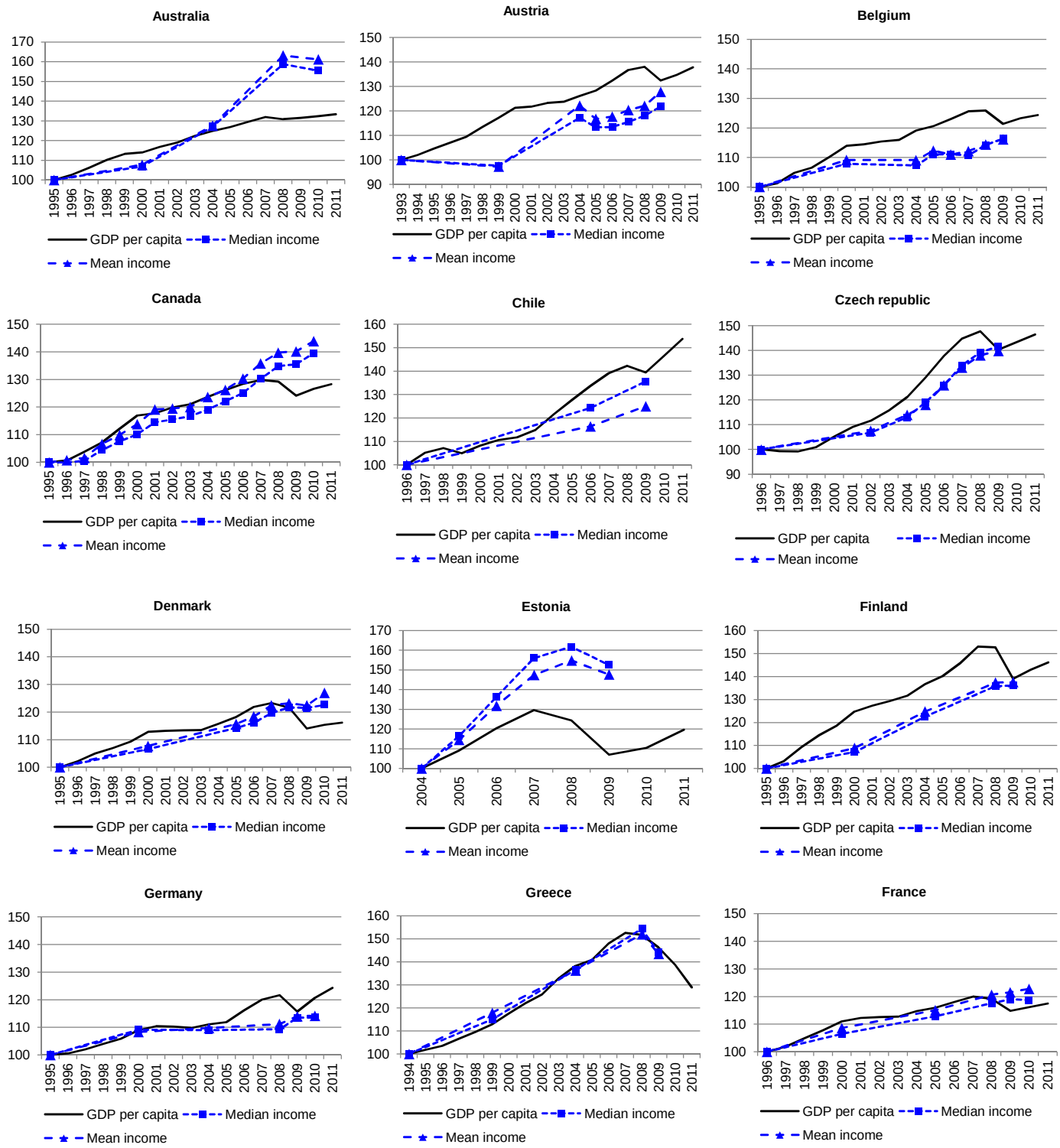


Note: For median and mean equivalised household disposable incomes, Purchasing Power Parities (PPPs) are those for private consumption of households. For GDP per capita, PPPs are those for the GDP deflator. Countries are sorted in ascending order according to the difference between the annual average growth rates of mean and median disposable incomes.

1. Mid 90s refer to 1995 except for Austria for which the data refer to 1993, for Czech Republic, France, Luxembourg and Chile for which the data refer to 1996, for Greece, Ireland, Mexico, Turkey and the United Kingdom for which the data refer to 1994. Late 2000s refer to 2009 except for Australia, Canada, Denmark, France, Germany, Israel, Mexico, the Netherlands, Norway, Sweden, the United Kingdom and the United States for which the last available observation is 2010, for Korea for which it is 2011 and for Switzerland for which it is 2008.

Source: OECD calculations based on OECD National Accounts and Income Distribution Databases.

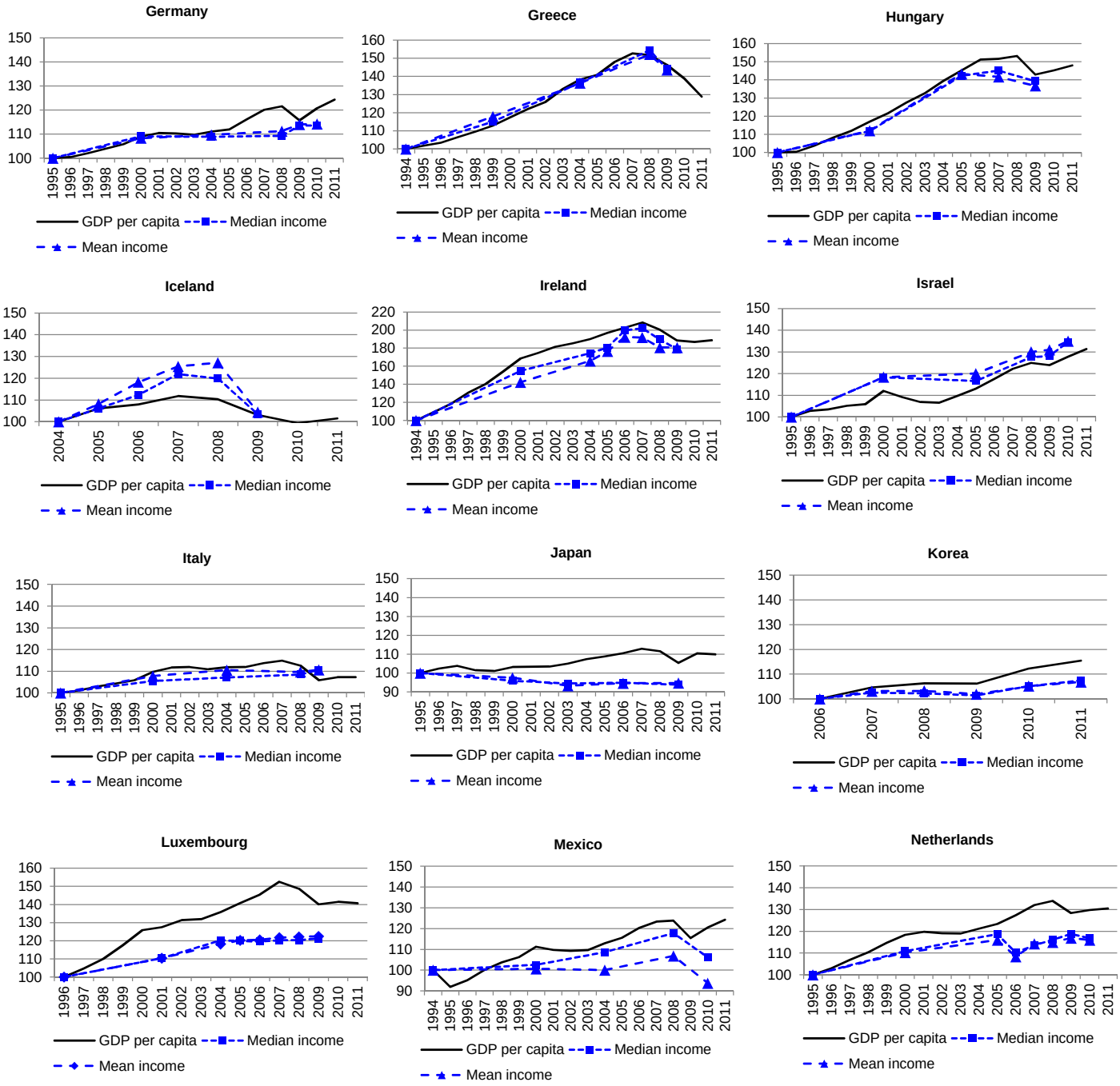
Figure 8. Trends in GDP, mean and median household disposable incomes



Note: For median and mean equivalised household disposable incomes, Purchasing Power Parities (PPPs) are those for private consumption of households. For GDP per capita, PPPs are those for the GDP deflator.

Source: OECD calculations based on OECD National Accounts and Income Distribution Databases.

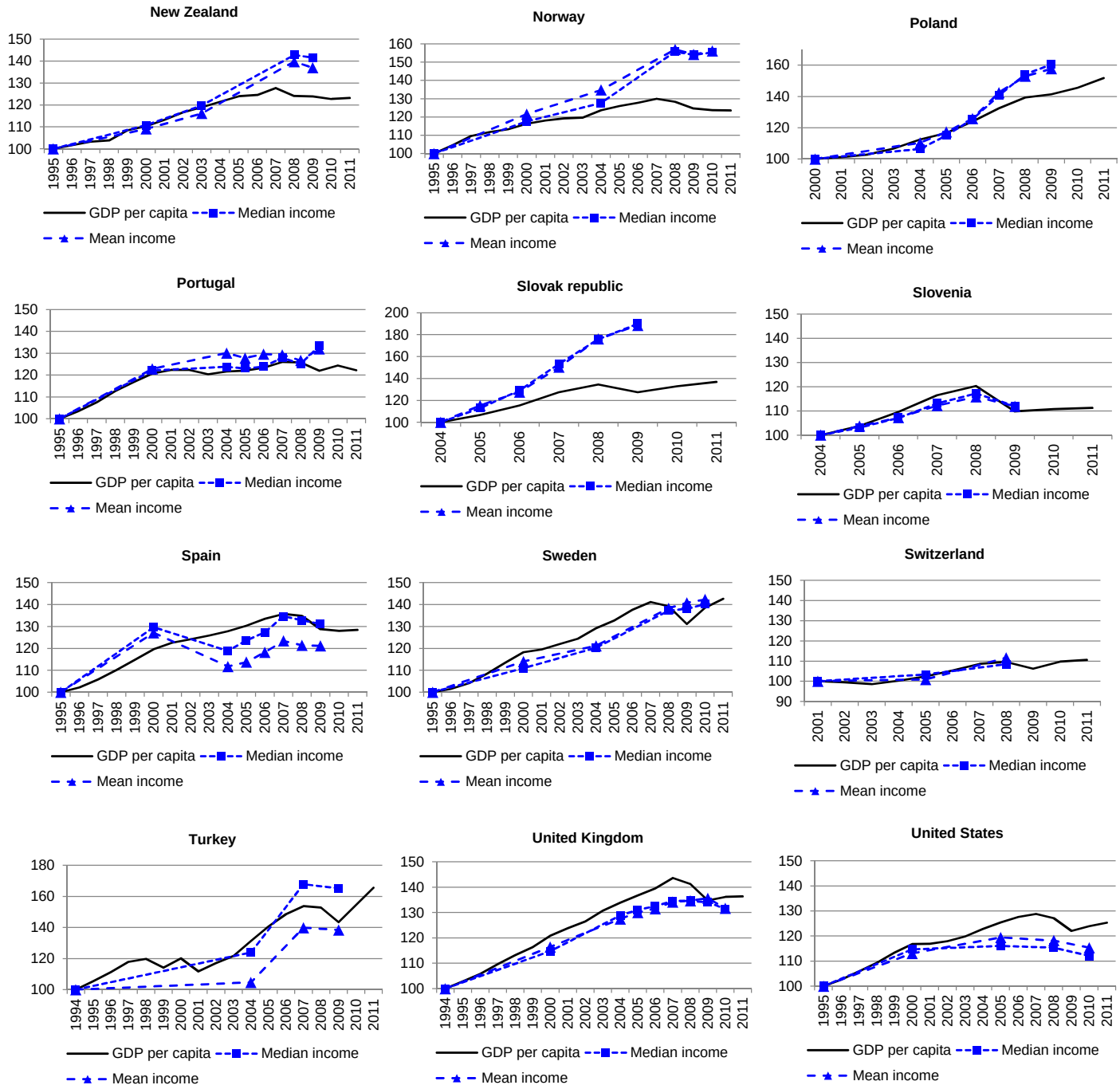
Figure 8. Trends in GDP, mean and median household disposable incomes *(cont.)*



Note: For median and mean equivalised household disposable incomes, Purchasing Power Parities (PPPs) are those for private consumption of households. For GDP per capita, PPPs are those for the GDP deflator.

Source: OECD calculations based on OECD National Accounts and Income Distribution Databases.

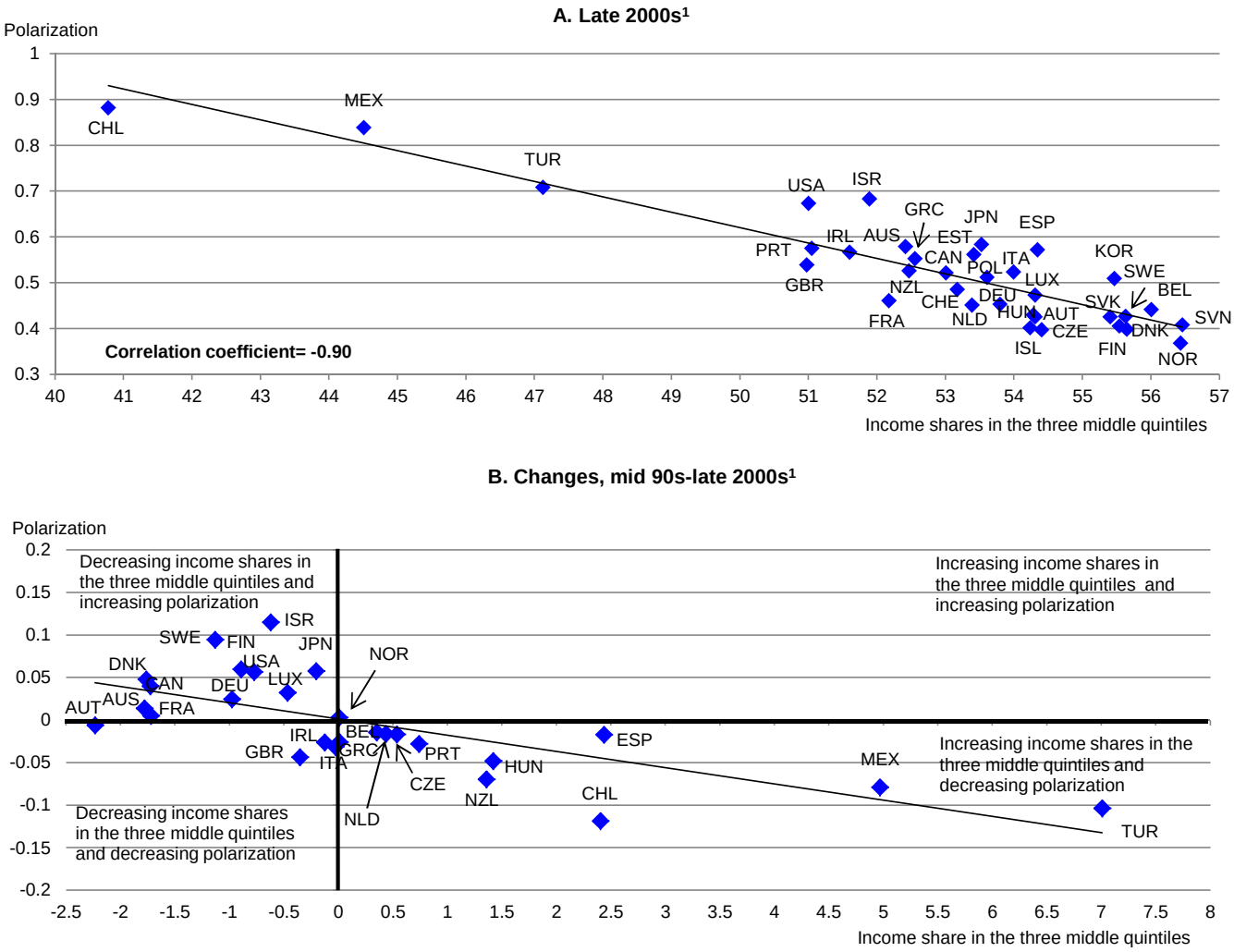
Figure 8. Trends in GDP, mean and median household disposable incomes *(cont.)*



Note: For median and mean equivalised household disposable incomes, Purchasing Power Parities (PPPs) are those for private consumption of households. For GDP per capita, PPPs are those for the GDP deflator.

Source: OECD calculations based on OECD National Accounts and Income Distribution Databases.

Figure 9. Comparing range-dependent and range-free measures of the middle class: from income shares to polarisation

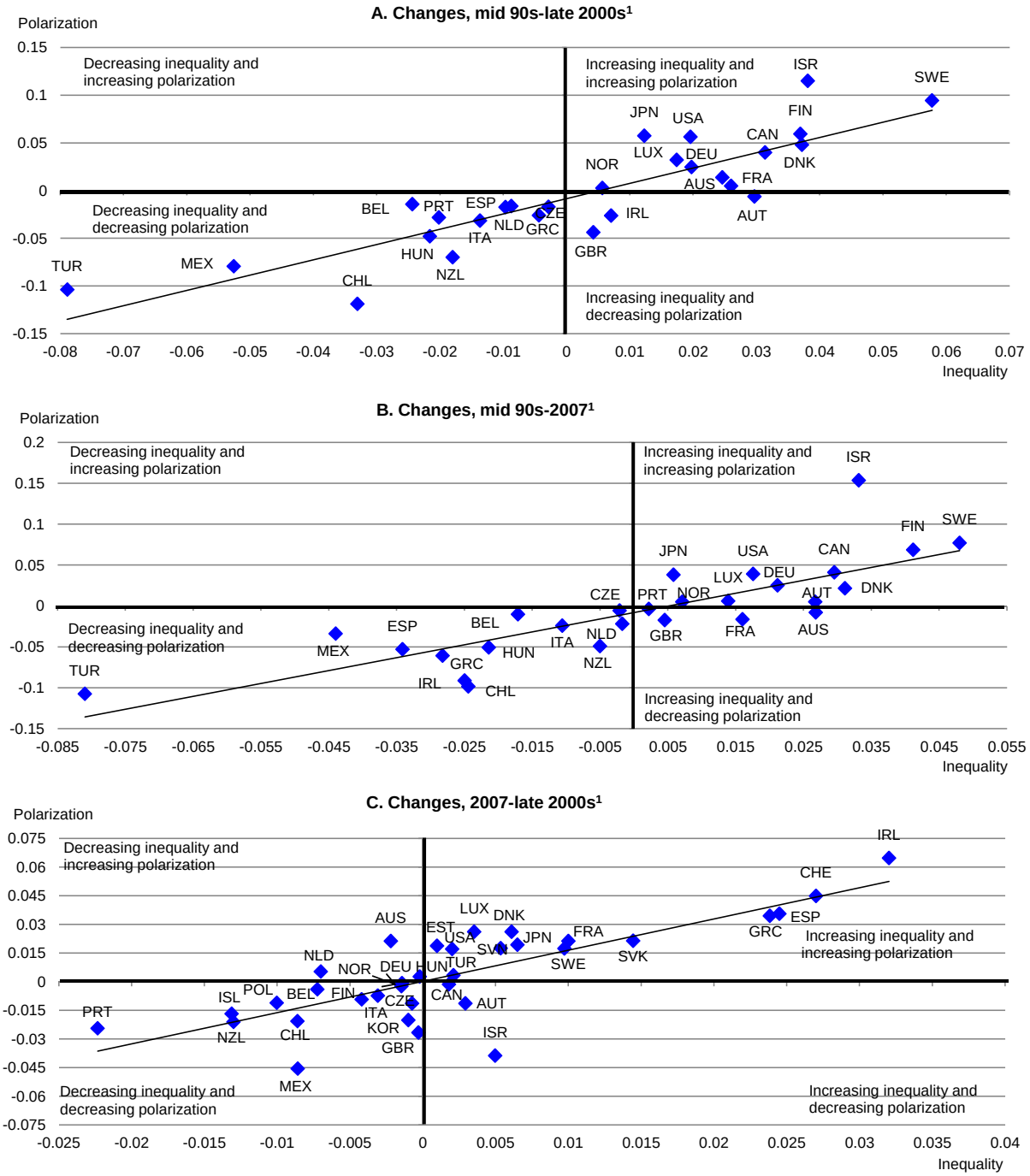


Note: Polarisation is measured by the Foster and Wolfson (2010) polarisation index calculated on household disposable incomes. The index has been scaled-up by a factor of 4 so as to simplify comparability with the Gini coefficient. The share of disposable income accruing to the 3 middle quintiles (from the 20% to the 80% poorest households) is used as an alternative measure of the middle class. See text for details.

1. Mid 90s refer to 1995 except for Austria for which the data refer to 1993, for Czech Republic, France, Luxembourg and Chile for which the data refer to 1996, for Greece, Ireland, Mexico, Turkey and the United Kingdom for which the data refer to 1994. Late 2000s refer to 2009 except for Australia, Canada, Denmark, France, Germany, Israel, Mexico, the Netherlands, Norway, Sweden, the United Kingdom and the United States for which the last available observation is 2010, for Korea for which it is 2011 and for Switzerland for which it is 2008.

Source: OECD Income Distribution Database.

Figure 10. Comparing the evolution of income polarisation to that of inequality

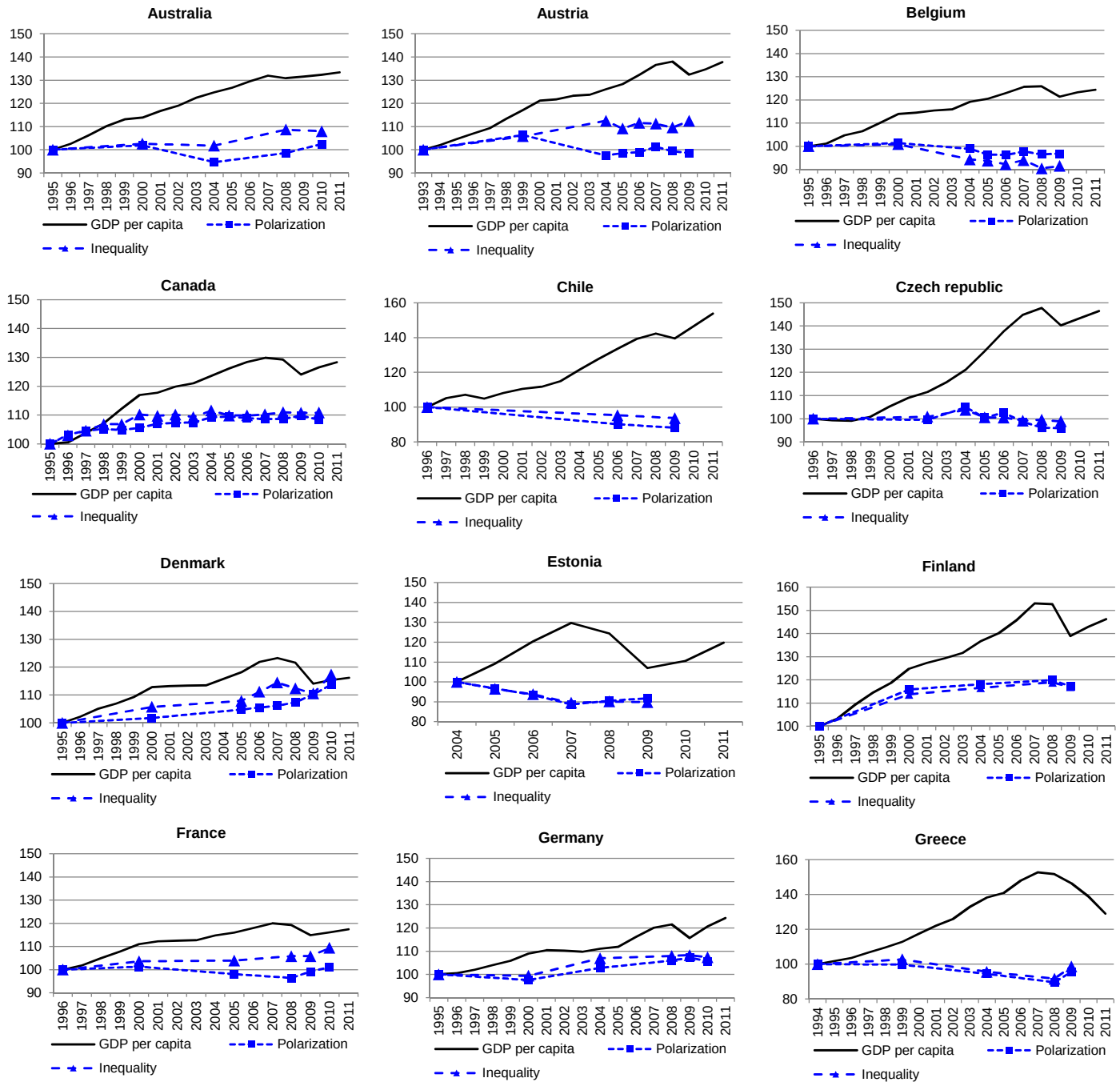


Note: Polarisation is measured by the Foster and Wolfson (2010) polarisation index calculated on household disposable incomes. The index has been scaled-up by a factor of 4 so as to simplify comparability with the Gini coefficient. Inequality is measured by the Gini index coefficient for disposable income. See text for details.

1. Mid 90s refer to 1995 except for Austria for which the data refer to 1993, for Czech Republic, France, Luxembourg and Chile for which the data refer to 1996, for Greece, Ireland, Mexico, Turkey and the United Kingdom for which the data refer to 1994. Late 2000s refer to 2009 except for Australia, Canada, Denmark, France, Germany, Israel, Mexico, the Netherlands, Norway, Sweden, the United Kingdom and the United States for which the last available observation is 2010, for Korea for which it is 2011 and for Switzerland for which it is 2008.

Source: OECD Income Distribution Database.

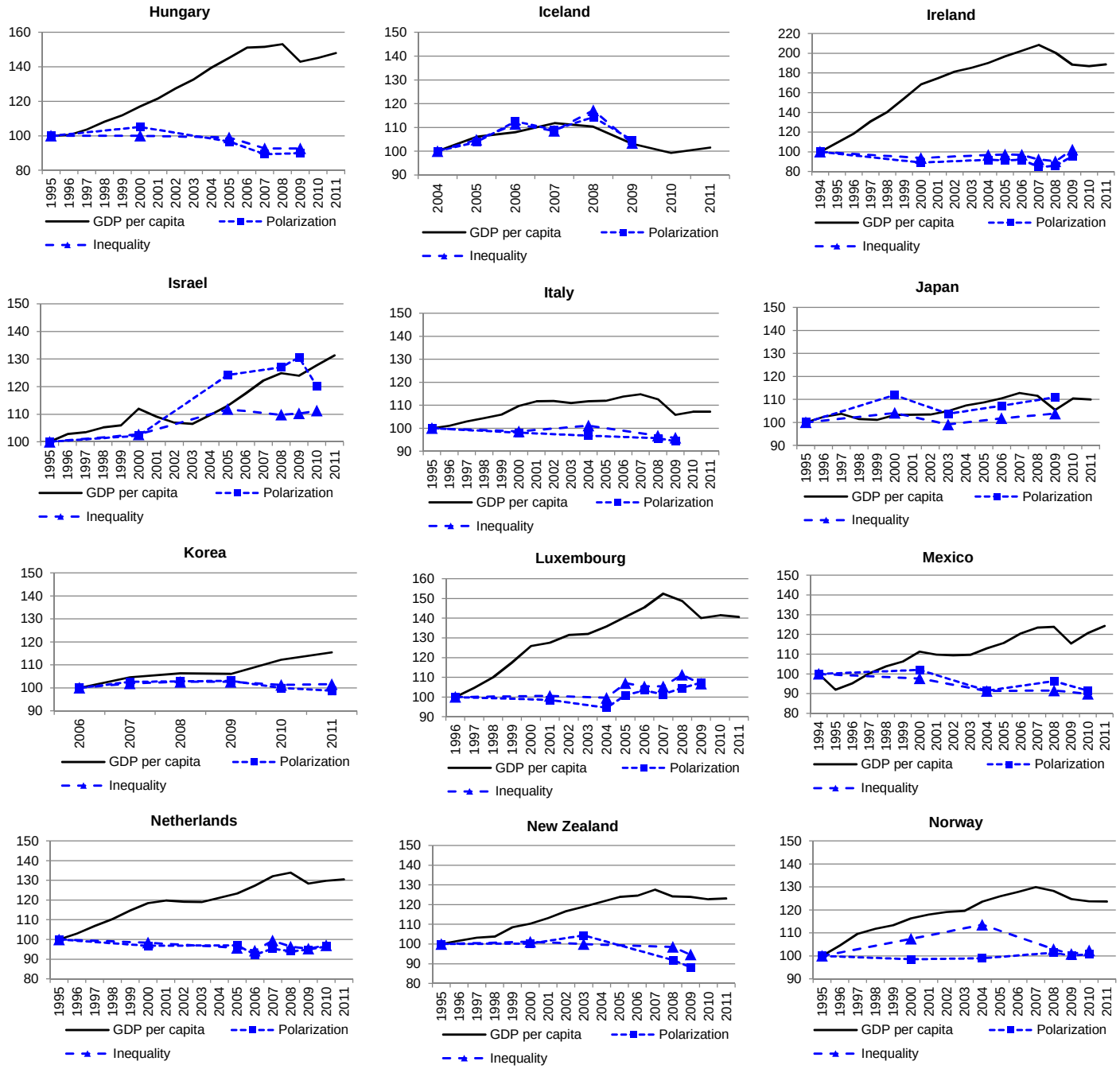
Figure 11. Trends in polarisation and inequality



Note: Polarisation is measured by the Foster and Wolfson (2010) polarisation index calculated on household disposable incomes. See text for details. Inequality is measured by the Gini index coefficient for disposable income. In both cases, purchasing Power Parities (PPPs) are those for private consumption of households. For GDP per capita, PPPs are those for the GDP deflator.

Source: OECD calculations based on OECD National Accounts and Income Distribution Databases.

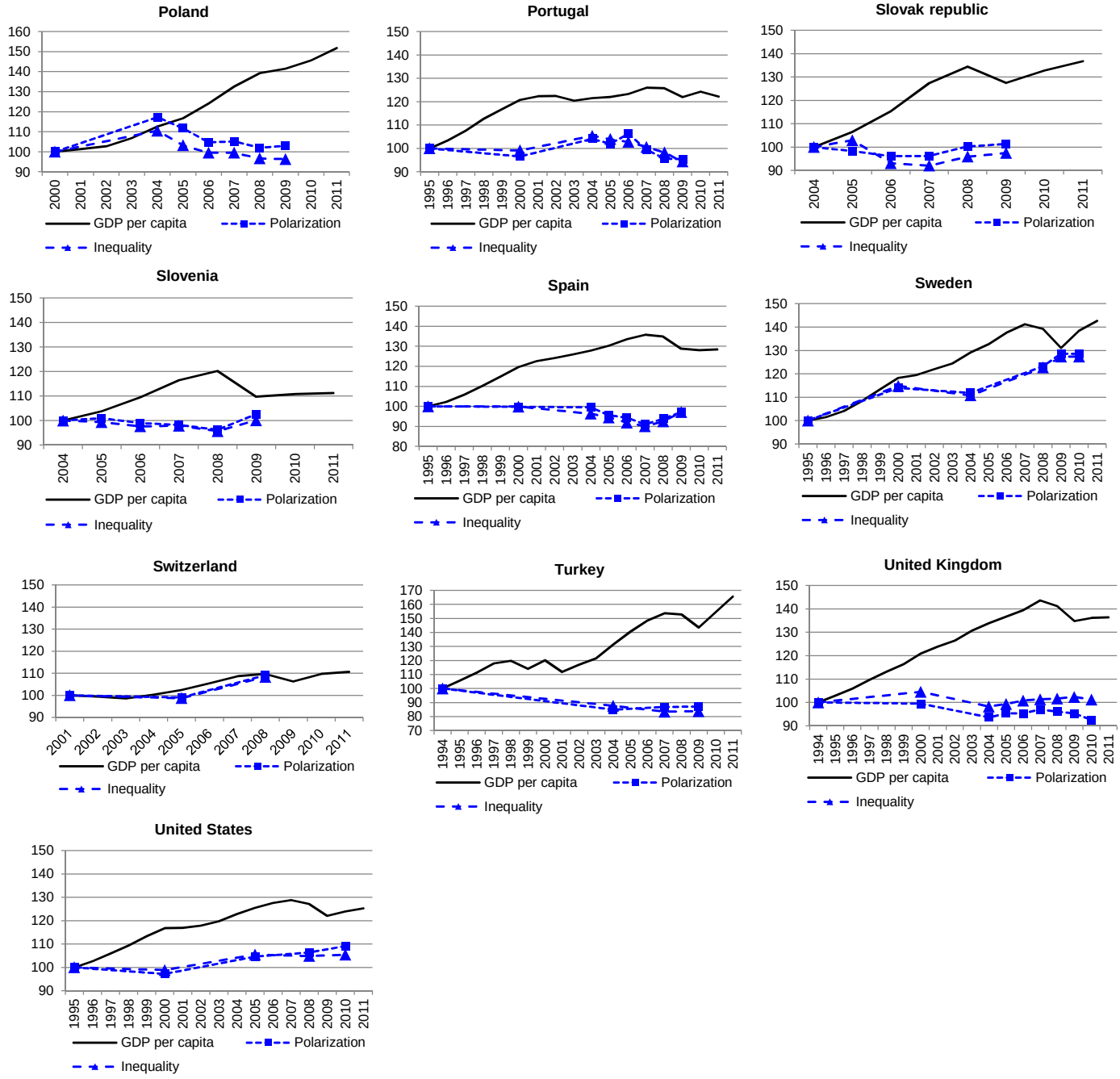
Figure 11. Trends in polarisation and inequality *(cont.)*



Note: Polarisation is measured by the Foster and Wolfson (2010) polarisation index calculated on household disposable incomes. See text for details. Inequality is measured by the Gini index coefficient for disposable income. In both cases, purchasing Power Parities (PPPs) are those for private consumption of households. For GDP per capita, PPPs are those for the GDP deflator.

Source: OECD calculations based on OECD National Accounts and Income Distribution Databases.

Figure 11. Trends in polarisation and inequality *(cont.)*

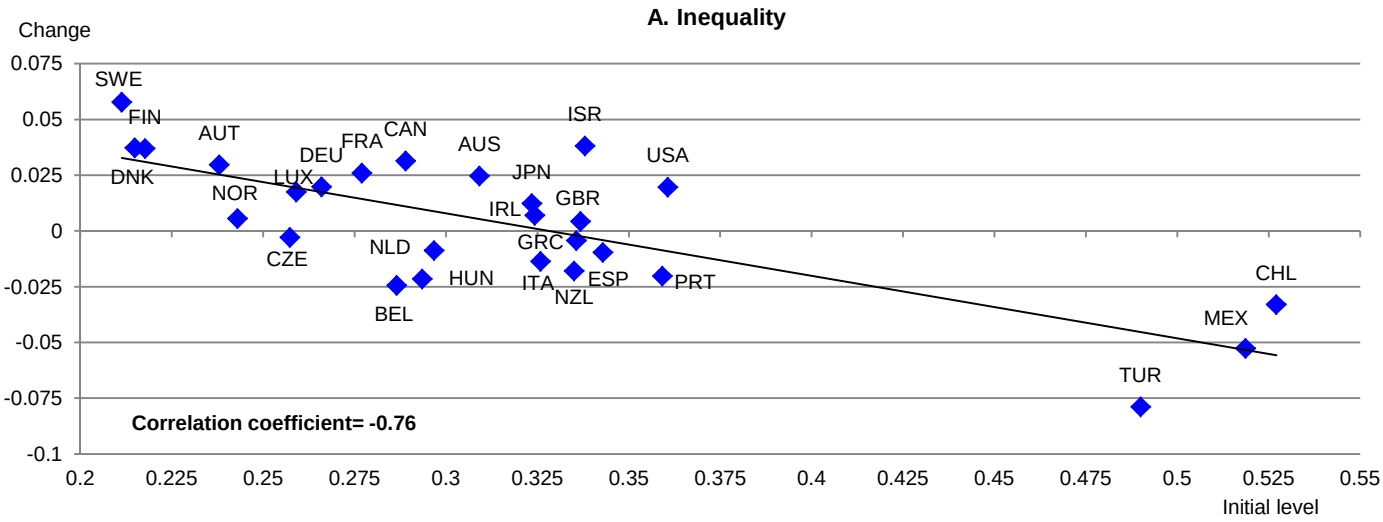


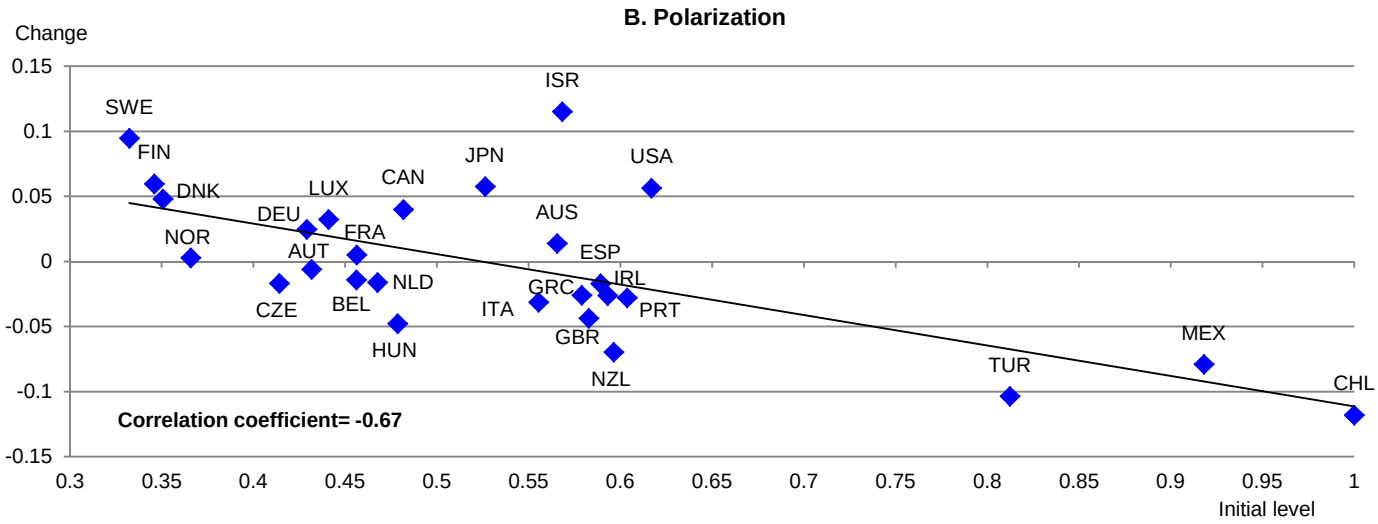
Note: Polarisation is measured by the Foster and Wolfson (2010) polarisation index calculated on household disposable incomes. See text for details. Inequality is measured by the Gini index coefficient for disposable income. In both cases, purchasing Power Parities (PPPs) are those for private consumption of households. For GDP per capita, PPPs are those for the GDP deflator.

Source: OECD calculations based on OECD National Accounts and Income Distribution Databases.

Figure 12. Inequality and polarisation, changes against initial levels: cross-country patterns

Mid 90s - late 2000s[1]





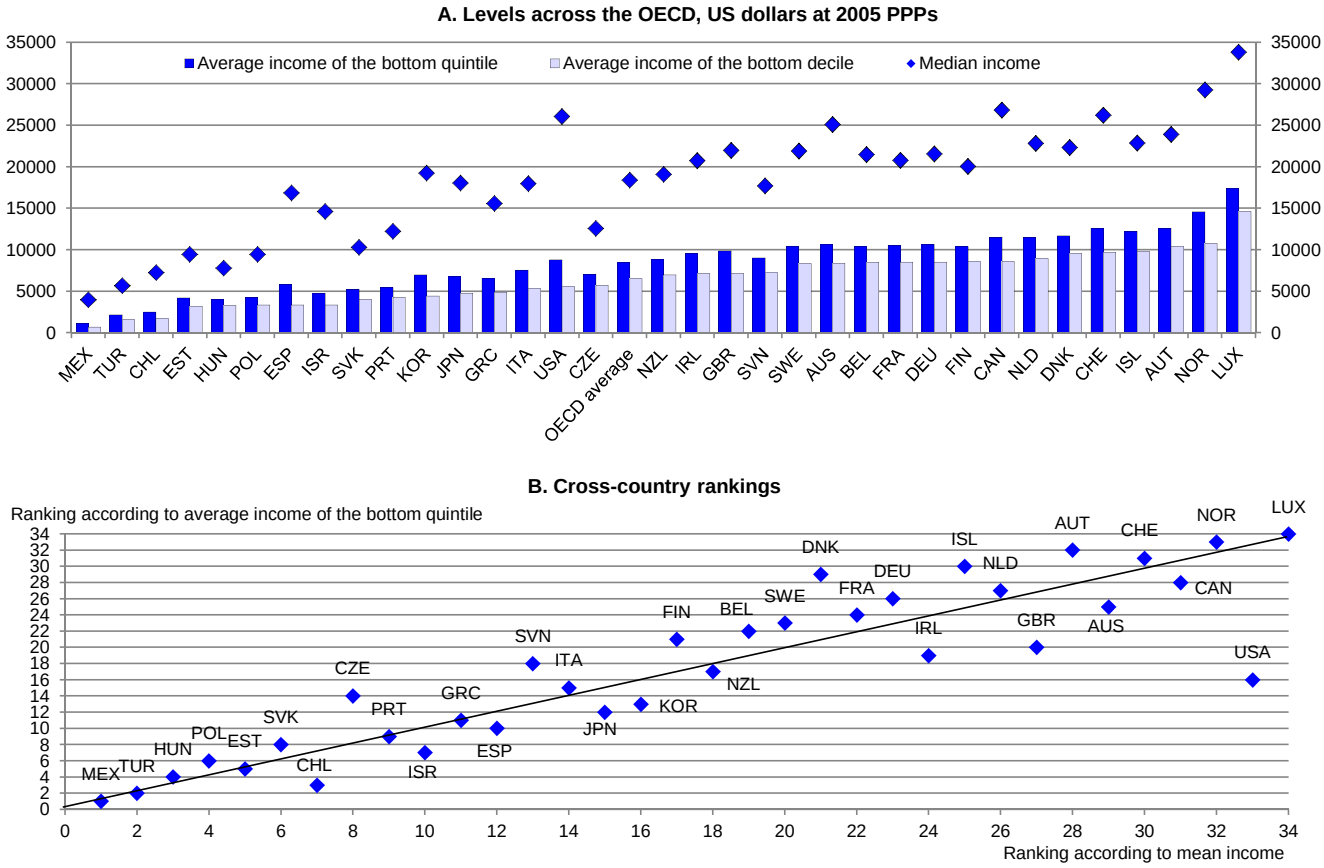
Note: Polarisation is measured by the Foster and Wolfson (2010) polarisation index calculated on household disposable incomes. The index has been scaled-up by a factor of 4 so as to simplify comparability with the Gini coefficient. Inequality is measured by the Gini index coefficient for disposable income. See text for details.

1. Mid 90s refer to 1995 except for Austria for which the data refer to 1993, for Czech Republic, France, Luxembourg and Chile for which the data refer to 1996, for Greece, Ireland, Mexico, Turkey and the United Kingdom for which the data refer to 1994. Late 2000s refer to 2009 except for Australia, Canada, Denmark, France, Germany, Israel, Mexico, the Netherlands, Norway, Sweden, the United Kingdom and the United States for which the last available observation is 2010, for Korea for which it is 2011.

Source: OECD Income Distribution Database.

Figure 13. Income levels for people at the bottom of the distribution

Late 2000s[1]

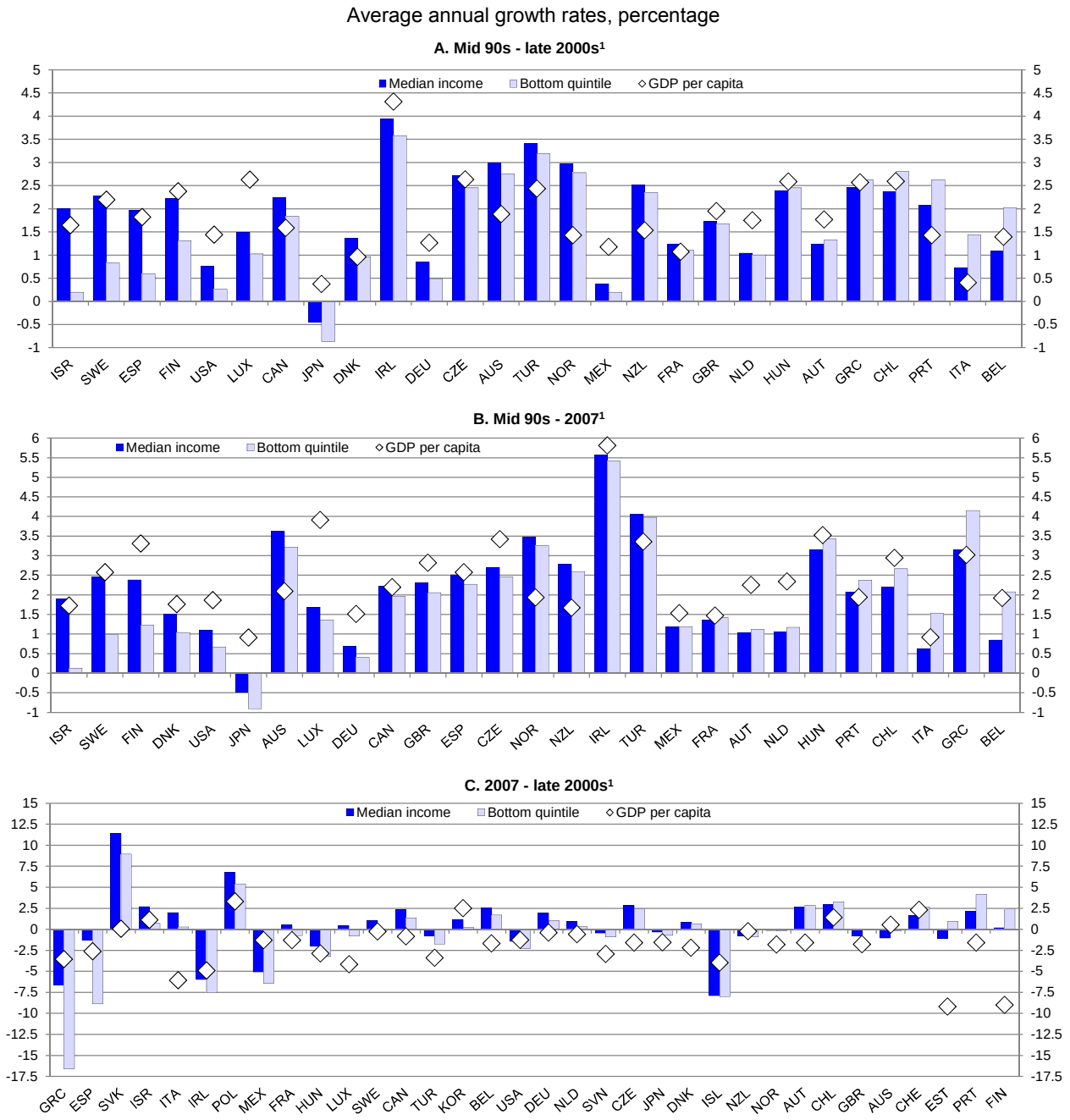


Note: In Panel A, the data refer to household disposable income of people at the bottom of the income distribution: the poorest 10% (first decile) and the poorest 20% (first quintile). The figure also displays the level of median household disposable income. Panel B compares cross-country rankings based on average income in the bottom decile compared to cross-country rankings based on mean income over the entire population of households. Purchasing Power Parities (PPPs) are those for private consumption of households.

1. Late 2000s refer to 2009 except for Australia, Canada, Denmark, France, Germany, Israel, Mexico, the Netherlands, Norway, Sweden, the United Kingdom and the United States for which the last available observation is 2010, for Korea for which it is 2011 and for Switzerland for which it is 2008.

Source: OECD calculations based on OECD National Accounts and Income Distribution Databases.

Figure 14. Real annual growth rates of GDP, median and bottom incomes across OECD countries

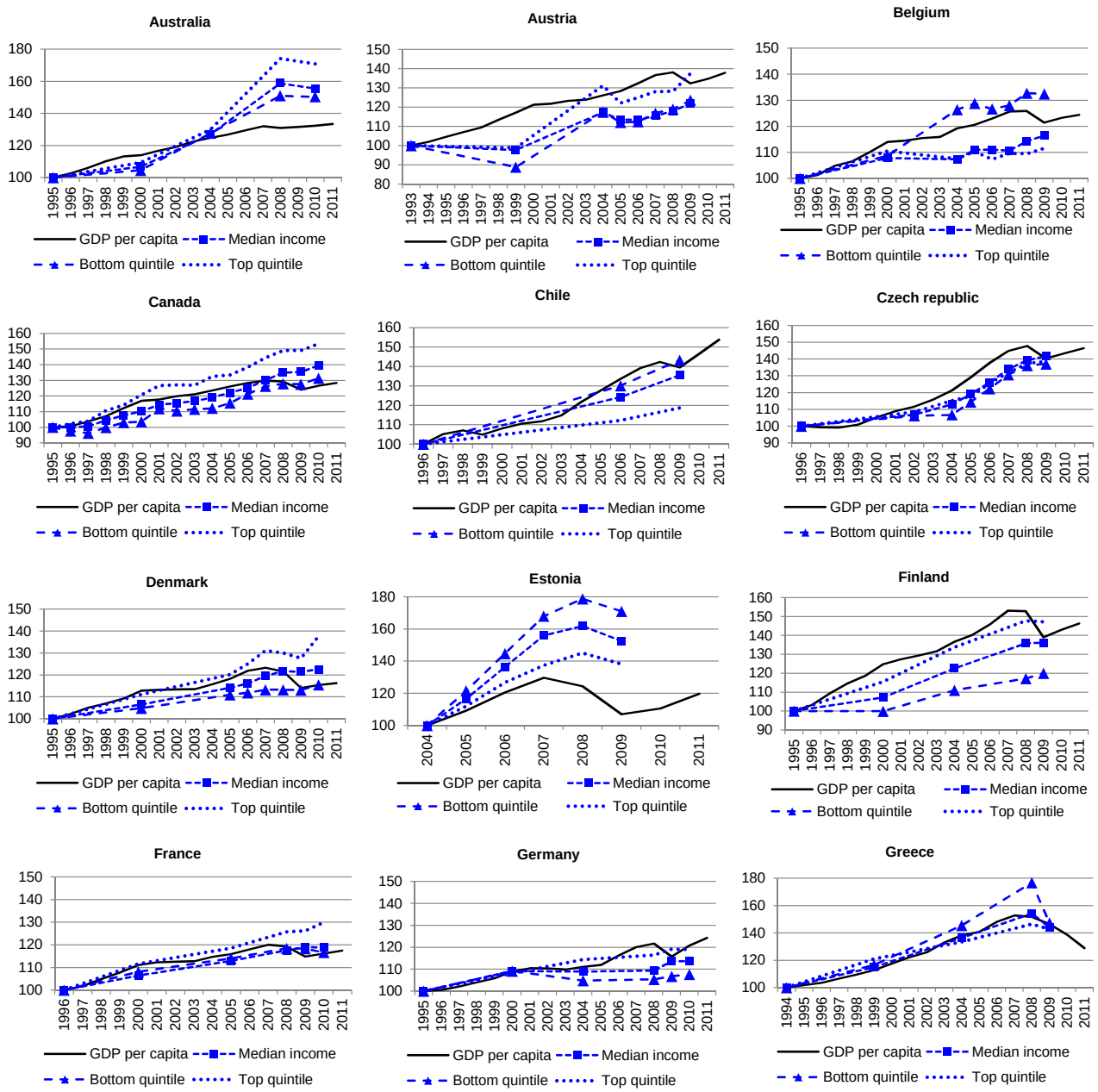


Note: For median and bottom quintile incomes, Purchasing Power Parities (PPPs) are those for private consumption of households. For GDP per capita, PPPs are those for the GDP deflator. Countries are sorted in ascending order according to the difference between the annual average growth rates of median versus bottom quintiles incomes.

1. Mid 90s refer to 1995 except for Austria for which the data refer to 1993, for Czech Republic, France, Luxembourg and Chile for which the data refer to 1996, for Greece, Ireland, Mexico, Turkey and the United Kingdom for which the data refer to 1994. Late 2000s refer to 2009 except for Australia, Canada, Denmark, France, Germany, Israel, Mexico, the Netherlands, Norway, Sweden, the United Kingdom and the United States for which the last available observation is 2010, for Korea for which it is 2011 and for Switzerland for which it is 2008.

Source: OECD calculations based on OECD National Accounts and Income Distribution Databases.

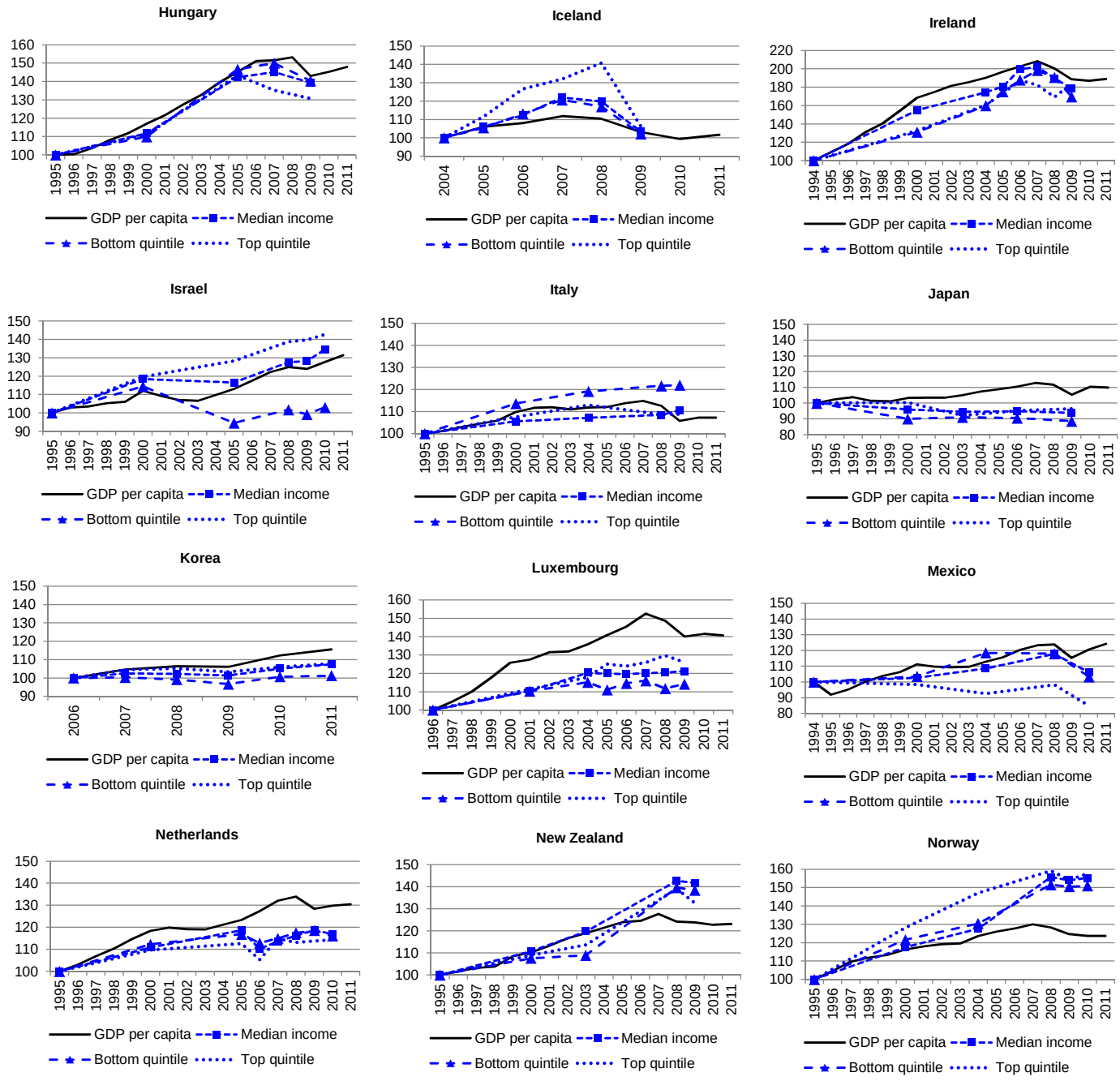
Figure 15. Trends in GDP and household incomes at different points of the distribution



Note: For median, top and bottom quintile incomes, Purchasing Power Parities (PPPs) are those for private consumption of households. For GDP per capita, PPPs are those for the GDP deflator.

Source: OECD calculations based on OECD National Accounts and Income Distribution Databases.

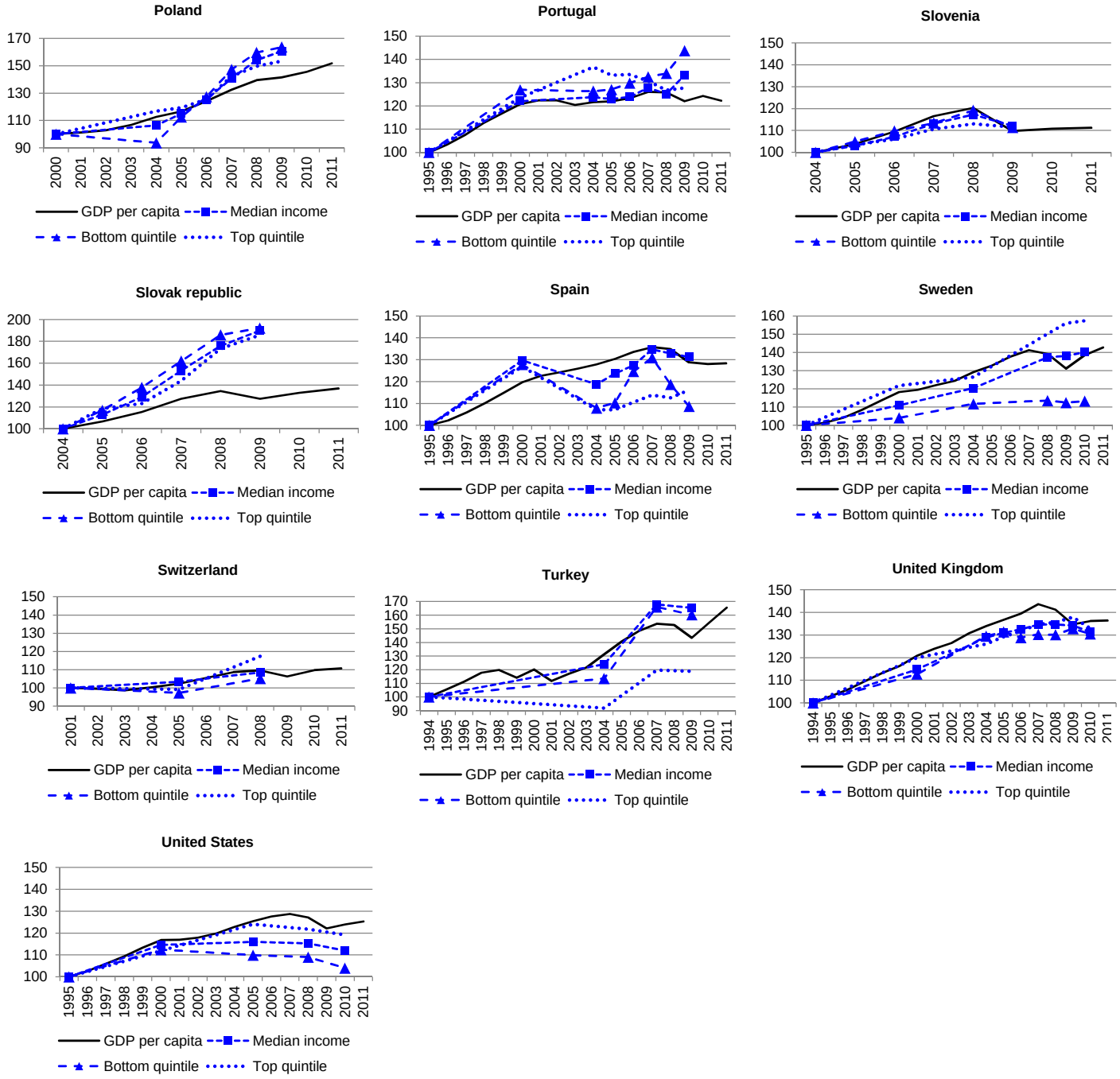
Figure 15. Trends in GDP and household incomes at different points of the distribution *(cont.)*



Note: For median, top and bottom quintile incomes, Purchasing Power Parities (PPPs) are those for private consumption of households. For GDP per capita, PPPs are those for the GDP deflator.

Source: OECD calculations based on OECD National Accounts and Income Distribution Databases.

Figure 15. Trends in GDP and household incomes at different points of the distribution *(cont.)*



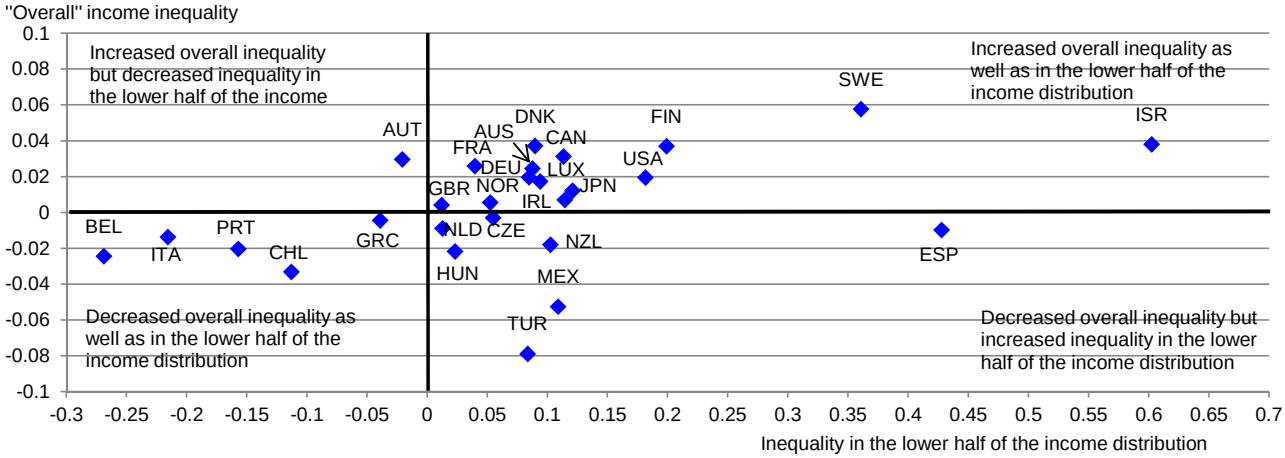
Note: For median, top and bottom quintile incomes, Purchasing Power Parities (PPPs) are those for private consumption of households. For GDP per capita, PPPs are those for the GDP deflator.

Source: OECD calculations based on OECD National Accounts and Income Distribution Databases.

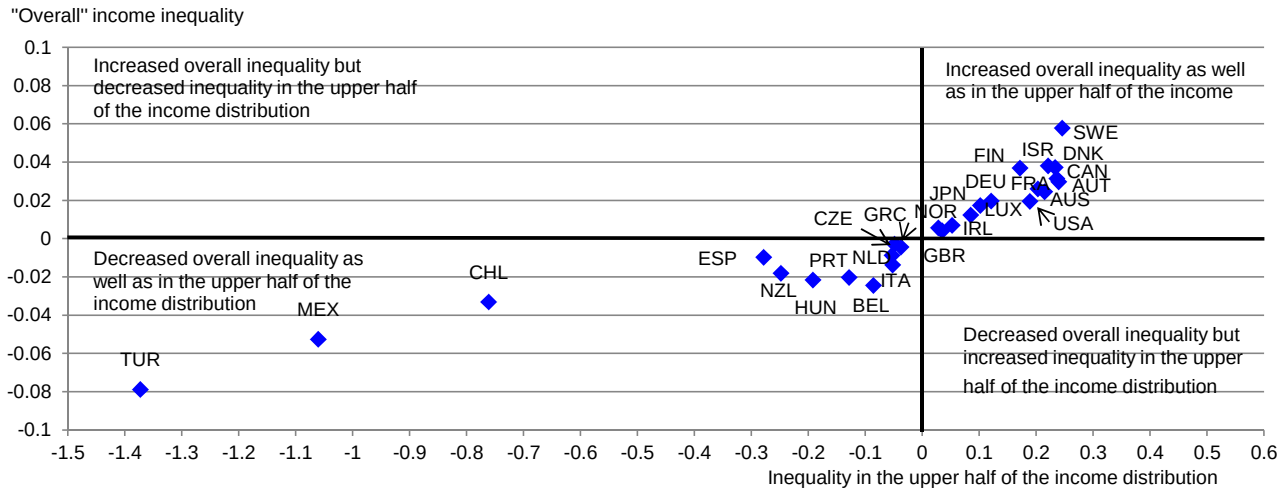
Figure 16. Overall income inequality and inequality within the two halves of income distribution

Mid 90s- late 2000s[1]

A. Developments in the lower half of the income distribution and in "overall" inequality



B. Developments in the upper half of the income distribution and in "overall" inequality



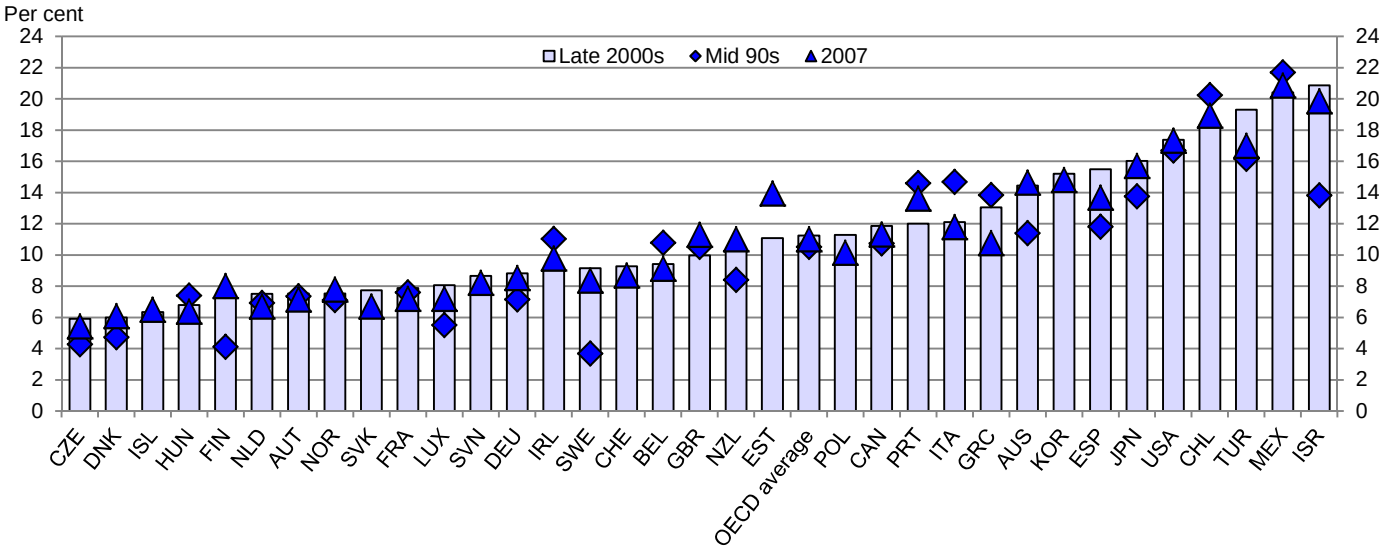
Note: "Overall" income inequality is measured by the Gini coefficient for household disposable income. Inequality in the lower half of the income distribution is measured by the ratio of mean income in the fifth decile to mean income in the bottom quintile while inequality in the upper half of the income distribution is measured by the ratio of mean income in the top quintile to mean income in the fifth decile.

1. Mid 90s refer to 1995 except for Austria for which the data refer to 1993, for Czech Republic, France, Luxembourg and Chile for which the data refer to 1996, for Greece, Ireland, Mexico, Turkey and the United Kingdom for which the data refer to 1994. Late 2000s refer to 2009 except for Australia, Canada, Denmark, France, Germany, Israel, Mexico, the Netherlands, Norway, Sweden, the United Kingdom and the United States for which the last available observation is 2010, for Korea for which it is 2011 and for Switzerland for which it is 2008.

Source: OECD Income Distribution Database.

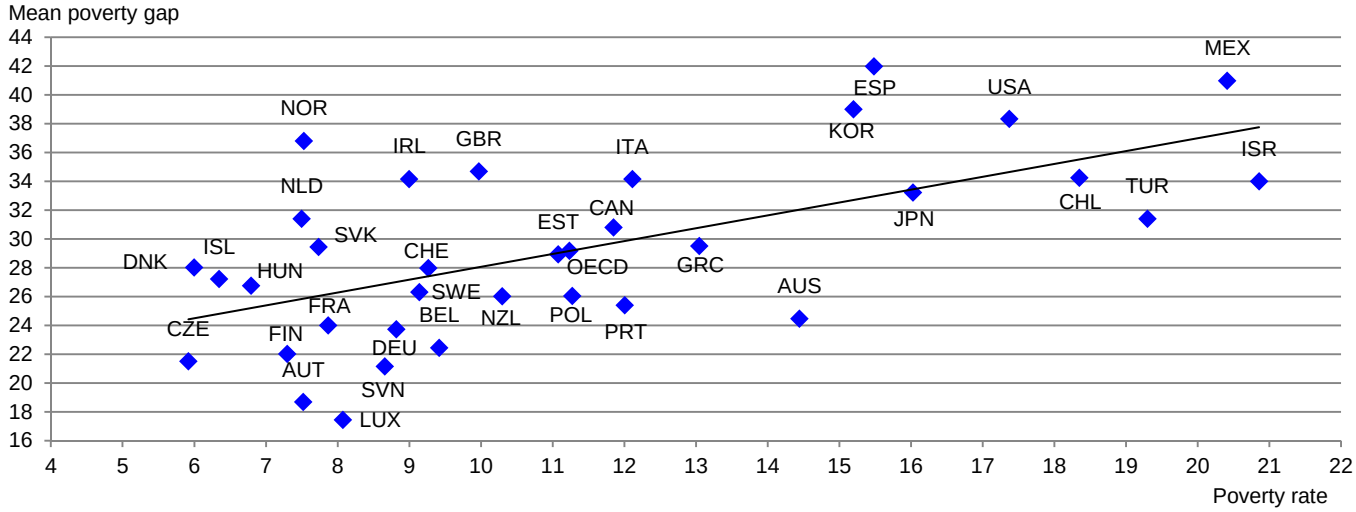
Figure 17. Relative poverty across OECD countries

A. Incidence of income poverty



B. Incidence and depth of income poverty

Late 2000s, per cent

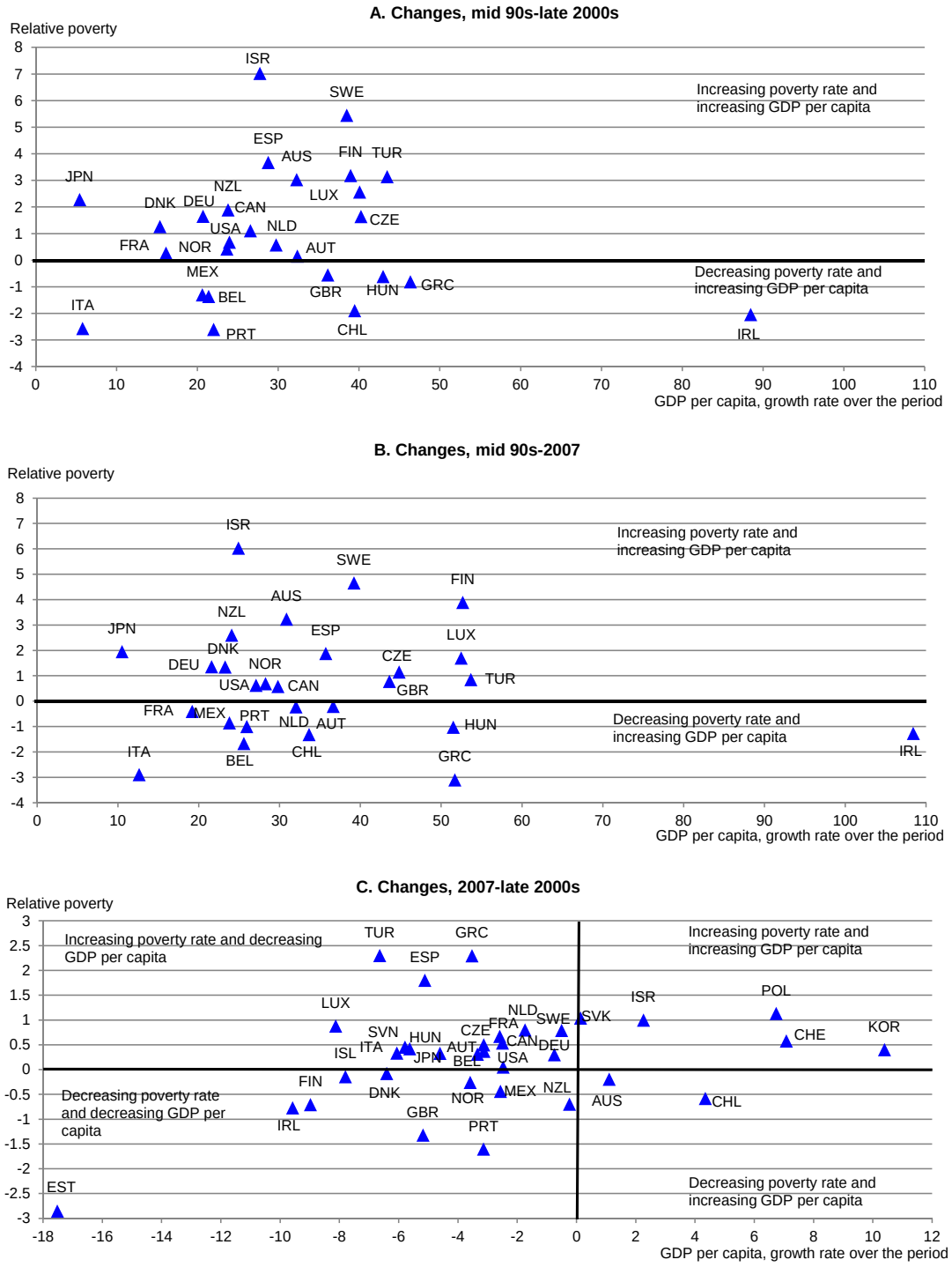


Note: Poverty rate and mean poverty gap after taxes and transfers with a poverty line at 50% of the median income. Relative poverty is defined as the share of individuals with equivalised disposable income less than 50% of the median for the entire population; poverty gap is calculated as the distance between the poverty threshold and the mean income of the poor, expressed as a percentage of the poverty threshold.

1. Mid 90s refer to 1995 except for Austria for which the data refer to 1993, for Czech Republic, France, Luxembourg and Chile for which the data refer to 1996, for Greece, Ireland, Mexico, Turkey and the United Kingdom for which the data refer to 1994. Late 2000s refer to 2009 except for Australia, Canada, Denmark, France, Germany, Israel, Mexico, the Netherlands, Norway, Sweden, the United Kingdom and the United States for which the last available observation is 2010, for Korea for which it is 2011 and for Switzerland for which it is 2008.

Source: OECD Income Distribution Database.

Figure 18. The evolution of relative poverty against that of GDP per capita[1]



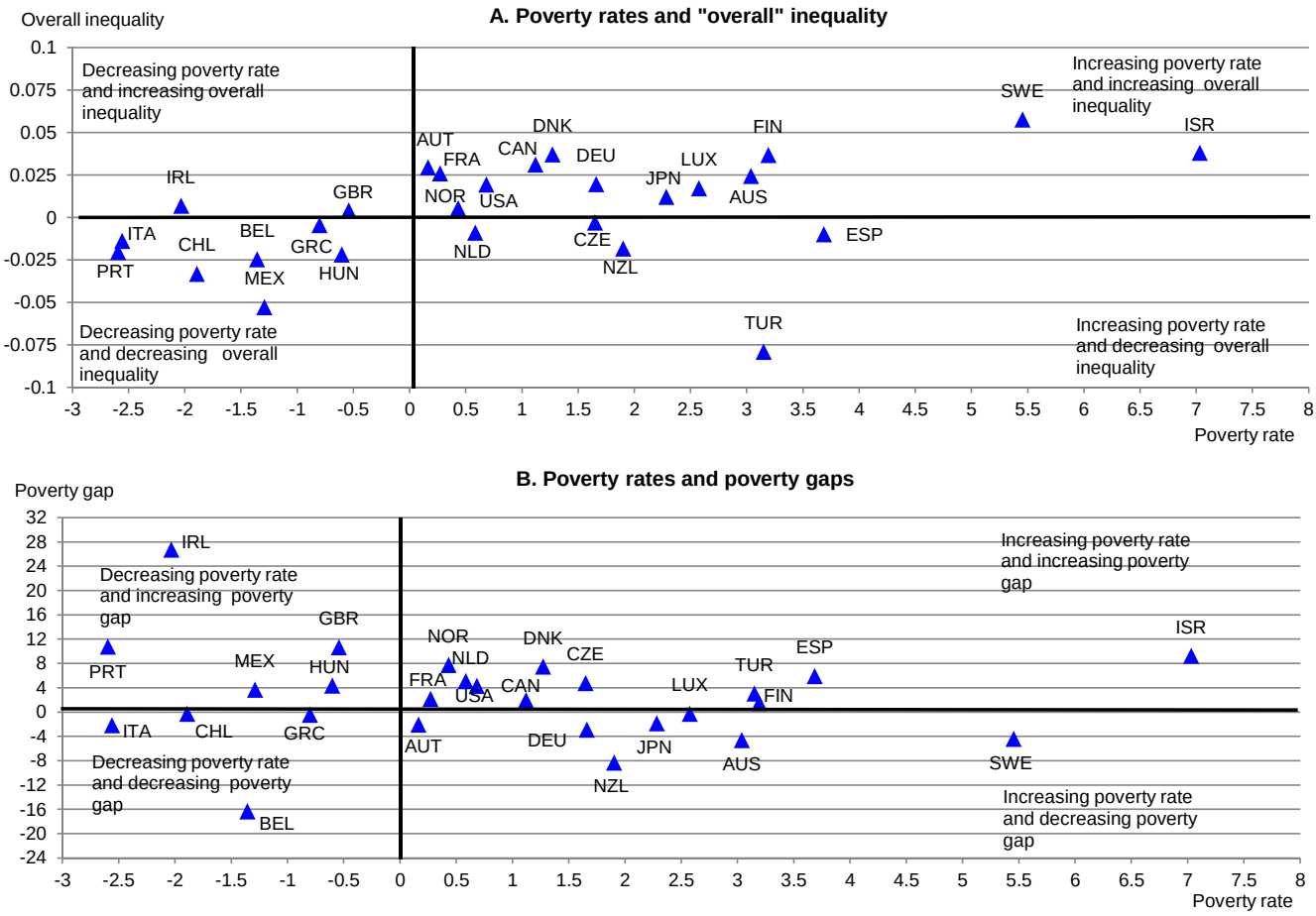
Note: Relative poverty is defined as the share of individuals with equivalised disposable income less than 50% of the median for the entire population.

1. Mid 90s refer to 1995 except for Austria for which the data refer to 1993, for Czech Republic, France, Luxembourg and Chile for which the data refer to 1996, for Greece, Ireland, Mexico, Turkey and the United Kingdom for which the data refer to 1994. Late 2000s refer to 2009 except for Australia, Canada, Denmark, France, Germany, Israel, Mexico, the Netherlands, Norway, Sweden, the United Kingdom and the United States for which the last available observation is 2010, for Korea for which it is 2011.

Source: OECD Income Distribution Database.

Figure 19. Relative poverty, "overall" inequality and poverty gaps

Changes, mid 90s - late 2000s[1]



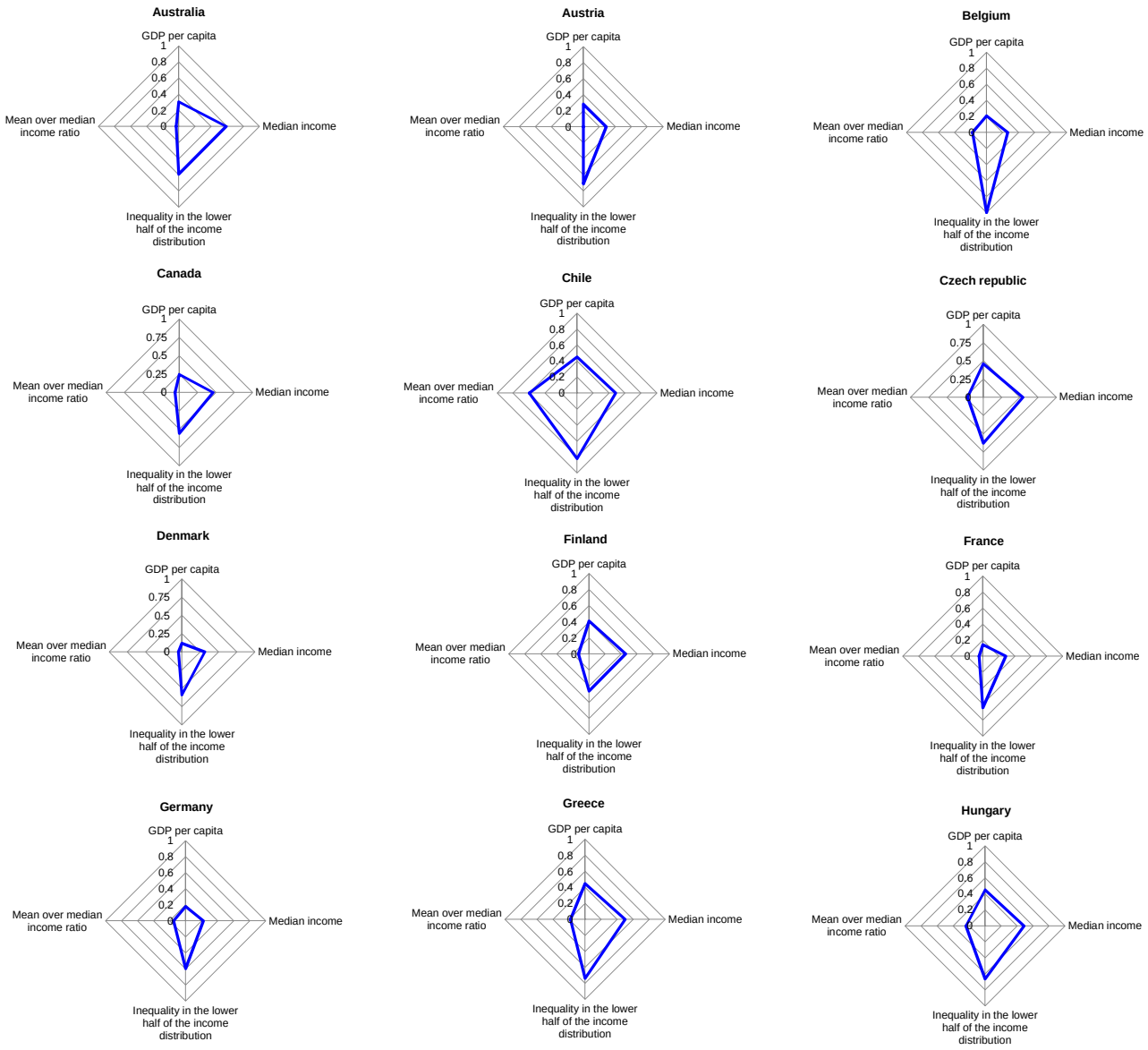
Note: Relative poverty is defined as the share of individuals with equivalised disposable income less than 50% of the median for the entire population while the poverty gap is calculated as the distance between the poverty threshold and the mean income of the poor, expressed as a percentage of the poverty threshold. "Overall" income inequality is measured by the Gini coefficient for household disposable income.

1. Mid 90s refer to 1995 except for Austria for which the data refer to 1993, for Czech Republic, France, Luxembourg and Chile for which the data refer to 1996, for Greece, Ireland, Mexico, Turkey and the United Kingdom for which the data refer to 1994. Late 2000s refer to 2009 except for Australia, Canada, Denmark, France, Germany, Israel, Mexico, the Netherlands, Norway, Sweden, the United Kingdom and the United States for which the last available observation is 2010, for Korea for which it is 2011.

Source: OECD Income Distribution Database.

Figure 20. Wrapping-up: country profiles on the basis of relative developments - Normalised indicators

Evolution over the period mid 90s-late 2000s[1]

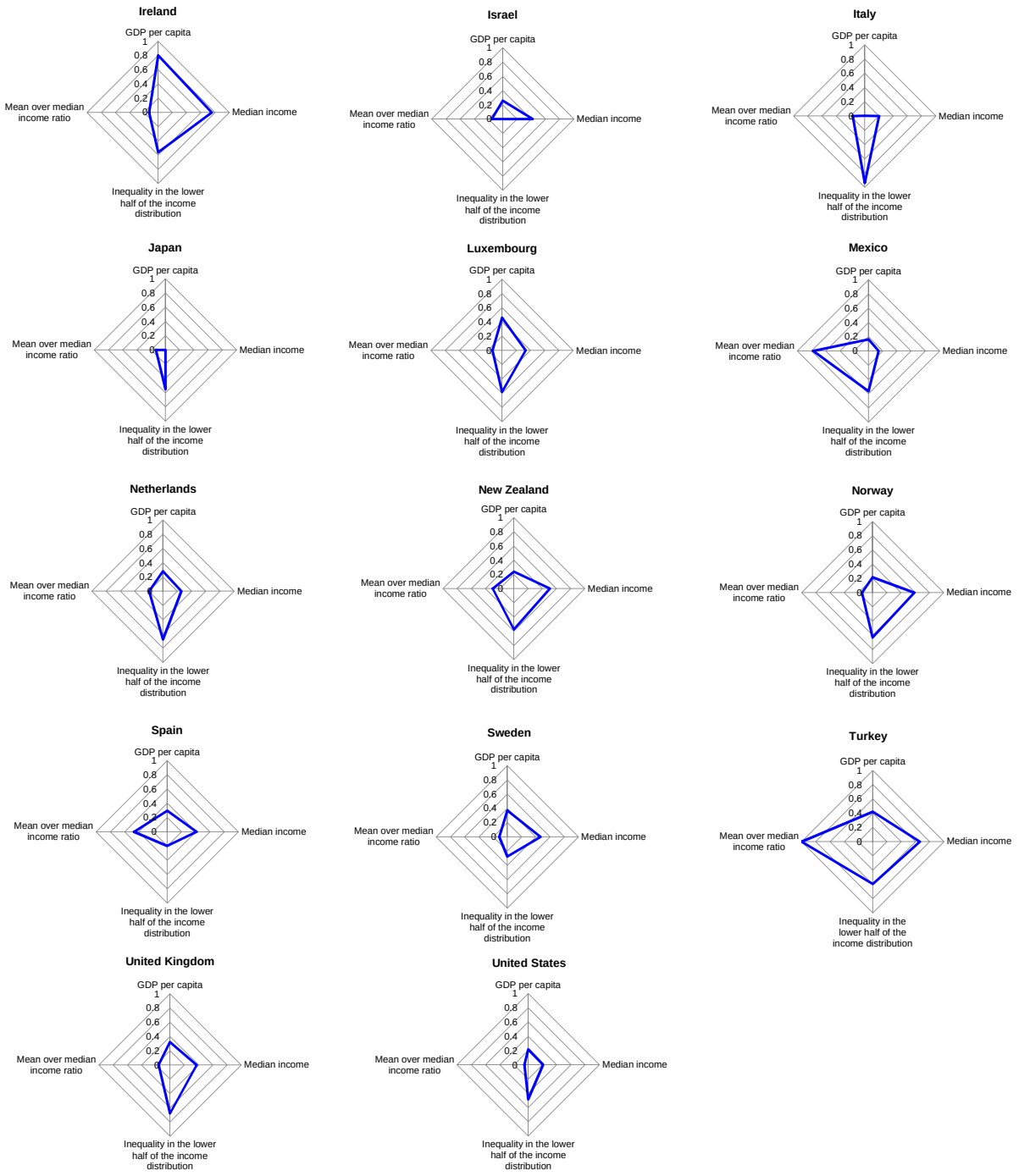


Note: See tables 1 and 6 and text for the definition of normalised indicators. Higher values of normalised indicators signal more desirable outcomes in terms of growth and the income distribution, i.e. stronger growth in GDP or in household incomes on the one hand, declines in income inequality on the other.

Source: OECD calculations based on OECD National Accounts and Income Distribution Databases.

Figure 20. Wrapping-up: country profiles on the basis of relative developments - Normalised indicators *(cont.)*

Evolution over the period mid 90s-late 2000s[1]



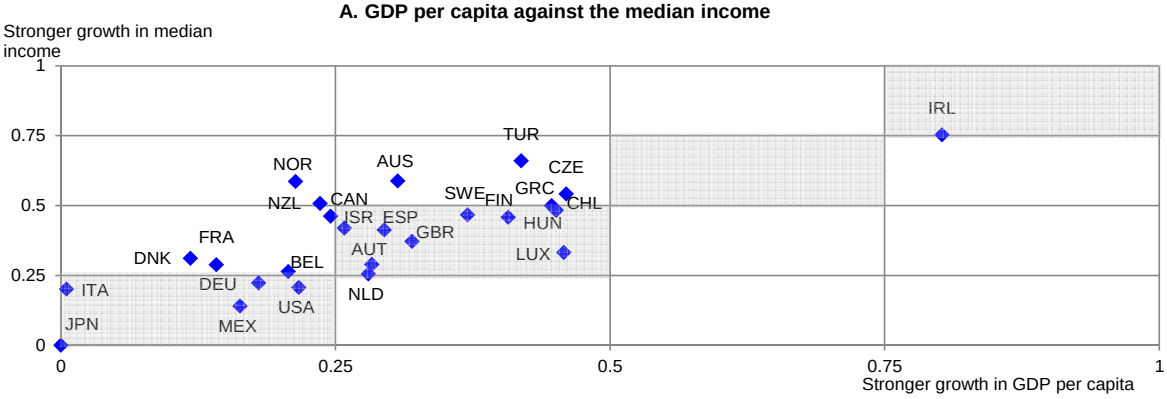
Note: See tables 1 and 6 and text for the definition of normalised indicators. Higher values of normalised indicators signal more desirable outcomes in terms of growth and the income distribution, i.e. stronger growth in GDP or in household incomes on the one hand, declines in income inequality on the other.

Source: OECD calculations based on OECD National Accounts and Income Distribution Databases.

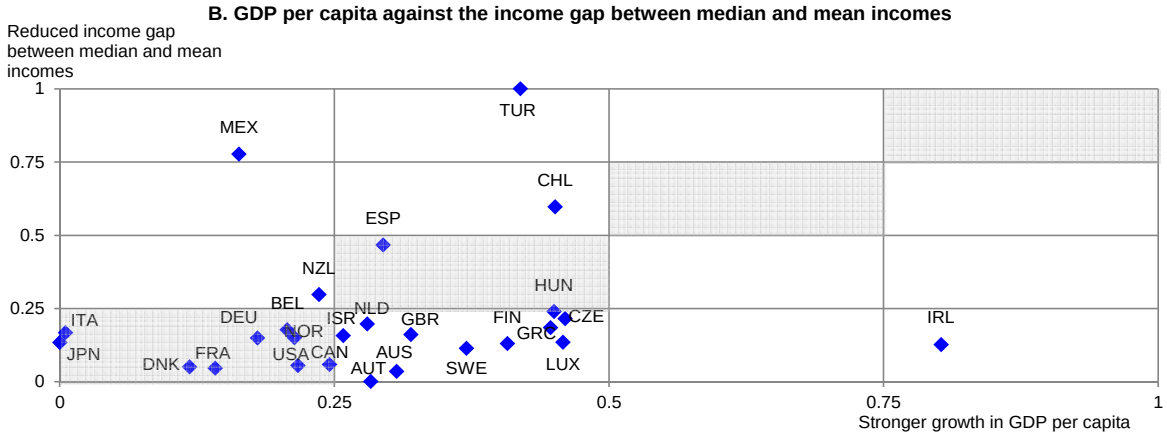
Figure 21. Wrapping-up: identifying country groups on the basis of relative developments - Normalised indicators

Evolution over the period mid 90s-late 2000s[1]

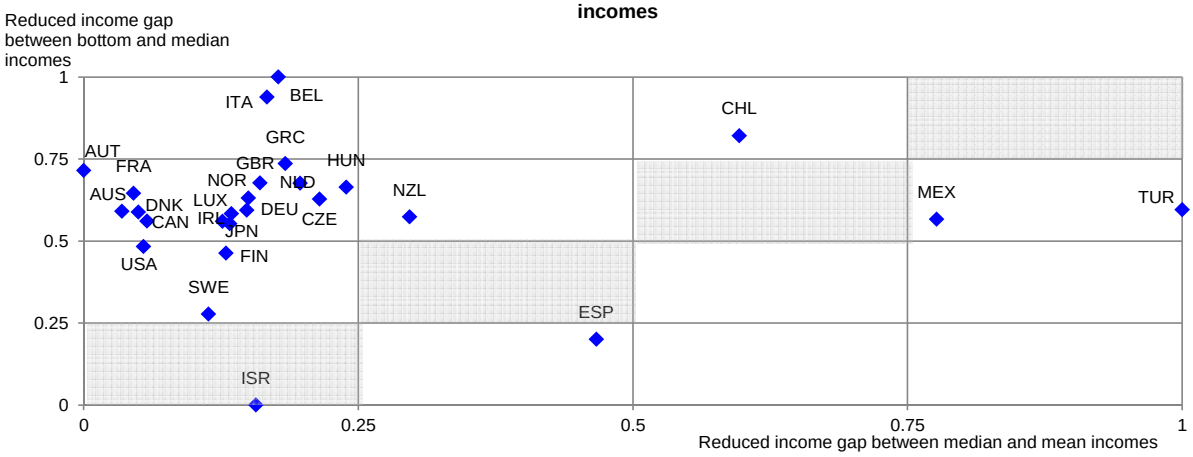
A. GDP per capita against the median income



B. GDP per capita against the income gap between median and mean incomes



C. The income gap between median and mean incomes against that between bottom and median incomes



Note: See tables 1 and 6 and text for the definition of normalised indicators. Higher values of normalised indicators signal more desirable outcomes in terms of growth and the income distribution, i.e. stronger growth in GDP or in household incomes on the one hand, declines in income inequality on the other. For example, Panel B shows that Ireland's performance was stronger than the rest of the OECD in terms of GDP growth but weaker than the rest of the OECD in terms of the income gap between median and mean incomes.

Source: OECD calculations based on OECD National Accounts and Income Distribution Databases.

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APPENDIX: FROM MACRO TO MICRO DATA SOURCES

46. The analysis presented in this paper draws on two data sources for measuring households' disposable incomes: *i*) the System of national accounts (SNA); and *ii*) the *OECD Income distribution database*. At the macro level, the SNA provides aggregate data on incomes, consumption and wealth of the household sector under household disposable income, expressed on per capita basis. Evidently, this only gives a picture of the average. Therefore, one needs to turn to micro sources for looking at more representative groups of population and at specific parts of the income distribution. A number of issues arise when moving from one source to the other, implying differences between the associated estimates of households' incomes, which make direct comparison difficult. To illustrate these differences, Figure 5 in the main text presents survey-based mean household disposable income as a share of SNA-based mean adjusted disposable income. The two measures have evolved differently for a number of countries, which is illustrated in Figure 1 (panel A). For instance, in Spain, United States and the Netherlands the SNA measure has evolved more favourably than the survey one, when looking at the end-point difference, while in Slovakia, Poland and Sweden households have done better when measured by the survey than by the SNA. This appendix provides a summary of the main sources of differences between the two measures of household income.

47. Firstly, micro and macro sources have different objectives, coverage and data sources. Here are some of the main elements and their implications:

- *The scope of the reference population.* SNA refers to the resident population as derived from population censuses while surveys refer to private households (*i.e*. they exclude persons living in institutions) and often do not take all the territory into account (for example overseas territories are excluded for France). In addition, cross-country differences in weighting methods may impact on the population estimates provided by surveys relative to population censuses. On average, across the 19 OECD countries for which information is currently available, the population estimates used in household surveys are close to 98% of their national account counterpart, but lower in Austria and New Zealand (93%).

- *The scope of the household sector.* SNA data available at the international level for the household sector include non-profit institutions serving households (NPISH), while household surveys do not. Across the 13 OECD countries for which information is available[47], these non-profit institutions typically account for around 0.2 per cent of household adjusted disposable income as measured in the national accounts.

- *The definition of income components.* SNA household income includes several non-cash components — such as income imputed for in-kind public services (such as e.g. health and education), for owner-occupied housing and for some types of financial assets — that surveys generally exclude.[48] Conversely, benefits from some retirement schemes are not included in household income in the SNA while they are in surveys. Also, measures of self-employment

47. The breakdown into households and non-profit institutions serving households, *i.e.* categories S14 and S15 respectively, is not available for the following countries: Australia, Austria, Canada, Chile, Denmark, Germany, Israel, Korea, Luxembourg, Switzerland, the United Kingdom and South Africa. Subsequently, the analysis uses a measure that includes both of the sectors.

48. While almost two-third of OECD countries provide some estimates of non-cash income components such as imputed rents, the high heterogeneity in the methodology applied for deriving such figures makes them unsuited to cross-country comparisons. These items are therefore excluded from the OECD database.

income may differ between the two sources. This is because of the impact of depreciation allowances and of inventory accounting in the "tax" definition of self-employment income used in household surveys. Such issue may be especially important for countries where unincorporated enterprises are widespread.

- *The frequency of surveys.* While annual surveys exist in several OECD countries, there are exceptions. So far the *OECD Income distribution database* did not contain yearly data, but it will move to annual reporting and collection. Also, income may be measured over different time periods (e.g. weeks, months, fiscal and calendar years).

- *Survey non-response.* Household surveys are affected by non-response, which is not random along the income distribution as it increases with the level of income (Deaton, 2005). This means that household surveys generally fail to measure and track top incomes, while they can also have some difficulty reaching the poorest. Moreover, non-response rates vary across countries. For example, in the 2008 EU SILC, the non-response rate exceeded 30% in Belgium, Denmark, Luxembourg and Norway, while it stood below 10% in Portugal, and the Slovak Republic (Atkinson and Marlier, 2010).

48. Secondly, while macro-based estimates of household incomes are usually measured on a per capita basis, micro-based estimates refer to the concept of "equivalised" (or "per consumption unit'') household disposable income. The notion of "equivalisation" implies that the income attributed to each person in a household reflects income sharing within the household and adjusts for household needs. It is assumed that these needs increase with household size, but less than proportionally. A number of "scales" exist for such adjustment. In this analysis, total household income is divided by the square root of household size.

49. The decline in household size has been a common trend across OECD countries (with the exception of Luxembourg). This, all else being equal, implies that as household shrinks, economies of scale are lost, in particular when the fall in size reflects a higher rate of separations among parents. At the same time, given the fall in fertility rates in many countries, couples have less children or stay childless, which raises their equivalence-weighted incomes. Since the mid-1990s, major changes in household size were observed in Japan, Turkey, Mexico, Spain and Hungary, with declines between 12 and 17%. For the rest of OECD countries, household sizes shrunk by 10% or less. The impact of changing demography and living arrangements on distribution of household income has been examined in Chapter 2 of *Growing Unequal* (OECD, 2008).

50. As explained above, micro and macro-based income measures refer to different income concepts. In particular, macro-based estimates impute several income components while micro-based data are defined on a cash basis. Reflecting this difference and following standard practice such as *e.g.* Chapter 1 in *How's Life* (OECD, 2011), this paper uses different price deflation procedures for the two sources:

- SNA-based current households' incomes in local currency are deflated with the deflator for actual individual consumption and converted to USD using 2005 power purchasing parities (PPP) for actual individual consumption. These PPPs cover all households' consumption expenditure and part of government final expenditure — services it supplies to individual households, for example housing, health, education, social protection etc. — but do not include government final expenditure on those services supplied collectively such as defense, police, environmental protection etc.

- Micro-based current households' incomes in local currency are deflated with the deflator of final consumption expenditure of households and then converted to USD using 2005 PPPs for private consumption of households.[49]

51. It is important to gauge the implications from using these different price adjustment procedures. A comparison between deflators and PPPs shows only small differences, with the ratio of the former ranging from 0.89 to 1.04 and that of the latter from 0.84 to 1.12. Another way to analyse the implications of this differential price adjustment is by comparing Panels A and B of Figure 2. Panel A displays the evolution of macro-based mean household income against that of micro-based mean household incomes using the baseline price adjustment procedures adopted in the paper (and described above). Panel B displays the same evolution but calculated in current local currency terms instead. The country-specific comparisons between the two panels suggest that factors other than price developments (*i.e*. the conceptual and measurement issues outlined above) play a far more important role in explaining differences in trends between micro and macro-based households' incomes. Assessing the individual contribution of the respective measurement and conceptual issues to these differences is beyond the scope of this paper.

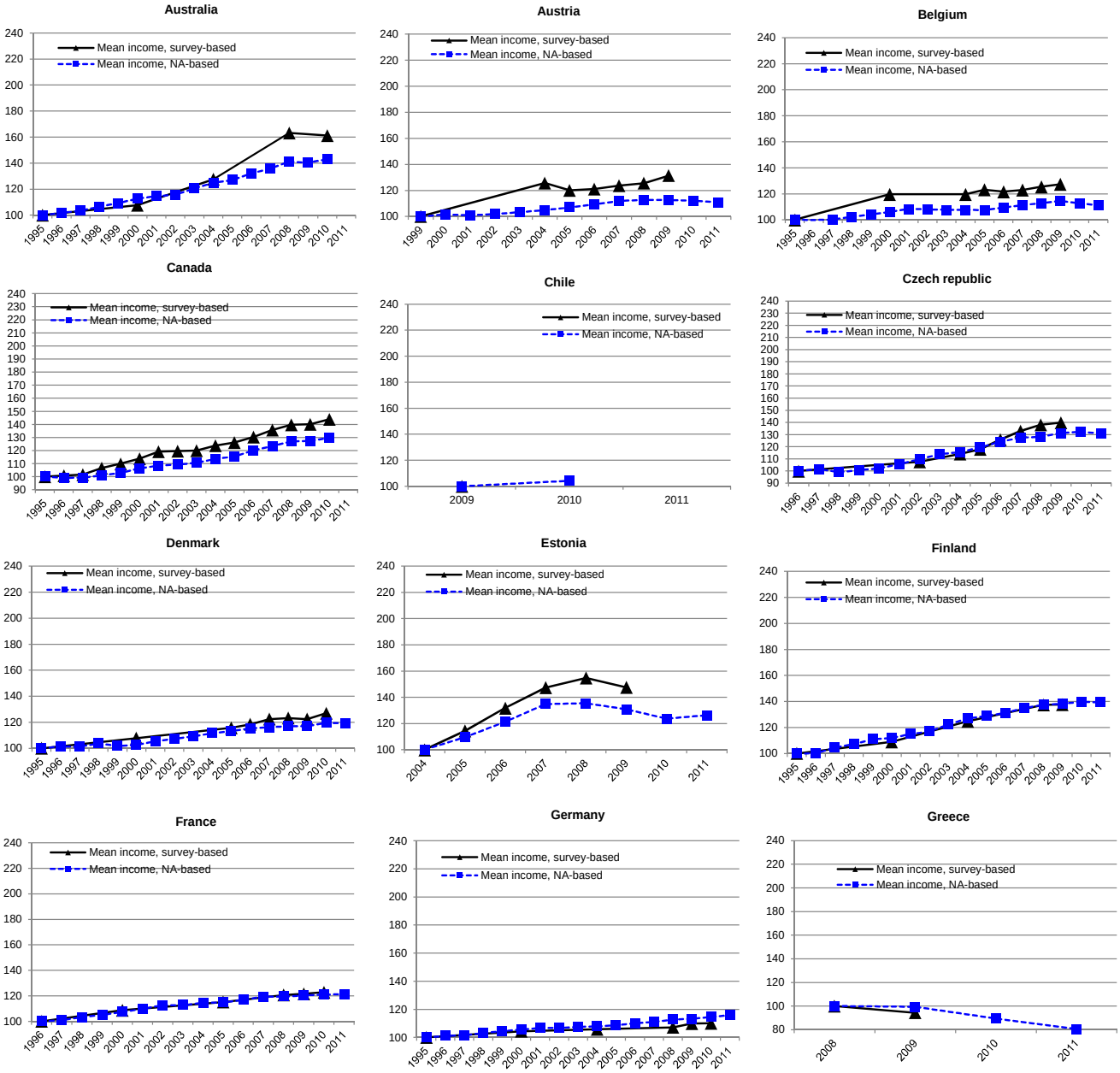
52. Given the divergence in the pace of average income growth and levels between macro and micro estimates of household incomes, there has been an on-going international effort to produce statistical methods and disaggregated global data to take into account individual household situations in the SNA (Moati and Rochefort, 2008). Two international projects have been launched in 2011 in this vein. The OECD/ Eurostat EG DNA (Expert Group on Disparities in a National Account framework) project covering 16 countries (Australia, France, Germany, Italy, Israel, Japan, Korea, Mexico, Netherlands, New Zealand, Portugal, Slovenia, Sweden, Switzerland, Turkey, United States) and a similar effort at the EU level, the Eurostat "A minima exercise" covering 27 EU countries. The aim of the OECD Expert Group work has been to develop indicators that measure disparities among household groups in the SNA framework and the first results of this work will be published in the second half of this year.

49. The procedure is in fact more complex for micro-based data. The OECD Income distribution and poverty database provides the data in local currencies in real terms and different base years depending on country-specific last-available year of survey. These data need therefore first conversion into nominal values by using country-specific CPIs and then they are deflated with the deflator of final consumption expenditure of households (with 2005 base year) and converted to USD using 2005 PPPs for private consumption of households.

Figure A1. Developments of household disposable incomes across OECD countries

Comparing macro and micro variables using different price adjustments

A. Constant prices

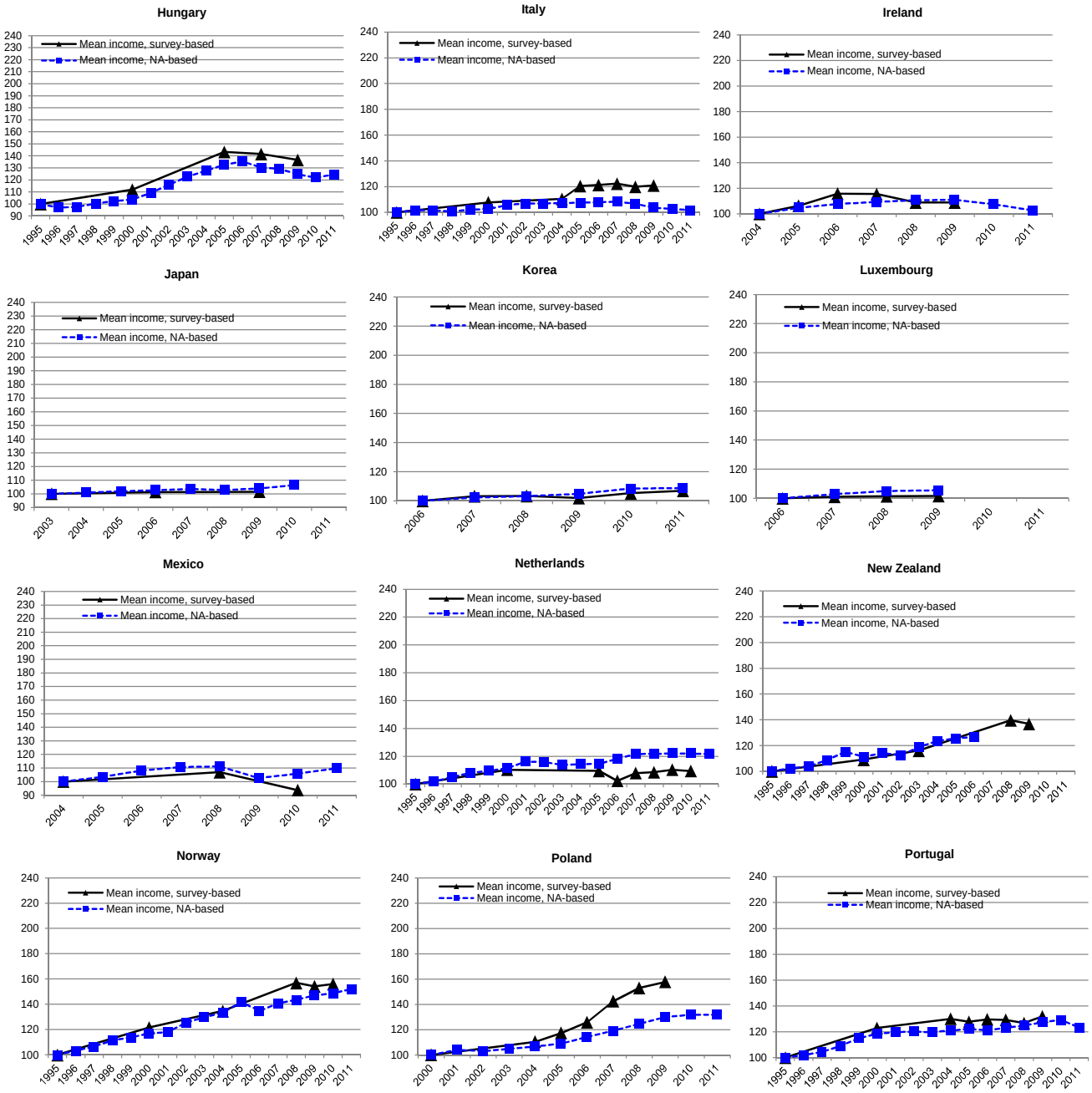


Note: For each country, panel A presents the evolution of mean household income (survey-based) and mean household adjusted disposable income (NA-based) using different PPPs and deflators, as described in the text.

Figure A1. Developments of household disposable incomes across OECD countries

Comparing macro and micro variables using different price adjustments

A. Constant prices *(cont.)*

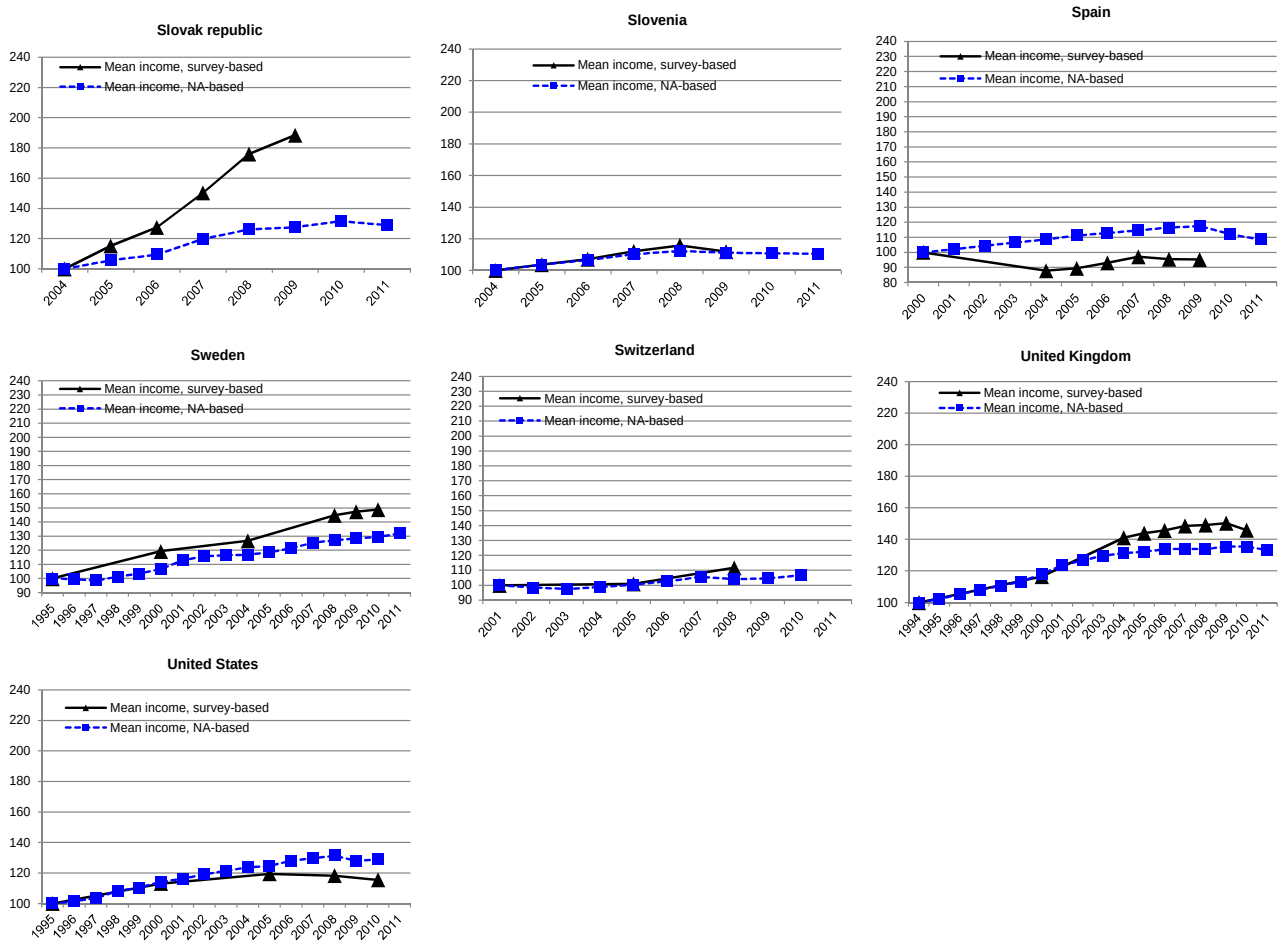


Note: For each country, panel A presents the evolution of mean household income (survey-based) and mean household adjusted disposable income (NA-based) using different PPPs and deflators, as described in the text.

Figure A1. Developments of household disposable incomes across OECD countries

Comparing macro and micro variables using different price adjustments

A. Constant prices *(cont.)*

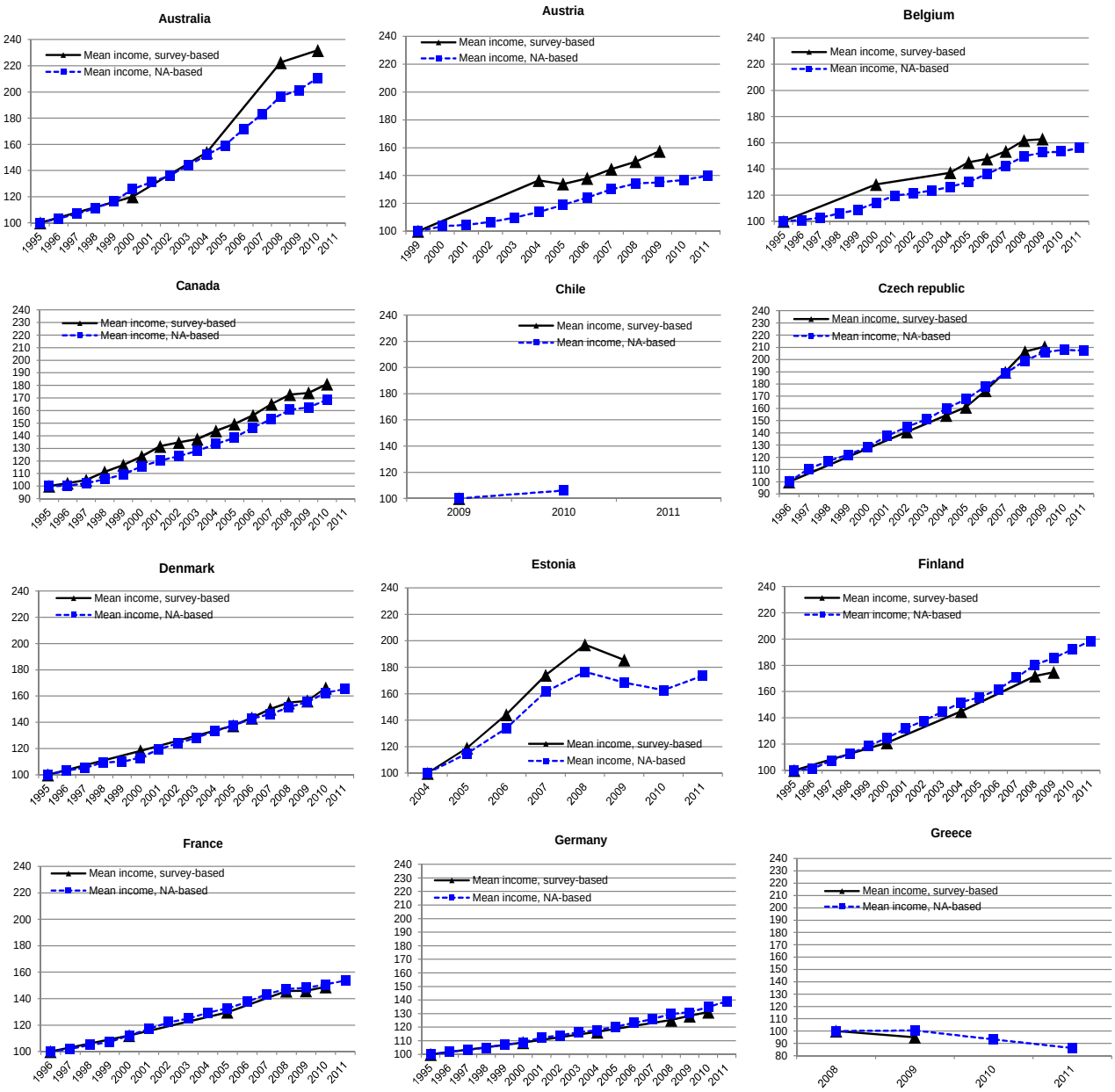


Note: For each country, panel A presents the evolution of mean household income (survey-based) and mean household adjusted disposable income (NA-based) using different PPPs and deflators, as described in the text.

Figure A1. Developments of household disposable incomes across OECD countries

Comparing macro and micro variables using different price adjustments

B. Current prices

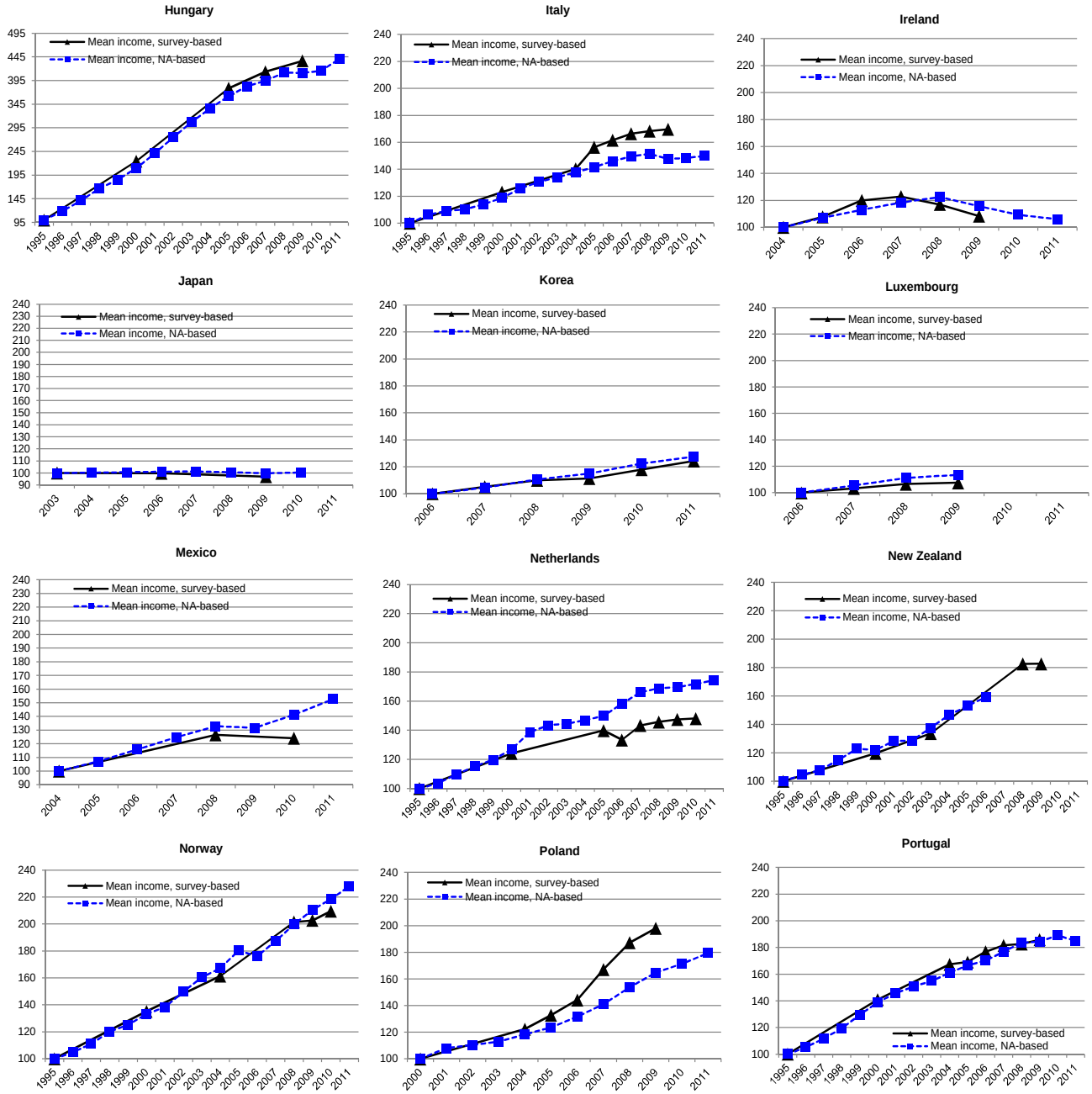


Note: For each country, panel B presents the evolution of mean household income (survey-based) and mean household adjusted disposable income (NA-based) in local currency terms.

Figure A1. Developments of household disposable incomes across OECD countries

Comparing macro and micro variables using different price adjustments

B. Current prices *(cont.)*

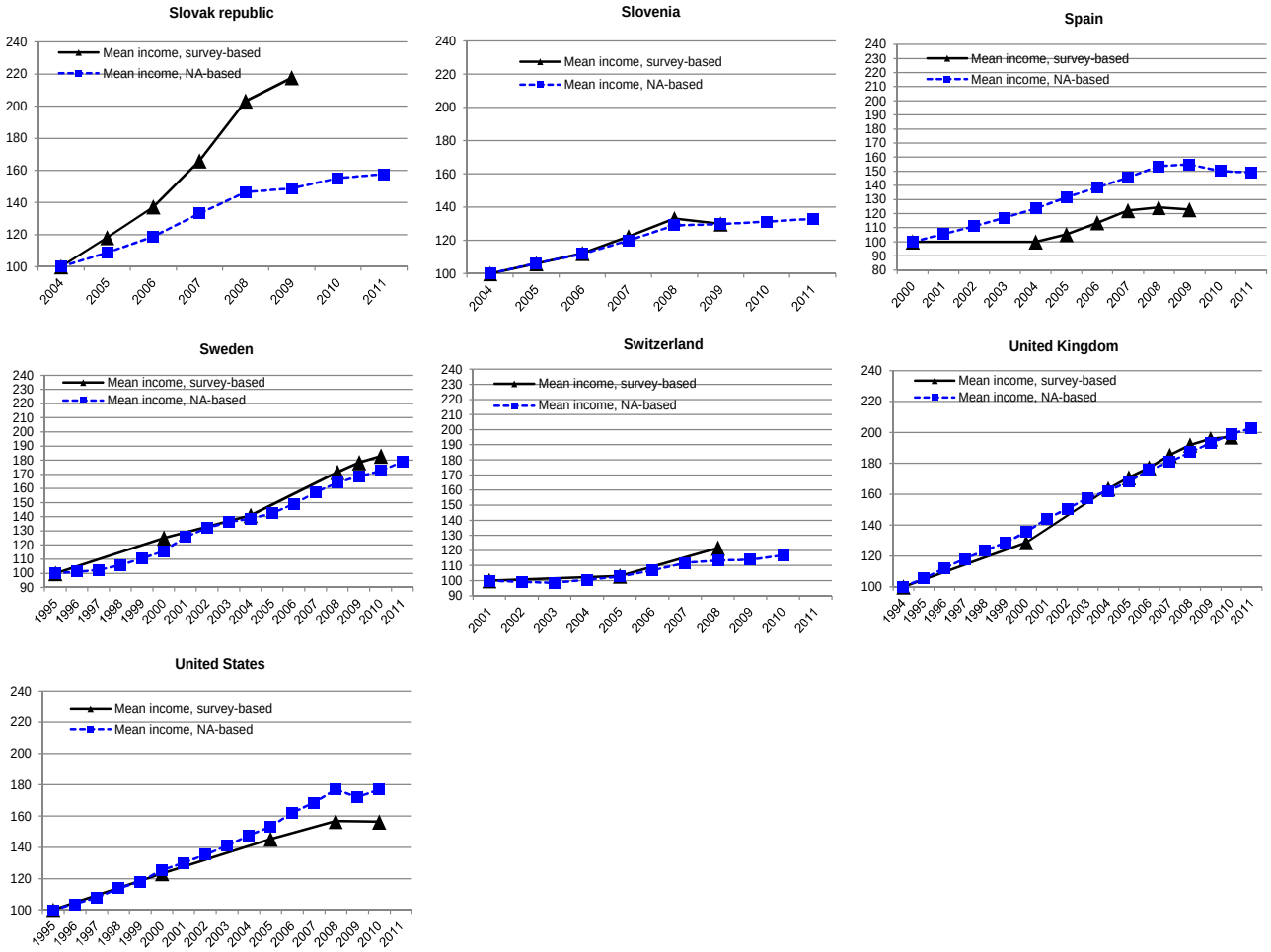


Note: For each country, panel B presents the evolution of mean household income (survey-based) and mean household adjusted disposable income (NA-based) in local currency terms.

Figure A1. Developments of household disposable incomes across OECD countries

Comparing macro and micro variables using different price adjustments

B. Current prices *(cont.)*



Note: For each country, panel B presents the evolution of mean household income (survey-based) and mean household adjusted disposable income (NA-based) in local currency terms.

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