



Policy and regulations for income distribution

- European perspective –

Income inequality: a wide scope of action

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Executive summary

The issue of income inequality has become a central theme of the political debate. Thomas Piketty's book "Capitalism in the 20th century" has become a world bestseller and if it deals first with capital distribution it has helped revive an academic and political debate about income inequality.

Indeed, the fight against income inequalities is an objective because those increase. The gap in income and wealth distribution is widening. It was 8: 1 in the 1990s and 9: 1 in the 2000s. The bottom 40% owned only 3% of total household wealth in the 80s. The richest 10% of the population now earn 9.6 times the income of the poorest 10%; this ratio is up from 7: 1 in the 1980s, when of total household wealth and wealthiest 1% held 18% .

Different causes contribute to this polarization:

- Evolution of forms of employment and working conditions atypical jobs, less stable, and less occupied by young people. 30% of the 30' minus is in non-standard work and polarization of the labour market; one-third of those employed in the OECD are employed in non-standard forms; 56% of jobs created between 1997 and 2013 are of this form.

- Information and communication technologies (ICTs) are weakening of redistribution since the 1990s in OECD countries.

- While market income inequality continues to grow after the mid-1990s, tax and social policies have become less effective on household income. Trade and financial openness on inequalities have an ambiguous impact on inequality through pressure on national policies e.g. relaxation of employment protection laws, including temporary contracts implying wider wage dispersion and limitation of public spending. However, changes in the regulation of goods and labour markets have also generated job creation.

- Societal developments with the increase in the level of education and female activity which has reduced inequalities versus the increase in single or childless households from 15% of working-age households in the late 1980s to 20% in mid-2000s.

Certain policy orientations aiming to address often close objectives such as the fight against poverty or social cohesion lead to a reflection on the role of the measures traditionally used to reduce the inequalities measured by the Gini coefficient, starting from gross income to disposable income appreciated at the household level. Taxes and transfers have a special role to moderate differences in income and wealth but are not the only lever. Whatever the public policies, market incomes distribution is the first step to reduce inequality significantly. Full employment and working conditions matter quite a lot especially because inequality is also a question of perception and employment is an important part of people's self-perception and their status in society. Competition policy also is not only concerned with efficiency of markets but for example with the impact on employment or on consumers. Taking into account the different levels of inequality or their cause implies sometimes structural policies. Spatial dimension: the gaps between the EU countries can be deepened between each region and may require local rebalancing policies. Temporal dimension: the issue of maintaining persons in the poorest deciles throughout life or the number of generations necessary to leave the lowest layers are at the heart of the assessment of current redistributive policies in terms of more structural policies. Gender dimension as said before while the increase in the female employment rate

has helped to improve, their position on the inequalities of other societal developments, inequalities such as the development of single-parent families have been reinforced. Finally, the different policies to combat inequalities must be linked to their collateral effects. For example, the increase in the minimum wage may have a hiring reduction effect. On the other hand, the withdrawal of public systems from pensioners may have the effect of increasing their risk of falling into poverty. Because even measurement of income inequality is submitted to methodological discrepancies and personal assessments of individual situations linked with subjective appreciation, the policy mix regarding inequality could only be the result of political trade-off not only oriented by efficiency. Tax and transfer policy illustrates perfectly this ambiguous situation.

Traditionally, the means put forward are those of tax policies and social benefits. Four key policy levers contribute to redistribution:

- the average rate of taxation
- the progressivity of taxation
- the average rate of social transfers
- the targeting of social transfers.

Redistribution = transfer rate * targeting + tax rate * progressivity.

The assessment of the effects of these various instruments is difficult to measure, for reasons of availability of information and methodological choices. A recent study carried out on behalf of EN3S underlines the importance of fiscal policies in relation to social redistribution. The same results can be achieved from very different combinations of recourse to the different levers mentioned. The selected countries (France, Italy, Sweden, UK) fit well into the analysed configurations.

Sweden is characterized by below-average inequalities due to small wage differentials, particularly at the top of the scale, and a high employment rate. Cash transfers are often universal and household taxation tends to be largely proportional to their incomes, so that taxes and transfers only have a moderate redistribution effect. Overall, both the dispersion of disposable income and the poverty rate are well below the OECD average.

For France and Italy, inequalities attributable to the labour market are slightly below the OECD average. While wage dispersion is low for international comparisons, income inequality is the result of a low employment rate. The high concentration of income from self-employment or capital brings the inequalities in household market income closer to the OECD average (but since taxes and transfers account for a large share of GDP, income inequalities are moderate).

The United Kingdom has a high proportion of part-time jobs, which is a source of income inequality. On the other hand, the employment rate is everywhere above the OECD average. While being modest, cash transfers are more targeted and taxes more progressive than in other OECD countries, resulting in a significant redistributive effect. However, inequalities in household disposable income are above the OECD average.

Another approach tries to assess the redistribution impact within the social benefits and the various contributions which fund them. This information confirms the fact that due to the difficulties to measure the collateral effects and to have a comprehensive approach of all the data, income redistribution policies need to determine a political trade-off.

Introduction

The issue of inequality has taken an important place in the public debate, notably its inclusion in Thomas Piketty's book "capital in the 21st century". However, it is important to recognize that current developments reflect an increase in income and capital inequalities even more for capital, which will not be dealt with in this report. During the preparation of this report two important studies were released which are directly connected with the topic: A Broken Social Elevator? How to Promote Social Mobility? OECD 2018 on the economic consequences of income inequalities and The Inner Level: How More Equal Societies Reduce Stress, Restore Sanity and Improve Everyone's Wellbeing Richard Wilkinson, Kate Pickett 2018 which pictures the social consequences and their negative economic by-products. The perception is also that income inequality has contributed to people anger expressed through the various populist movements.

The social discourse emphasizes the importance of the taking into account of the inequalities and the explanations converge on the statistical evolutions. Anyway, the question is not translated into a dedicated policy. The French current debate about the reduction of social benefits or taxes does not address the question of inequalities although equality is one of the three words of the French national motto. In Germany the question is not raised at all. However, the lines are blurred between close notions such as wages inequality, income inequality, poverty level or social exclusion which are at the core of the 2020 European strategy. Equal opportunities policies or trickle-down theory will benefit the entire society in the long term, but they did not address the immediate question of income or wealth inequality. However, it is worth to tackle income inequality as a question as such. As fraud for social contributions or taxes it undermines confidence and support for the whole social system. But according to institutions such as the IMF or OECD, inequality hinders also growth and the creation of quality employment.

The political decision-maker is in a complicated situation vis-a-vis a subject whose field is difficult to circumscribe. Inequality of income should be assessed not only through national indicators but at various level:

- The mapping; general data do not reflect national or regional differences and local differences are of real importance.
- The age; the assessment of income inequality can be done according to age. The French situation with retirees whose average income is higher than that of the working people is emblematic of this appreciation of inequality according to time. The fight against poverty was first oriented in France towards the upgrading of the resources of the elderly. At the other end we can find a counterpart in the policies of poverty reduction of the children carried out for example in the United Kingdom in the years 2000¹.
- The lifespan; a question can also be raised about inequalities throughout life. Is there a curse that would keep people in the same category or would a sufficient rotation allow to maintain the hope of

¹ In general, poverty rates are generally lower among the elderly than for the general population (respectively 13.8% and 16.7% in the European Union in 2013). While France is part of this trend (13.7% of poor people in the overall population, 8.7% among those aged 65 and over), other countries have relatively higher poverty rates. among seniors: this is the case in Sweden, where 16.4% of people aged 65 and over have incomes below the poverty line, compared to 14.8% in the general population).

a renewal that would make the situation of the poorest relatively tolerable because transient? However, it seems that income inequalities also affect the chances of subsequent generations.

-The gender; inequalities of income could also be approach through the gender.

This multi-faceted notion is so various that it allows the policy maker to use a mix of various policies even if the outcomes are difficult to single. Unemployment, poverty policies...are used but without referring to inequalities.

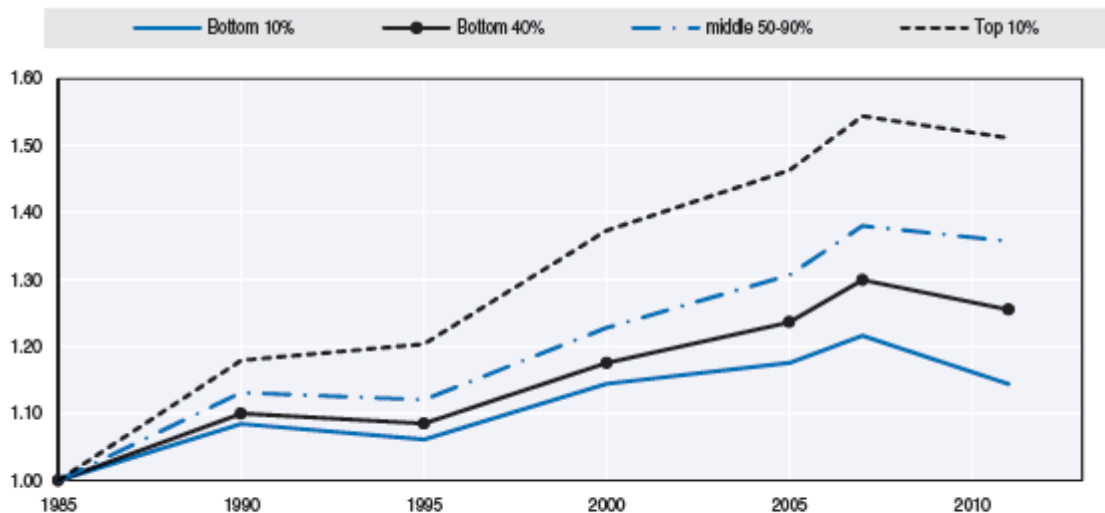
This area is particularly sensitive to data quality and interpretation conventions. International comparisons should always be taken with caution. If we consider the classical tools of income redistribution it is already complicated to develop detailed interpretations. Even more the appreciation of the role of public services such as education or vocational training could supplement or correct some effects of income inequalities, but their appreciation is even more complicated. These topics which are addressed in many publications constitute the background of this report. Within the EU China Social Protection project the purpose is to introduce operational tools through fresh materials. Beyond the rich information provided by the OECD or the European Union which are largely circulated, it seems useful to focus on the effect of tax and transfer policies which the tool immediately available for policymaker. The base is the results of recent international French studies. Their scope is rather original and covers the criteria which must be taken into account in the design of income redistribution policies. Actually, it is important to say that if the major trends or assessments are consistent among the various studies whose synthesis is presented in appendix, conclusions on the outcome of public policies will remain handled with caution. This report is mostly based on international studies which were conducted for the French government and the EN3S. These two studies will give the opportunity to introduce the question of data, methodology and conventions. This report focuses on the four main levers of income redistribution and presents the results of an original study which singles the different impacts of transfers including benefits in kind on income redistribution. The ambition is not to give some readymade recipes but to raise the awareness of the policy makers on the opportunities.

1 Inequalities as a new and major concern: the European background

1-1 Income inequality on rise

The OECD analyses identify three types of lessons. First, inequalities in the distribution of household disposable income have increased since the economic and financial crisis of 2008 in a large number of developed countries and have increased over a longer period in the majority of them (cf. figure1).

Figure1 trends in real household incomes at the bottom, the middle and the top



Note: Income refers to disposable household income, corrected for household size. OECD is the unweighted average of 17 countries (Canada, Germany, Denmark, Finland, France, United Kingdom, Greece, Israel, Italy, Japan, Luxembourg, Mexico, Netherlands, Norway, New Zealand, Sweden and United States). See notes to Figure 3.5.

The recent increase in income inequality is partly explained in many countries by the increase in primary income earned by assets and wealth holders at the top of the distribution, and on the other hand by the significant reductions in resources health and social programs as part of public financial recovery plans implemented after the crisis, after a first stage where the stabilizers and stimulus measures have supported household income but have deteriorated situation of the public accounts.

Using different indicators (the various definitions which are used in this report are in appendix), there is clear evidence that income inequality has increased markedly since the mid-1980s, and the Euro area debt crisis together with fiscal consolidation programs adopted by several EU countries could worsen the situation in the short and medium run. Recent literature, including Piketty (2013), has stimulated fierce debate on inequality among academics and policy makers. There is a perception that inequality is at a historic high and that it is related to the fragility of the economic recovery since the Great Recession, both as a consequence of the recession or perhaps as the prime reason for the slow recovery. Inequality continues to increase even as economies recover from the crisis, particularly in Europe in countries hit hardest by the crisis such as Greece. As recently stressed by the OECD (2014), the drop in income during the Great Recession has been larger for individuals at the bottom than for those at the top of the distribution as the Statistics on Income and Living Conditions and the Structure of Earnings Survey administered every four years, both provided by Eurostat show it.

Income inequality has grown within EU Member States². As analysed extensively in the Employment and Social Developments in Europe 2013 report (European Commission (2013)), the crisis has substantially altered the dynamics of inequality and affected different sections of the population in different ways. Income inequality is growing across and within many Member States, particularly in most of the Southern Member States and in several non-Central European countries. In many countries, the crisis has intensified the long-term trends of wage polarization and labour market segmentation, which together with less redistributive tax and benefit systems have fuelled rising

² This part is mostly based on the publications of the Social protection committee annual report 2017 review of the social protection performance Monitor and developments in social protection policies

inequalities. High levels of unemployment and in some cases the impact of fiscal consolidation, also explain the significant increases in inequalities observed in the countries most affected by the crisis.

With regard to income inequality, the income quintile ratio (S80/S20) shows that while on average inequality has remained broadly stable between 2008 and 2015 at EU level, there is a wide dispersion and growing divergence in inequality between Member States. The S80/S20 inequality ratio has increased significantly in 11 Member States compared to 2008, especially in most of the Southern Member States (CY, EL, ES and IT), in several central and eastern European Member States (BG, EE, HU, LT, RO and SI) and also in SE (Figure1 and Figure2). In contrast, significant reductions have been registered in some countries, namely BE, FI, HR, LV and the UK over the same period. Over the most recent period 2014-2015, inequality has risen sharply in LT, but reduced substantially in DE, EE, IE and SK. The highest income inequalities are currently found in BG, EE, EL, ES, LV, LT, PT and RO, where the equalized income of the richest 20% of the population is more than 6 times that of the poorest 20%.

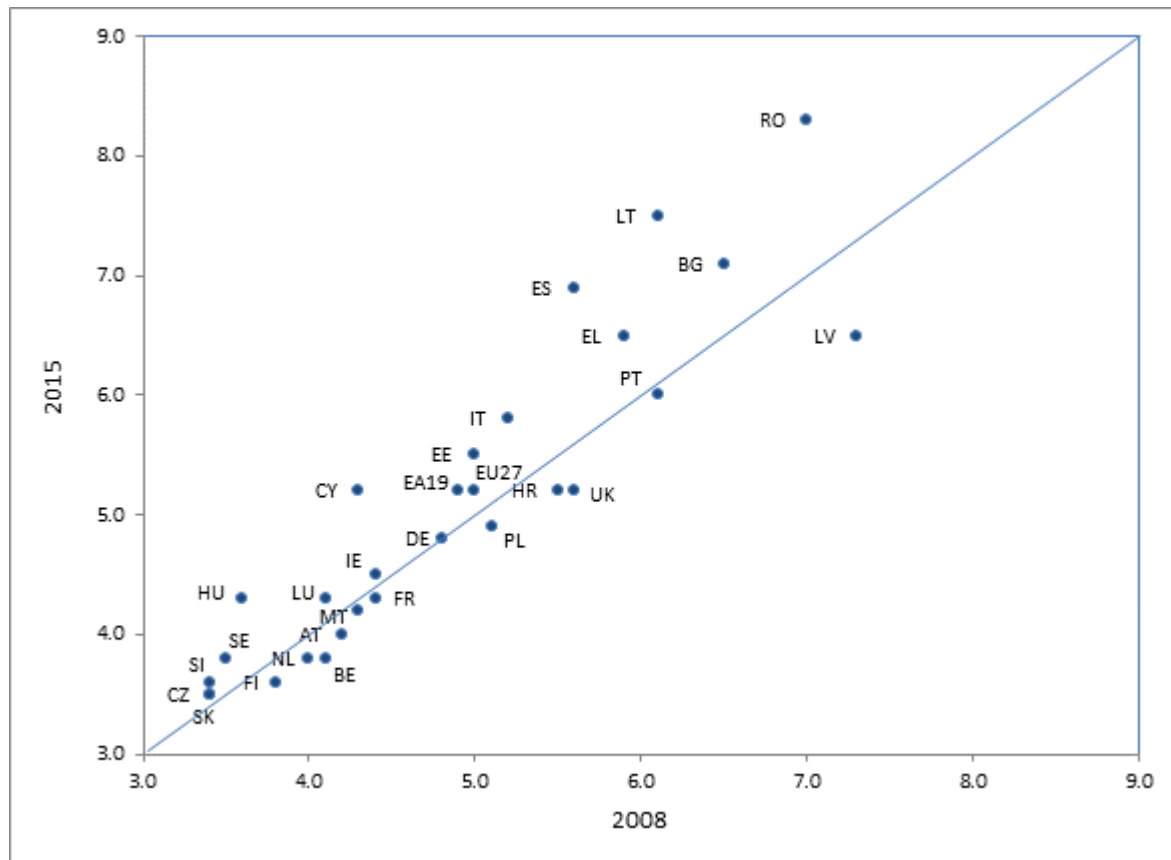
Figure 2 Income quintile ratio (S80/S20), evolution (% change) 2014-2015 and 2008-2015

	EU28	EU27	EA12	EA19	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	HR	IT
2015	5.2	5.2	5.1	5.2	3.8	7.1	3.5	4.1	4.8	6.2	4.5	6.5	6.9	4.3	5.2	5.8
2014-2015 change in %	~	~	~	~	~	~	~	~	-5.9	-4.6	-8.2	~	~	~	~	~
2008-2015 change in %	n.a.	~	~	6.1	-7.3	9.2	~	n.a.	~	10.0	~	10.2	23.2	~	-5.5	11.5
	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK
2015	5.2	6.5	7.5	4.3	4.3	4.2	3.8	4.0	4.9	6.0	8.3	3.6	3.5	3.6	3.8	5.2
2014-2015 change in %	~	~	13.0	~	~	~	~	~	~	~	~	~	-10.3	~	~	~
2008-2015 change in %	20.9	-11.0	13.0	~	19.4	~	~	~	~	~	18.6	5.9	~	-5.3	8.6	-7.1

Source: Eurostat (EU-SILC)

Notes: i) For DK, breaks in series for the period 2008-2015 which mainly affect indicators related to incomes ("n.a." shown for the period compared to 2008); ii) For EE, major break in series in 2014 for variables in EU-SILC, so change 2008-2013 used for the longer period compared to 2008; iii) For HR, the long-term comparison for EU-SILC-based indicators is relative to 2010, since no EU-SILC data published by Eurostat before 2010; iv) For UK, changes in the survey vehicle and institution in 2012 might have affected the results on trends since 2008 and interpretation of data on the longer-term trend must therefore be particularly cautious; v) Only statistically significant changes have been marked in green/red (positive/negative changes). A 5% threshold has been used. "~" refers to stable performance (i.e. statistically insignificant change); vi) Income reference year is the calendar year prior to the survey year except for the UK (survey year) and Ireland (12 months preceding the survey).

Figure 3 Income quintile ratio (S80/S20), evolution 2008-2015



Source: Eurostat (EU-SILC)

Notes: i) For DK, breaks in series for the period 2008-2015 which mainly affect indicators related to incomes, so comparison not shown ii) For EE, major break in series in 2014 for variables in EU-SILC, so 2013 figure shown instead of 2015; iii) For HR, data refer to 2010 instead of 2008; iv) For UK, changes in the survey vehicle and institution in 2012 might have affected the results on trends since 2008 and interpretation of data on the longer-term trend must therefore be particularly cautious; v) The blue line shows equal inequality in 2008 and 2015, so countries to the left of the line have seen a rise in inequality, and those to the right a reduction.

Continuing weakening in the effectiveness of income support systems for those furthest away from the labour market Member States differ substantially in terms of the adequacy of the income benefits they provide to jobless or (quasi-)jobless households. In 2015 the poverty risk for people living in (quasi-) jobless households ranged between as much as over 75% in BG and the three Baltic States of EE, LV and LT, to under 50% in AT, DK, LU, NL and the UK. Between 2014 and 2015, 10 Member States experienced a significant worsening of the poverty risk for people in (quasi-)jobless households, with particularly strong increases in BG, EE, FR³ (Figure3), with the result that this has been identified again as a trend to watch. In contrast, reductions were recorded in 8 Member States, which were most notable in HU, LU and SK, suggesting an improved effectiveness of safety nets in terms of income support in these countries. The longer-term trend since the beginning of the crisis (2008) has, however, mainly been one of worsening income poverty among (quasi-)jobless households, with 18 Member States seeing an increased poverty risk for people in such households. Marked increases of around 8-10 pp have been recorded in CZ, ES, HU, NL and SI, of 11-13 pp in EL, FR, PL and RO, and around 18-19 pp in SE and SK. When looked at in parallel with the evolution of the share of the population in (quasi-

³ The figures for FR for 2014 and 2015, which show a decrease by the order of 10 percentage points between 2013 and 2014 followed by an increase by 10 points between 2014 and 2015, are currently being verified. Anyway, France appears as the country where inequalities have made the least increase since the mid80s.

)jobless households, it is evident that in some Member States income support levels of last resort schemes worsened significantly at the same time as the number of people counting on them increased.

Figure 4: At-risk-of-poverty rate for the population living in (quasi-) jobless households (in %), evolutions 2014-2015 and 2008-2015

	EU28	EU27	EA18	EA19	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	HR	IT
2015	59.0	58.9	60.6	60.7	58.5	75.4	65.6	44.6	68.9	77.1	54.1	51.6	61.6	61.4	67.5	57.1
2014-2015 change in pp	0.9	0.9	1.1	1.1	-3.7	7.7	~	~	3.9	6.3	~	~	-1.5	10.1	4.1	-1.5
2008-2015 change in pp	n.a.	3.1	5.4	5.4	3.8	-1.4	10.1	n.a.	4.7	-3.9	7.5	11.3	10.1	11.6	-1.6	1.3
	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK
2015	50.9	76.9	75.5	41.3	56.6	69.1	47.9	49.1	61.0	57.5	60.1	63.7	71.4	52.8	69.6	47.7
2014-2015 change in pp	~	3.9	4.6	-17.0	-6.6	5.0	~	~	5.1	-2.0	~	1.3	-6.9	~	~	-1.1
2008-2015 change in pp	~	-6.4	5.1	-8.1	8.1	7.5	8.1	~	11.8	4.3	11.5	8.7	19.3	-3.5	18.1	-15.4

Source: Eurostat (EU-SILC)

Notes: i) For DK, breaks in series for the period 2008-2015 which mainly affect indicators related to incomes ("n.a." shown for the period compared to 2008); ii) For EE, major break in series in 2014 for variables in EU-SILC, so change 2008-2013 used for the longer period compared to 2008; iii) For HR, the long-term comparison for EU-SILC-based indicators is relative to 2010 as no EU-SILC data published by Eurostat before 2010; iv) For UK, changes in the survey vehicle and institution in 2012 might have affected the results on trends since 2008 and interpretation of data on the longer-term trend must therefore be particularly cautious; v) Only significant changes have been marked in green/red (positive/negative changes). "~" refers to stable performance (i.e. insignificant change). vi) For the at-risk-of-poverty rate, the income reference year is the calendar year prior to the survey year except for the United Kingdom (survey year) and Ireland (12 months preceding the survey). Similarly, (quasi-)jobless households (i.e. very low work intensity) refers to the household situation in the previous calendar year.

To support the needs of people at risk of poverty, governments provide social security in the form of social transfers. The effectiveness of social provision can be examined by comparing the at-risk of-poverty rate before and after social transfers. The impact of social transfers on income poverty reduction varies greatly across Member States. In 2015, it ranged from under 20% in EL, LV and RO to over 50% in DK, FI and IE (Figure4). These large differences highlight. Between 2014 and 2015, however, there were no countries with significant improvements in the capacity of social transfers to reduce income poverty, and in fact in 2 Member States (CY and LT) the impact was significantly reduced. In the longer term (2008-2015) only 3 countries (CY, EE and the UK) have significantly strengthened the impact of social transfers in reducing income poverty as opposed to 6 countries (CZ, HU, PL, RO, SK and SE) where the impact has decreased.

Figure 5: Social benefits, as % of GDP, 2008 and 2014

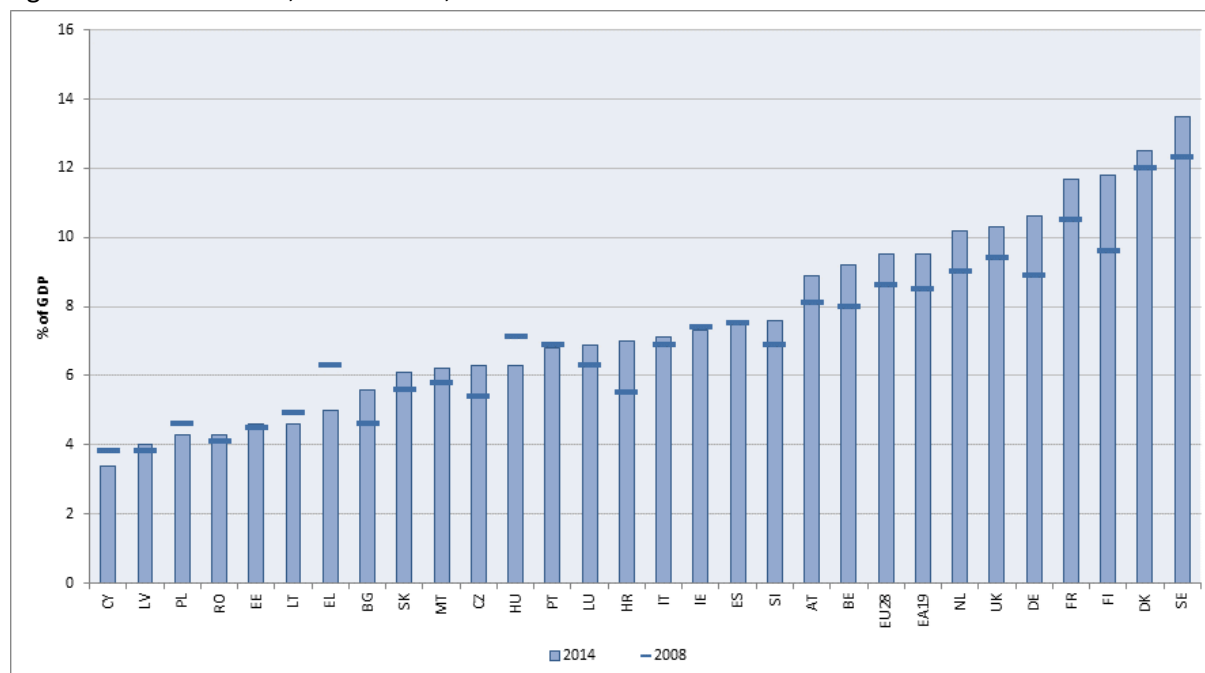


Figure 6: Impact of social transfers (excluding pensions) on at-risk-of-poverty reduction, evolutions 2014-2015 and 2008-2015⁴

	EU28	EU27	EA18	EA19	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	HR	IT
2015	33.5	33.5	33.1	33.1	44.1	22.5	42.3	52.7	33.5	22.3	55.0	16.1	26.6	43.1	35.5	21.6
2014-2015 change in pp	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~
2008-2015 change in pp	0.1	~	~	~	~	~	-12.7	0.1	~	5.7	~	~	~	~	~	~
	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK
2015	36.2	17.6	22.4	43.8	42.0	31.2	48.0	45.7	23.1	26.1	13.3	42.3	35.3	53.7	46.1	42.8
2014-2015 change in pp	-5.1	~	-8.1	~	~	~	~	~	~	~	~	~	~	~	~	~
2008-2015 change in pp	5.6	~	~	~	-17.1	~	~	~	-9.5	~	-10.1	~	-5.5	~	-11.1	7.5

Source: Eurostat (EU-SILC)

Notes: i) For DK, breaks in series for the period 2008-2015 which mainly affect indicators related to incomes ("n.a." shown for the period compared to 2008); ii) For EE, major break in series in 2014 for variables in EU-SILC, so change 2008-2013 used for the longer period compared to 2008; iii) For HR, the long-term comparison for EU-SILC-based indicators is relative to 2010 as no EU-SILC data published by Eurostat before 2010; iv) For UK, changes in the survey vehicle and institution in 2012 might have affected the results on trends since 2008 and interpretation of data on the longer term trend must therefore be particularly cautious; v) The income reference year is the calendar year prior to the survey year except for the United Kingdom (survey year) and Ireland (12 months preceding the survey).

The above assessment of the impact of social transfers does not take into account non-cash benefits such as transfers in kind. A number of Member States provide public services to those furthest away from the labour market which contribute to general welfare and are not reflected in purely income-based measures.

⁴ The impact of social transfers is a theoretical indicator which is calculated using a fixed income poverty line and ignores the influence of social transfers on median income. This should be taken into account when interpreting the figures

1-2 Major explanations

Income inequality depends on two factors: inequality trends of individual components and shares of total income. The income source that has contributed most to the increase in overall income inequality is capital income but as the part of capital income is still limited it has no major influence till now on market income inequality even if the contribution of wage inequality is seen to be less relevant as wage share is declining in most EU countries, due mainly to the fall in employment rates. The most important component of income inequality is still wage inequality.

The first pathway goes through the impact on labour earnings inequality. Earnings inequality must integrate both wage dispersion among workers and individual earnings dispersion among the whole working-age population, which takes into account under-employment and inactivity. The second step is the transmission of labour earnings inequalities to household income inequalities which takes into account the importance of earnings dispersion together with other factors (e.g. changes in household structure and the influence of other income sources). The third step is the one to final household disposable and adjusted disposable income. This step takes into account the impact of taxes and transfers, both cash and in-kind.

Concepts

- Dispersion of hourly wages among full-time (or full-time equivalent) workers.
- Wage dispersion among workers (e.g. annual wages, including wages from part-time work or work during only part of the year).
- Individual earnings inequality among all workers (including the self-employed).
- Individual earnings inequality among the entire working-age population (including those who are inactive, *i.e.* not working).
- Household earnings inequality (including the earnings of all household members).
- Household market income inequality (including incomes from capital, savings and private transfers).
- Household disposable income inequality (taking into account public cash transfers received and direct taxes paid).
- Household adjusted disposable income inequality (taking into account the values of publicly provided services such as health or education)

1-2-1 Pressure on wage level

Altogether wage inequalities could be influenced by the hourly pay, the working conditions (part/fulltime job) and the annual duration of work. The best assessment of income is a yearly assessment of the total income.

Intermediate levels of collective bargaining spur wage compression. The analysis of the impact of collective bargaining systems on wage inequality shows that intermediate levels of collective bargaining seem to produce a more compressed wage structure. Union density and bargaining coverage rates declined in most EU countries. Regarding labour market institutions, the level of wage bargaining has remained mainly stable at predominantly decentralized or intermediate levels over the considered period. In some, recent reforms have implied a further decentralization of collective bargaining. Although the picture is far from homogeneous across countries and over time, real minimum wages have recently increased in most EU countries. Besides the effect of minimum wage, the wage bargaining level does not seem to have a robust influence on inequality (a more centralized

wage setting only increases inequality in hourly wages), although this result could be related to the high persistence of collective bargaining systems in the considered period. Union density and the bargaining coverage rate reduce inequality but only when analysing hourly wages. Employment of minimum wage earners or just above these level workers could be reduced. For instance, while minimum wages seem to be an appropriate instrument to combat rising inequality, especially at the bottom part of the wage distribution, if its value is set too high value it may actually reduce employment, which in turn dampens the inequality-reducing effect. In general, the recession has affected minimum wages by lowering real purchasing power, particularly in the most recent periods.

Inequality and labour market institutions show a significant impact of minimum wages on inequality, being stronger on the lower part of the distribution. Their impact only affects the bottom part of the wage distribution. Employment protection legislation also affects the structure of wage formation process. In particular, increases in wage inequality were much stronger in the United Kingdom than in continental Europe, but at the same time, unemployment has also evolved in a very different way with higher increases in Europe. It seems that institutional rigidities have placed a floor under the wages of low skilled workers in continental Europe, resulting in increased unemployment rather than greater wage inequality, and with an ambiguous impact on overall income inequality

1-2-2 Large impact of globalization and technological change

In most of the studies globalization and technological change are addressed together. Wage inequality is clearly pro-cyclical, and it is related to the industry mix. Due to trade specialization and off-shoring, labour demand in developed countries has shifted towards skilled workers, reinforcing the effect of technological change on inequality with a lesser demand for low skilled workers due to the off-shoring.

But the direct effect of globalization is perhaps enhanced by the employment protection policy introduced to mitigate the consequences of openness. The flexibility of work (short term labour contracts, part time contract) all this kind of measures have an indirect influence on wages inequalities.

Technological change and crowding out of routinized work have per se an influence; new technologies increase the productivity of highly skilled workers more than for low skilled laborers. Wages of highly skilled workers will rise faster and, as a result, wage inequality will increase due to job polarization, particularly in the top part of the distribution. Improving competition in regulated network sectors also has a robust influence in reducing wage inequality.

1-2-3 societal changes

The full complexity of the various effects including side effects could be illustrated by the female participation. As female participation rates in the labour force have increased over the recent decades in most states, a wage gap with males could widen the income distribution. Gender-based inequalities are further enforced by the fact that women are more often engaged in part time work than men. In this regard, the creation of more full-time work opportunities for females might act as an instrument to reduce the difference between certain percentiles of monthly earnings.

On another level the rising number of single parent household lead to an increase of inequalities due to the fact that neither incomes nor spending are shared. This phenomenon could be observed with

ageing people whose household have different life expectancies which leaves the surviving member often the wife with sparse income.

1.3 Concerns regarding an increasing wage dispersion and social exclusion

The low growth performance over the recent decades in the EU has led to an increase of income inequality since the mid-1980s. The share of low income work in the economy, i.e., incomes of less than two-thirds of the median income of the respective country has been rather stable in the years before 2010, it may have increased due to the adverse economic developments caused by the Euro area debt crisis, as fiscal consolidation programs launched in several countries are likely to have limited employment opportunities in the short and medium run.

1-3-1 Large cross-country differences persist.

Despite this common trend, there are differences in the timing and intensity of these changes across countries, and there are differences in the evolution of inequality at the lower and higher edges of the income distribution. For instance, large and sustained increases of inequality in Germany are observed at the same time as a narrowing income distribution is seen in France. By using indicators to measure inequality, individual countries can be clustered into groups with similar inequality patterns. Some Nordic countries are characterized by low inequality due to their rather narrow wage dispersions, in particular at the upper end of the scale, combined with high employment rates (Sweden). In several EU member states (France, Italy), inequality in labour earnings goes hand-in-hand with low employment rates. In some continental states inequality is higher, but due to different developments. The wage dispersion is rather wide in Germany at lower quintiles of the distribution. Employment rates are quite low in Greece or Poland. The UK is characterized by a large share of part-time workers that drive inequality in labour earnings.

However, there are other sources of household income. Besides wages, capital income contributed most to rising income inequality. Changes in wage inequality explain around one-fourth of the variation in changes in overall income inequality between 2006 and 2011. A 0.1 increase in the Gini index for wages implies an increase of 0.04 points in the Gini index for overall income.

1-3-2 High levels of income inequality are a problem: employment as the very basis of inequality policies in the European Union

From the viewpoint of social fairness and cohesion, inequalities practically invalidate the notion of equality of opportunity.⁵ Inequalities have been on the rise since the 1970s in many countries of the world. But in many European countries inequalities have risen more sharply in the context of the macroeconomic adjustment during the Euro zone crisis. This means that a serious divergence has developed between the core and periphery of the Euro zone. This divergence is not only serious but also dangerous for the stability of the monetary union and the cohesion of the EU as a whole. Many Member States need to strengthen their employment and social policies. The first challenge is that EMU itself also has to be reconstructed, in particular through the creation of a counter-cyclical fiscal capacity. Europe has gone through not one, but two crises. The effects of the first financial and economic crisis in 2008-9 were felt by the world as a whole and the second Euro zone recession since 2011. When the global financial and economic crisis worsened in autumn 2008, EU governments agreed to coordinate measures to stimulate the economy, including by increasing their national budget deficits on a temporary basis. This fiscal stimulus was partly discretionary and partly the work of so-called automatic stabilizers within national budgets, namely reduced tax revenue and increased social expenditure at the cost of increased budget deficit. This stimulus helped to generate a recovery in GDP and to reduce unemployment in 2010.

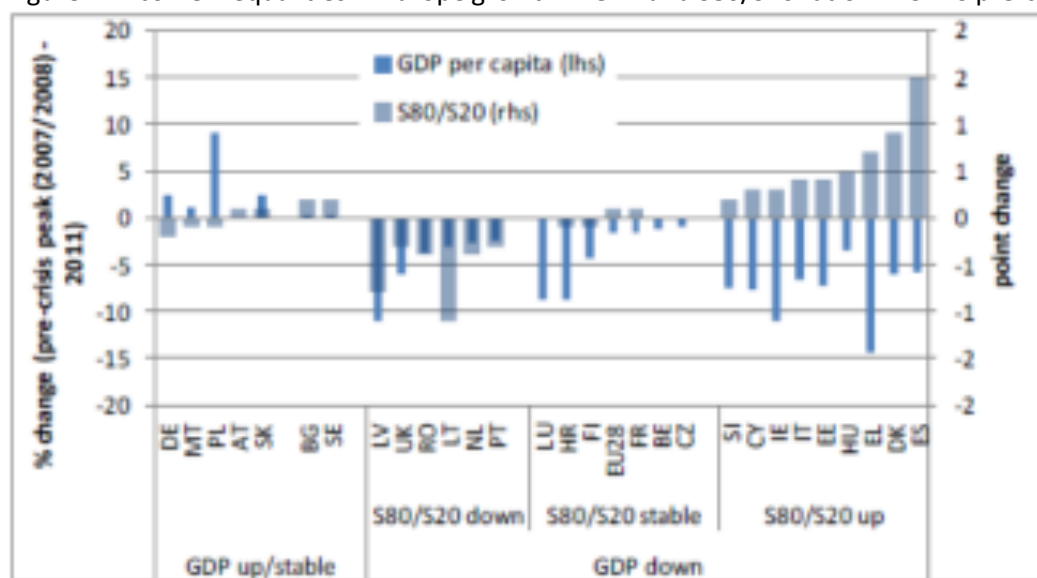
The Euro zone crisis produced a dramatic rise in unemployment. although some improvement in the, unemployment in Europe remains still as high today as at the peak of the first recession in early 2010. Instruments that were historically used to limit the social impact of crises were not available any more, while there has been nothing newly introduced to replace them.

Over several years, internal devaluation was undertaken in an attempt to stabilise the troubled economies and to boost their economic competitiveness. However, it has certainly not borne any good fruit in terms of improving the employment and social situation.

Moreover, internal devaluation is a recipe that cannot be applied in many countries at the same time because it undermines overall demand. If many countries cut their wages and lay off workers, nobody wins in terms of relative competitiveness, but everybody loses. If, in exceptional circumstances, internal devaluation helps a country to return to growth, but rising inequality has been a part of the consequences. The figure under has the great interest to cluster the evolution of the EU MS through various patterns.

⁵ László Andor Commissioner for Employment, Social Affairs and Inclusion Imbalances & Inequalities in the EU: Challenges to the Europe 2020 Strategy Lecture at Université Libre de Bruxelles Brussels, 10 October 2014

Figure 7: Income inequalities in Europe growth in GDP and S80/S20 ratio in EU MS pre-crisis/2011 ratio



Source: Eurostat, EU-SILC (DG EMPL calculations).
 Note: Pre-crisis peak: 2007 (DK EE EL ES FI FR IE IT LU LV PT SE UK), 2008 (AT BE BG CY CZ DE HR HU LT MT NL PL RO SI SK). GDP 2012-2014 available but 2011 selected to compare with S80/S20. Countries grouped by difference in S80/S20-GDP, and sorted by GDP within the group. S80/S20: years refer to income years not survey years; AT and UK 2010 instead of 2011.

It shows how the ratio of income inequality between the top quintile and the bottom quintile of the population has evolved during the crisis across the EU. It crosses income inequalities evolution with the global economic trend (on the right-hand side – e.g. Greece, Italy). If inequality decreases during structural crises, violent shocks, and other exceptional conditions, it increases again in times of prosperity.

The “spill-over effect” of employment and social imbalances means that action - or lack of action - as regards employment and social challenges can affect other Member States.

- the unemployment rate;
- the rate of young people neither in employment, nor in education or training and the youth unemployment rate;
- the real gross disposable income of households;
- the at-risk-of-poverty rate of the working-age population;
- income inequality as determined by the S80/S20 ratio, which compares the income of the top fifth of the population and the bottom 20%.

Before redistribution policy the basis requires more and less:

- the pursuit of full employment even through Keynesian demand management e.g. social care which is part of EU/China SP project testifies that labour-absorbing sectors are available with secure jobs

-state planning and competition policy that is not only concerned with efficiency of markets but consider issues like the impact on employment or the impact on consumers with the right balance between employment and consumer welfare. Corporate governance reforms such as worker representation on company boards or shareholders say can help to limit executive pay awards and maintain a fair ratio between the lowest and highest paid. Targeted action against unjustified rewards in the financial services sector, or global taxation of financial transactions remains compelling, but both require international co-operation which has been lacking until now.

- collective bargaining and the promotion of trade union power through the wage setting process.

But it also includes boosting the relative earning power of low-paid workers by vocational education and training to increase productivity, targeted support for low income households to improve human capital and labour market access, such as widening the availability of childcare and tackling the labour market discrimination (gender pay gaps, as well as discrimination against disabled employees and older workers).

- special attention to younger generation because of their growing precariousness and declining real incomes and living standards since the 2008 crisis. The question of housing which prevents them from building their own household, the question of stronger incentives for students in low income households to enter university but also much greater support to undertake vocational training and apprenticeships. This appreciation of the situation of these young people doomed to stay in a precarious situation make a direct linked with the question of inequality of capital through inheritance and wealth taxation help to further equalize the distribution of assets, property and capital

Redistribution using the fiscal levers of the tax and benefits system to alter the income distribution along progressive lines which will be discussed in this report. It is just one part of an overall and ambitious policy since income inequalities are mostly linked to market income and for the largest part of the households to employment which can be gathered under predistribution. Predistribution which is often politically sensitive, involves taking on entrenched vested interests, especially in the financial sector. It is important to highlight that lower inequality of primary incomes is positive for economic efficiency as well as social justice. Greater equality helps to create more stable market economies, balanced by societies where democratic politics rather than market forces prevail.

These policies are paradoxically more difficult than traditional redistribution. They were quite efficient during a period of standing growth after WWII. The mood is not favourable. The trickle-down theory which favours the firsts of rope is mainstream. Anyway, the OECD (*In It Together: Why Less Inequality Benefits All*) or the IMF stress the importance of tackling this question. During the 1990s and the 2010s the inequality would have knocked 4.7 off cumulative growth on average in the OECD countries.

The basis of in inequality reduction policy is to boost employment participation and to secure resilience in the tax base to increase the potential for redistribution and 'social' investment over the long-term.

Finally, policy experience since the Second World War demonstrates that equality cannot be achieved solely within the boundaries of the nation-state. There is a growing need for coordinated action

internationally to tackle tax avoidance and tax evasion and to enforce common labour standards to prevent a race to the bottom in global markets.

Intermediate conclusion

The extent of inequalities in disposable income in the different countries depends on the one hand the level of "primary" or "initial" income inequality, before transfers and levies, and on the other hand the redistributive impact of these transfers and levies (cf. graph 3). Some countries, like the Scandinavian countries, have income inequalities "Primaries" of low magnitude, allowing them to reach levels of income inequality available among the lowest with a redistributive impact of transfers and direct debits relatively more limited. Others, such as Ireland, are characterized by a high degree of inequality primary incomes and must exert a considerable redistributive effort through transfers and levies to approximate the developed country average in terms of disposable income inequality. France is similar to this second category of countries, with primary income inequalities higher than the OECD average, and an impact significant redistributive of transfers and levies that allows our country to join exactly the OECD average in terms of unequal income distribution available. On the other hand, other countries with a high degree of income inequality (Spain, United States, United Kingdom) remain, because of a limited redistributive impact of direct withdrawals and cash benefits, significantly above the average of the OECD in terms of final inequalities in disposable The OECD advises four main policy areas to favour a balance between growth and inequality reduction:

- Women participation in economic life
- Employment promotion and good-quality job
- Skills and education
- Tax and transfer system for efficient redistribution

As mentioned before the various policies could have side effects. The figure 8 summarizes the benefits of various ways of tackling income inequalities and the impact on growth. This figure shows also that none of the structural policies has a definite outcome on the reduction of income. That the reason why this report focusses on tax and transfer policies

Figure 8 Some structural policies benefit both growth and equality but others may entail a trade-off⁶

A rise in	Employment rate	Earnings equality1	Total labour income equality2	GDP per capita
The tertiary education graduation rate	~	+	+	+
The upper secondary graduation rate	~	+	+	+
Equity in education	~	+	+	+
The minimum wage (as share of the median wage)	0/-	+	~	0/-
Unionisation	~	+	+	~
Legal extensions of collective wage agreements	~	~	-	-
The overall level of employment	0/-	+	-	-

⁶ <http://www.oecd.org/eco/labour/49421421.pdf> Economic Policy Reforms 2012 Going for Growth

protection legislation (EPL)				
The gap between EPL on regular versus temporary work	-	-	~	-
The replacement rate and duration of unemployment benefits	-	+	~	-
Spending on active labour market	0/+	~	+	+
Anti-competitive product market regulation kept policies	-		0/+	-
The integration of immigrants	+	+	+	+
Anti-discrimination initiatives	+	+	+	+
Female labour force participation	+	+	+	+

1. The term “Earnings equality” refers to equality among those who earn an income from employment. 2. The term “Total labour income equality” refers to equality among the working-age population, thus accounting for both employment and earnings inequality effects. Note: A plus symbol (+) denotes a significant rise in the variable, a minus symbol (-) a significant fall and a zero (0) no impact; 0/+ and 0/- mean that research is contradictory, i.e. some studies cannot find a significant effect while others find a positive/negative effect or studies cannot find an aggregate effect but find a significant effect on some parts of the population. ~ means that the sign of the effect is unknown because the empirical literature is inconclusive or because studies on the link are not available.

The rise in inequality in OECD countries, widely documented in the economic literature (OECD 2012), raises the question of whether socio-fiscal systems are equally effective in addressing income inequality. This study focuses on monetary inequality, and on monetary redistributive policies (taxes and cash transfers) implemented in OECD countries over the past 15 years.

2. The impact of tax and transfer systems on inequality reduction

The tax and transfer system are the main policy for government to reduce income inequalities although their first objective is to ensure State resources and an adequate social protection against the main life risk. This part provides a comprehensive approach of the outcomes of the fiscal policy and social protection in relation to inequality with recent and complete data. It is an opportunity to expose the actual difficulties to have a proper assessment of the question. One appendix presents a synthesis of the literature on the subject. If the lessons of the EN3S study are mostly consistent with the results of the existent studies, it raises the question of a new assessment of the respective effects of tax and transfer systems.

2-1 Main hypothesis

Four key policy levers contribute to redistribution: the average rate and progressivity of taxation, and the average rate and targeting of social transfers. All things being equal, stronger targeting and progressivity reduces inequality. Beyond this assumption, theory is inconclusive. Changes in targeting and progressivity may cause simultaneous changes in the average rate of transfers and taxes through political bargaining, labour market responses, or other mechanisms. It is unclear if such connections are present. Since there is no intuitive way forward, new theories need a base of accurate empirical evidence to reveal how the four levers of redistribution are connected.

2-1-1 Methodological changes

This was the aim of the joint study by the EN3S with a research body LIEPP (Laboratoire interdisciplinaire d'évaluation des politiques publiques interdisciplinary unit on public policies evaluation) which provides a base of empirical evidence by analysing the impact of taxes and transfers on redistribution in a unified framework.⁷

Using Luxembourg Income Study (LIS) micro data cf. appendix, augmented by imputations of missing taxes, it decomposes redistribution into the four policy levers. The analysis provides an international comparison of 22 countries over the period 1999-2013 for a total of 67 country-years. It provides an added value:

1. Classify households according to Market Income;
2. Integrate retirement pensions (excluding minimum old age support income) from the level of Market Income;
3. Integrate employer's social security contributions with labour income;

⁷ Compulsory deductions may affect the primary distribution of income: social contributions may affect the level of employment, wage cost or net salary; the minimum wage and other wages can be fully or partly indexed to the price level and thus be affected by changes in consumption taxes or feedbacks between the level of remuneration and the income tax, but it is not possible to distinguish them. In other words, the level of primary inequality is not only corrected by redistribution, it is also partly produced by the socio-fiscal system.

4. Integrate unemployment benefits at the level of ordinary social benefits (and not at the level of Market Income);
5. Produce an analysis of the effects of the tax system that includes the effects of taxes on consumption (especially VAT).

This study assesses the redistributive impact of all four levers of redistribution using household survey data on a sample that includes the whole population.

The methodological improvements lead to original findings. Few studies compare the redistributive impact of taxes and transfers simultaneously. Their conclusions all point in the same direction: the redistributive effect of transfers is much more important than the tax system, |the opposite to this finding. The discrepancy is primarily due to state provided pensions, which inflate transfers. If public pensions are categorised as income rather than transfers, the redistributive effect of transfers is dramatically reduced and falls below the redistributive effect of taxes. The imputation of missing taxes also challenges the usual ordering of countries in terms of efficiency in inequality reduction. For instance, France and Sweden redistribute primarily through taxes in this study.

1. The choice of the income concept by which households are classified may influence the determination of progressivity indicators (to the extent that they depend on the rank or reference income under consideration). For most of the existing analyses, the reference income taken into account to classify households is the Market Income, that is, the income before redistribution. Exemptions from social security contributions, especially on low wages, has become one of the strongest elements of progressivity in the tax system in countries such as France and Belgium.

2. The integration of retirement pensions into the Market Income overcomes a well-known difficulty: in countries where pay-as-you-go retirement is the rule, the retirement pension constitutes the bulk of the income of retired households; not taking it into account would be tantamount to setting at the same income level working-age households without income, and retirees households of all kinds. In addition, this would make the market income level of retirees in funded pension countries and PAYG countries incomparable. On the other hand, assistance pensions (minimum old age pension) are included in social transfers. The difference between public and private pensions poses problems of comparability. If public pensions are excluded from market income, most pensioners have zero income before transfers. Pensioners would be shown as being poor, like any working age household with zero market income, yet this measurement would not reflect pensioners' true purchasing power. Other studies have restricted the analysis to the working age population or integrate public pensions into market income. Doing so the market income of pensioners is comparable between countries with funded pensions and countries with pay-as-you-go systems. Pensioners make up a large share of most national populations and this share varies across countries. Including pensions within market income is the only adjustment which can provide insights for the entire national population.

The sample frame thus includes the whole population in contrast to the majority of studies which reduce their sample to the working age population.

3. The inclusion of employer's social security contributions in labour income since there is no reason to consider a priori an economic difference between employer and employee contributions. Previous studies only consider employee contributions and income tax. There are important reasons for including employer contributions in the analysis. The majority of the incidence (between two thirds and 90 percent) falls on the employee, even though the contributions are labelled for the employer. The incidence of social contributions is similar to personal income tax so there is no economic reason to treat personal income tax, employee contributions, and employer contributions differently. The relative distribution between these two types of contributions varies from country to country. Sweden rely mostly on employer contributions, employer contributions represent 9.8% of GDP in 2005 while employee contributions only 2.5%; while other countries, such as the Netherlands, rely on employee contributions. In the Netherlands, employee contributions represent 6.4% of GDP in 2004 and employer contributions only 3.9%. Denmark has no employer contributions and employee contributions represent only 0.1% of GDP in 2004 but the income tax is remarkably high.⁸ In a general case, however, the difference in the distribution of employer and employee contributions does not specifically affect the cost of labour or disposable income. It is only in the neighbourhood of the minimum wage that the distinction between employee and employer contributions has an immediate effect on the cost of labour or, conversely, on the net wage - insofar as the legal definition of the minimum wage concerns gross wages. Potential employment effects are captured because ex post behaviours are observed. Therefore, social contributions are considered as a set of payroll levies. This choice is the same as that made by the OECD.

4. Unemployment benefits are not included at the market income stage, but at the gross income stage (after social benefits). Depending on the country, the social system for the unemployed can take different forms. In particular, unemployment insurance can be more or less contributive or inclusive; in some countries, such as France or Germany, the compensation of unemployment is largely based on social minima, but in other countries (Belgium or Denmark for example) unemployment insurance is extremely inclusive. From an international comparison perspective, it does not seem relevant to distinguish unemployment benefits from other social benefits.

5. The calculation of disposable income net of VAT and consumption taxes (net disposable income) is suggested by the fact that the effective progressivity of a tax system depends heavily on the relative share of VAT in the total tax burden. In addition, the combination of high benefits financed in part by a high VAT rate affects the real purchasing power of benefits. LIS data provides only partial coverage of the taxation of households. Employee social security contributions and personal income tax are missing for some country-years, and employer social security contributions and taxes on consumption are missing for all country-years.

A large part of transfers is financed through indirect taxes such as social contributions from employers and tax on consumption. Measuring the effects of transfers without measuring the effects of taxes which fund these transfers strongly distorts the measure of redistribution. In addition, this imputation greatly improves the tax coverage of the dataset. It covers 52 percent of the national tax revenue |in contrast to 35 percent in the initial LIS data. The remaining portion of the tax revenue is mostly due to consumption tax and corporate taxation, which fell outside the scope of household survey data used in LIS. The imputations are essential to compare tax systems across countries. First, when studies

⁸ employer contributions represent for example three quarters of social security contributions in Sweden two-thirds in France, but only one-third in the Netherlands.

provide an accurate assessment of transfers, the measurement and comparison of taxation remains either partial or biased. The bias is reduced by recovering missing tax data. Second, there is a unified framework to decompose redistribution into the four policy levers where with exceptions existing studies does not isolate the specific effect of targeting and progressivity. The measure of tax redistribution is significantly improved by imputing missing taxes. The coverage of tax revenues, without being complete, measure of monetary redistribution is therefore very much improved. For all these reasons, it seems to us essential to integrate the effects of indirect levies into the analysis of the reduction of monetary inequalities. In addition, the relative share of VAT is crucial for measuring the effective progressivity of the entire tax system, well beyond the single IR scale

2-1-2. Micro-data of the Luxembourg Income Study. European data on household incomes and the role of social protection in their building

A first source of difficulties comes from the variety of conditions in which it is possible to access individual data relating to the different categories of income and transfers enjoyed by households.

Some countries, mostly in Northern Europe, have administrative registers summarizing the different incomes received by each individual or household, which can be interconnected by means of a unique identifier unique to each individual. The primary income, the various social benefits in cash and in kind, and the social and tax deductions for each individual or household can thus be easily collected. However, in a majority of Member States of the European Union, and in particular in France, the legal provisions relating to the protection of personal data proscribe the existence of a unique identifier specific to each individual. Therefore, the reconstitution of primary incomes, social and fiscal transfers and levies and disposable income at the individual level requires the implementation of explicit statistical protocols, which are generally complex and whose replication year after year is not necessarily easy.

The study uses the Luxembourg Income Study (LIS) database. The LIS data are a micro-data base on household income collected at national level and harmonized ex-post. These data have the advantage of being issued for comparison purposes, to include most OECD countries, to offer significant time depth, and to be regularly updated (by inclusion of waves of data or additional countries).

In recent years, LIS data has become the baseline for comparative redistribution studies. These works use the LIS database in a perspective close this one to measure the characteristics and effects of social states. The advantage of this intensive use is that it has made it possible to push forward the methodological stakes, the sensitivity of the results to the chosen choices, and thus allows us to benefit from the accumulated experience of the aforementioned studies.

The LIS is at the level of observed household income by using mainly survey data, and for some countries administrative data. It produces information on household characteristics, the nature of their primary and transfer incomes, and the taxes paid by households. It thus makes it possible to observe the effects of the legislation on income and its composition (actual level of taxes, benefits, etc.) but the legislation is not directly informed.

Thus, for most countries, LIS data include the different types of household income, including individual wages, social cash benefits, direct taxes, employee contributions, and household consumption behaviour. To complete this data, the study simulates employer contributions and consumption

taxation (for some countries where data are missing, employee contributions and income tax are also simulated)

2-1-3. Supplementary data on taxation and household consumption

In order to complete the LIS information, data from other databases are integrated by imputation. Data on employer social security contributions are taken from the OECD Taxing Wages module and charged to labour income at the individual level. The same applies to employee social contributions when they are not entered in LIS. The LIS data (as indeed the EU SILC data) do not account for consumption taxes or employer social security contributions. In addition, they produce non-comparable estimates of labour income including or not, by country, employee contributions and income tax. They constitute the main reason why no study has so far dealt extensively and jointly with the levy aspect and the delivery aspect of the socio-fiscal systems.

The most important methodological innovation of this study is therefore to integrate the main elements of taxation, including the elements not indicated in the LIS data: VAT and employer social contributions. By combining OECD data on current legislation and national accounts data it is possible to simulate the effects of VAT and employer social security contributions. The data on the taxation of consumption are calculated from the OECD aggregate data on tax revenues on the one hand, and the aggregated consumption from the national accounts published by the OECD on the other hand, which allows us to estimate an implicit tax rate of consumption for each country year.

Where data are not available in LIS, employee contributions and income tax may also be covered.

Technical in appearance, this innovation seems essential to seriously measure the effects of redistributive systems. Indeed, a large part of the financing of social protection in countries where it is the most generous is through indirect levies (VAT and social contributions). Also, measuring the effects of benefits without measuring the effect of the levies that fund them greatly distorts the measure of monetary redistribution.

In addition, the relative share of VAT is crucial for measuring the effective progressivity of the entire tax system, well beyond the only income tax scale.

The complexity of these protocols and their dependence on national administrative data make it impossible to obtain harmonized data at European level through simple juxtaposition of the methods used in each country to calculate at the individual level primary incomes, levies and transfers, and disposable incomes. This is why the European Union has undertaken to set up a sample survey on households' incomes and living conditions, carried out in a coordinated way in the different Member States on the basis of a harmonized questionnaire. This is the EU-SILC survey (see Box). Each country carries out this survey using its own statistical tools: for example, the French version of the survey is carried out by INSEE under the name "Survey of Income and Living Conditions" (ERCV)

Household consumption behaviour by income is derived from Eurostat's Household Budget Survey (HBS) and Household Income (EU-SILC) data and is then calibrated according to the aggregate level of consumption for each country. - from the OECD annual national accounts.

2-1-4. Institutional dimensions of socio-fiscal systems

The previous studies suggest that countries in which transfers are most targeted are less effective in reducing inequality which is referred to as the "paradox of redistribution" which can be summarized as follows: social systems that target benefits on the most modest are not the systems that best manage to reduce inequalities.

Indeed, the more a system is targeted on a small number of individuals, the less it is supported by the political majority of voters, and less financial means are devoted to it. If the redistributive impact of a Euro spent on the poorest is theoretically greater, its actual impact will in fact depend on the behavioural changes induced by the implementation of the system on all the agents. Finally, it is the most universalist systems that benefit from the widest support, and therefore from high-level funding (both because they reduce tax optimization behaviours or by adapting the supply of work and because the scale of funding depends directly on the extent of political support for the proposed system), and as a result, they are able to reduce inequality the most.

If this result has been partially questioned (see below), it has launched a series of works that studies the link between the parameters of redistribution and the redistributive effect actually obtained. The importance of the transfer rate is well supported, but the existence of a negative relationship between targeting and redistribution is contested. The study finds a positive yet weak relationship between targeting and redistribution. The impact of targeting is constrained by the size of the transfer budget as measured by the average transfer rate.

Comparative works highlight the different dimensions that contribute to the redistribution and reduction of income inequalities. On the benefit side, one can distinguish on the one hand the degree of targeting or concentration of benefits, on the other hand their average amount. In the same way, on the side of the levies one can distinguish their degree of progressiveness, as well as the average tax.

For reasons that are simultaneously economic, social and political, the different dimensions appear to be interrelated: there are no countries combining the theoretically most redistributive configuration possible, that is to say, associating with the times the highest progressiveness of levies, the most concentrated benefits on low income, a very high level of benefits and a very high level of deduction.

2-1-5. Main results of existing comparative analyses on redistributive effect

1 Social benefits (in cash)

The most robust result in the literature is that the mass effect of benefit systems dominates redistribution: the best predictor of reducing monetary inequality is the level of direct social spending.

The effect of primary inequalities on the level of social spending is ambiguous: it is the most egalitarian countries before redistribution that spend the most on benefits. But within the same country, the level of spending (and the reduction of inequality induced) increases as the level of primary inequality increases.

The effect of targeting and concentration of benefits on the most modest (the heart of the "paradox of redistribution" stated above) is the most disputed in the literature. One international comparison

finds that benefits focused on low incomes reduce inequality less than benefits that are relatively less concentrated. An increase in the concentration of benefits within the same country is associated with lower reduction of poverty and inequality. Finally, the more uniform the benefits paid to households, the greater the redistribution (this is again the mass effect that plays).

While the need for political support at the basis of the paradox of redistribution is widely recognized in the literature, its corollary that would be that targeted benefits necessarily result in lower inequality reduction (via a reduction in the social expenditure envelope) is not robust to a change in the sample or the indicators considered. The opposite result (the more the benefits are concentrated, the more the inequalities are reduced) is also not established.

2 Redistributive effect of the direct tax system

Most studies do not calculate the direct effect of the tax system, but some include it in the net benefit calculation. Progressivity emanates mainly from income tax. Thus, all tax systems are globally progressive. In analogy with the paradox of redistribution, a comparative analysis of the only tax systems, shows the existence of arbitration between degree of progressiveness of the tax and tax level.

Finally, many authors report a negative correlation between the level of social spending or "size of the welfare state" and tax progressivity. The EN3S study confirms this stylized fact and highlights the trade-off existing between progressivity and the average rate of taxes

Several recent studies break down the whole redistributive profile of several European countries:

These studies comparing the redistributive impact of the tax system and the benefit system provide some important lessons. For example, that the redistributive effect of compulsory deductions is much less than that of cash benefits as a whole or of public consumption (a result consistent with what is found in the European case or in the French case. The tax system as a whole contributes as much as public pensions to reducing inequalities, and more than other types of services taken separately.

Taking into account the structure of the levies is likely to modify the diagnosis concerning the redistribution performed by the benefit system. The result comes mainly from the United Kingdom where the increasing concentration of gross benefits on the most modest is countered by a simultaneous decrease in the progressivity of the compulsory contributions.

2.2 The contribution of the EN3S study

2-2-1 Comparison of the redistributive impact of the tax system and the benefit system

This study presents the main interest of holding together the structural characteristics of the levies on the one hand, and transfers on the other hand, for a broad spectrum of countries and years. No study has compared these characteristics at this scale.

As seen above, most existing studies do not measure the specific characteristics of the tax system (degree of progressiveness, level of levy) to bring them into line with those of benefits. One of the main reasons cited in the literature is that the survey data (LIS and EU-SILC) pose significant problems of comparability in terms of sampling. As a result, the few studies that link taxes and transfers generally exclude employer contributions and consumption taxes. In addition, they typically study only one year

per country. This study therefore proposes a significant advance in terms of methodology to deal with these problems (see below).

The combination of these two dimensions (transfers and taxes) opens up a new questioning since it makes it possible to capture the extent to which national systems combine these two tools to effect redistribution. In other words, is there in fact a complementarity between the redistribution effected by progressive taxation and that affected by a more or less generous or more or less targeted benefit system, or is there any opposite substitution?

2-2-2 Four levers of monetary redistribution

The starting concept is market income, which is the sum of labour, capital and pension income before any transfers or taxes. Then transfers are added, which converts market income to gross income. Finally, taxes are subtracted to obtain disposable income. This sequential approach allows to compare redistribution through taxes with redistribution through transfers for each country-year observation. cf appendix. These results are summarized in a form that contains the four levers of redistribution in a single formula: $\text{Redistribution} = \text{Transfer rate} * \text{Targeting} + \text{Tax rate} * \text{Progressivity}$

The greater the average transfer rate and the more intensely these transfers are targeted to the poor, the greater the redistribution. Similarly, the greater the average tax rate and more progressive the tax system, the greater the redistribution.

In theory, redistribution from taxes (or transfers) depends on the interaction between the average rate and progressivity (or targeting). The marginal effect of progressivity is not constant. For example, an increase in progressivity will have a larger impact on redistribution when coupled with a higher average tax rate. The converse also applies. The marginal effect of the average tax rate varies according to the level of progressivity observed. What is also interesting is the connections that go beyond the ceteris paribus assumption of marginal effects. A change in progressivity or targeting may come together with changes in the average tax and transfer rates, for example. Ultimately, revealing these connections requires accurate data on income, taxes, and transfers at the household level.

Luxembourg Income Study (LIS) dataset

The micro data provided by the Luxembourg Income Study (LIS), a harmonization of national household surveys. The data includes different types of household income comprised of individual earnings, monetary transfers, direct taxes, employee contributions, and household consumption behaviour. LIS data have become the benchmark for the analysis of the redistributive impact of tax and transfer systems.

The data is comprehensive, comparable, and measures the behavioural effect of the transfer system| since the recipient reports the amount of transfers actually received rather than the amount the government intends to provide.

A common alternative to LIS data is EU-SILC data in combination with the EURO-MOD microsimulation model but LIS data has broader coverage of taxes and transfers. LIS includes EU-SILC data, supplemented with administrative tax data for some countries. EU-SILC has a lower time and geographical coverage as it is restricted to European Union countries from year 2004. Second, the focus is on the ex-post impact of different tax and transfer configurations, the behavioural and political response is central to this analysis. Taxes and transfers may be separated from labour, capital, and pension income to define three stages of income. Market income measures the sum of labour, capital, and pension income before any taxes. Gross income results from adding transfers.

Subtracting income tax and social security contributions provides disposable income. The detail of LIS variables used at each income stage can be found in Table 1. The focus on the changes in the income distribution from market, to gross, to disposable income the impact of transfers and taxes. All income, tax, and transfer variables are standardised at the household level using the square root equivalence scale. We always compare transfers to market income and taxes to gross income. This is consistent with most legislation since eligibility criteria to transfers refer to market income while the tax base often includes part of transfer income.

Since transfers and taxes are benchmarked to different income concepts, it is not possible to compare the magnitude of targeting versus progressivity or the magnitude of the average rate of transfers versus the average rate of taxes. However, we can compare the magnitude of changes in inequality - the outcome variable - due to taxes and due to transfers.

The Gini inequality index is calculated for each income concept, the Kakwani index of tax progressivity and transfer targeting,⁹ and average rates of taxes and transfers over household income. The choice of income concept can influence the Kakwani index. The reference income is pre-tax income i.e. market income for the Kakwani index of transfer targeting and gross income for the Kakwani index of tax progressivity.

Transfer rate=average benefit/average market income

Tax rate=average tax/average gross income

2-2-3. Measuring the four levers of redistribution

The variables of interest are the four levers of income redistribution described above: average tax rate, tax progressivity, average transfer rate, and transfer targeting.

The concentration index summarizes the distribution of a variable over households, ordered according to household income.

1 Comparing the impact of transfers and taxes on inequality reduction

By computing the Gini index at different income stages the comparative impact of taxes and transfers is shown in Figure 8, where the step from market to gross income is due to transfers and the step from gross to disposable income is due to taxes. In most countries, taxation makes a stronger contribution to inequality reduction than transfers (excluding public pensions). There are notable exceptions, such as the United Kingdom, Ireland, or Denmark, for which there is a large reduction in inequality due to transfers relative to the reduction due to taxes.

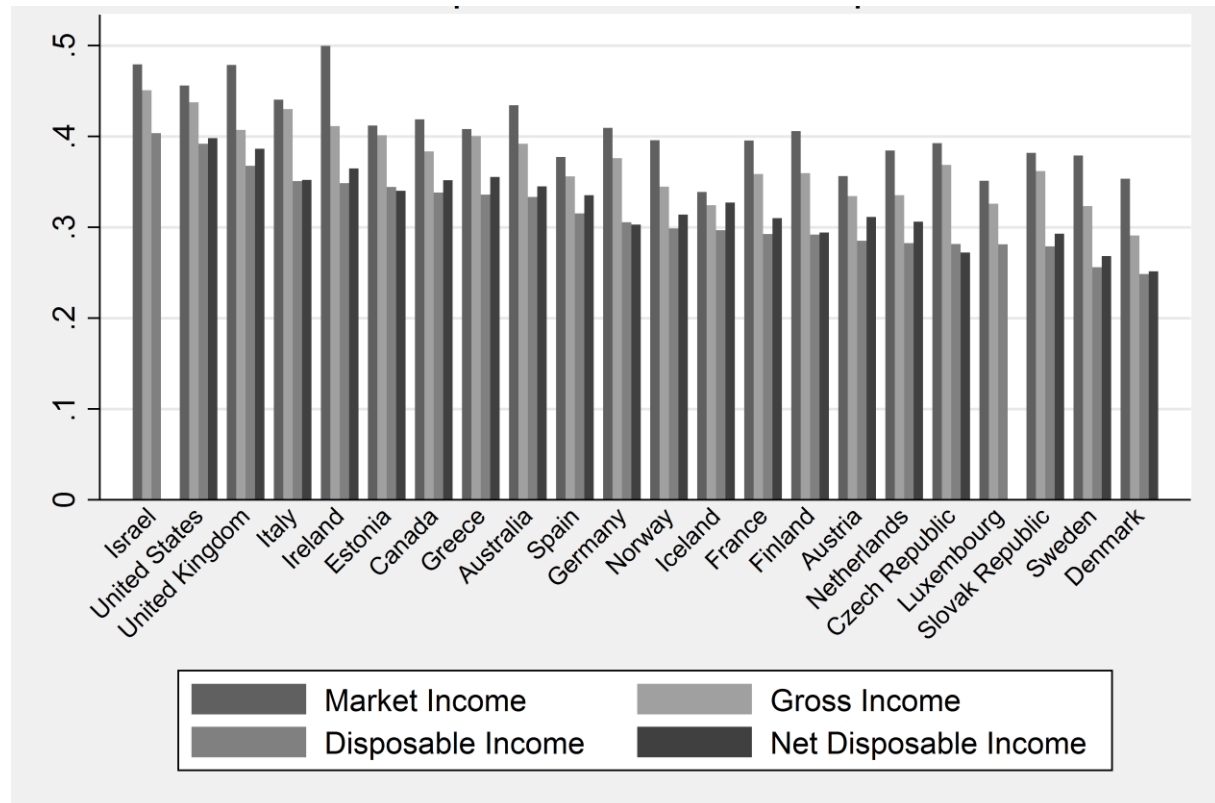
2 The overall distributive balance sheet

The analysis traced the level of inequality for each country for the different income concepts identified. Countries are distinguished by their level of primary inequality and disposable income, but also by the intensity of the redistribution effort they implement, and by the modalities of this effort (fiscal or social redistribution). If there is a strong relationship between level of primary inequality and level of

⁹ The Kakwani index uses the [Gini framework](#) to measure how progressive a social intervention is. It is equal to the difference between the Gini index for the social intervention, and the Gini index for incomes before imposition of the policy intervention. Theoretically, the Kakwani index can vary between -1 to 1; the larger the index is, the more progressive is the social intervention.

inequality in terms of disposable income, the redistribution effort appears variable from one country to another. In all countries, the system of social transfers and taxes on income and social contributions help to reduce inequalities, while taxes on consumption reinforce them slightly (with the exception of Germany, Estonia, Italy and the Czech Republic) (Figure 8).

Figure 7: Gini index at each stage of redistribution



Reading: Gini index calculated for all households in the base, for the reference year, and for each income concept. Countries are ordered by decreasing disposable income. Net Disposable Income is not available for Luxembourg and Israel. Example: in Austria in 2004, the Gini index for the Market Income is 0.36; it is 0.33 for Gross Income; 0.28 for the Disposable Income; and 0.31 for Net Disposable Income. The reference year for each country is given in the Annex (Annex 9.10).

The EN3S study presents a stylised fact that the main predictor of disposable income inequality is market income inequality. The impact of taxes and transfers is not strong enough to remove the correlation between market income inequality and disposable income inequality, which is 0.80 in our sample. Taxes and transfers do reduce inequality but countries with high market income inequality also, generally, have high disposable income inequality. Figure 5 provides more detail on the different combinations of taxes and transfers. It shows the relative contribution of taxes and transfers to inequality reduction, from market income to disposable income. One can identify two clusters of countries based on the magnitude of inequality reduction: low and high reduction clusters. In the low reduction cluster of countries, the Gini coefficient decreases by approximately 0.07 between market income and disposable income. This cluster includes Canada, Israel, Luxembourg, Spain, Austria, United States, Estonia, and Greece. In this group, tax redistribution always exceeds transfer redistribution. The tax reduction is centred around 0.05 points and the transfer reduction is centred around 0.02 points of the Gini index. In the high reduction cluster of countries, the Gini coefficient decreases by about 0.11 between market income and disposable income with 0.09 for Italy and 0.12 for Sweden. This cluster includes United Kingdom, Denmark, Norway, Netherlands, Australia, France,

Germany, Italy, Sweden, Finland, Czech Republic, and Slovakia. In this group a broad range of arrangements lead to the same magnitude of inequality reduction. A small number of countries (United Kingdom, Denmark, and Norway) display a dominant role for transfers. In other countries the role of taxes is more dominant than transfers. At the extreme, in the Czech Republic, Slovakia, and Italy the tax system contributes to more than 75 percent of the inequality reduction. Iceland and Ireland are outliers in this breakdown, with a remarkably low and high magnitude of inequality reduction, respectively.

The inclusion of employer social security contributions raises the average contribution of the tax system to inequality reduction and slightly diminishes the role of the transfer system. Czech Republic, France, Slovakia, and Sweden are sensitive to the imputations. The EN3S results challenge the existing literature by measuring the role of taxation far more accurately. The minor role of taxation suggested by previous research is due to missing employee contributions (France) or due to the bias induced by excluding employer contributions (Sweden, Finland, Czech Republic, and Slovakia).

3 Inequality reduction due to transfers

First, all the countries in the sample have targeted transfer systems to the poorest ones (that is, the distribution of benefits is more concentrated on the poorest ones than the distribution of income. The few countries with a very high degree of targeting are the United Kingdom, Ireland, Italy, the Netherlands and Australia.

The benefit rate (average benefit / market income) varies from 1% (Italy and Greece) to around 11% (Ireland 2004), with a large dispersion of countries between these two values (average of 6%,).

The data allows us to analyse the contribution of both the average rate of transfers (benefit rate, average benefit / average market income) and the intensity of targeting to inequality reduction. Ireland and the United Kingdom lie at the extreme by combining intensely targeted transfers with a relatively high average rate of transfers.

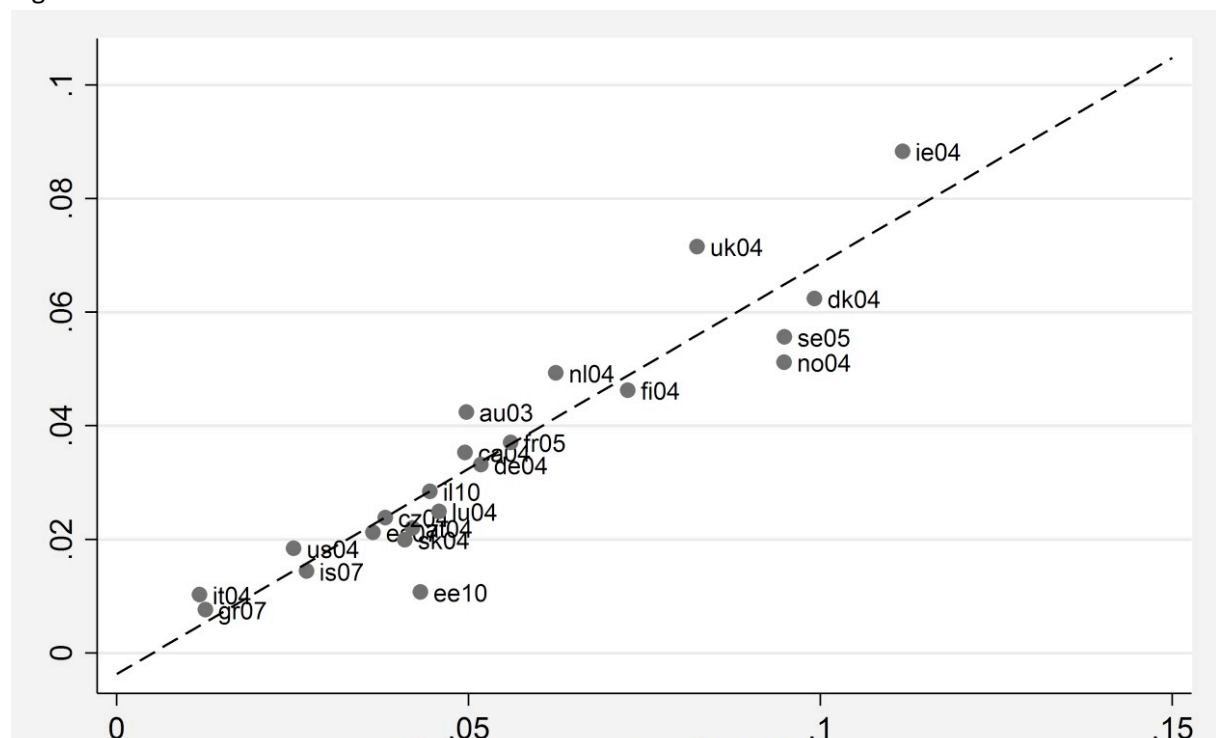
The impact of targeting is constrained by the average rate of transfers. United States targets far more intensely than Iceland, but both have a low average rate of transfers (around 2.5 percent of market income) which results in little difference in redistribution. Finland and Australia achieve similar levels of vertical redistribution around 0.05 Gini point) via the system of social transfers (excluding pensions): transfers represent around 7% of the Market Income in Finland, while in Australia they are lower (5% of the Market Income) but more targeted on the most modest. At the same time, Greece of 2007 and Italy of 2004, which also have identical benefit rates (about 1.2%) and are highly differentiated by their degree of targeting (Kakwani of -0.68 for Greece and -0.97 for Italy), almost the same level of vertical redistribution is observed (vertical social redistribution is only 0.004 Gini points higher in Italy). Said simply, targeting has little impact when there is little money to distribute. Conversely, at a much higher rate of transfers (around 10 percent of market income) the difference in targeting between the strong targets in United Kingdom and the weak targeting in Sweden results in a significantly greater inequality reduction for United Kingdom. Targeting is multiplied by the transfer rate to determine vertical redistribution; therefore, the redistributive effect of targeting is conditioned by the transfer rate. Also, comparing term by term the degree of targeting of a system does not in any way indicate the effectiveness of the system in reducing income inequalities.

Reducing income inequalities as suggested by the algebraic formula (targeting interaction and level), it can be seen that in the values measured for the different countries in the sample, the redistributive effectiveness of the targeting is conditional on the level of expenditure.

While theoretically the same level of redistribution can be achieved with an infinite number of targeting / benefit rate combinations, the observation of the countries in our sample shows that the benefit rate is the main predictor of the redistributive effectiveness of redistributive social policies. In the countries of the observed sample, the volume effect largely dominates the targeting effect and makes it possible to accurately predict the redistributive efficiency of social benefits (the correlation between the benefit rate and the effective reduction of inequalities is more than 0.9 over the entire sample) (Figure 9). In other words, the variations in targeting observed are at the origin of significant but marginal variations in the redistributive effect.

This very strong relationship, already observed, is here again confirmed. This relationship is quite robust to the correction of the Market Income that we have made (by inclusion of employer contributions) and to reasoning in the general population, excluding pensions from social transfers.

Figure 9 Effective social redistribution and transfer rate



Abscissa Transfer rate/Market Income

Ordinate Effective social redistribution and transfer rate

Reading Gini gross income-Gini market income ----fitted values

As the transfer rate increases (abscissa), the effective (ordered) social redistribution increases almost linearly; this is therefore very little dependent on the targeting of benefits. The deviations to the right of regression are explained by the effects of targeting and, more marginally, the reclassification.

In the full sample, one standard deviation increases in the intensity of targeting increases redistribution by 0.008 points (20 percent of average redistribution due to transfers) while one standard deviation of the transfer rate increases redistribution by 0.020 points (50 percent of average redistribution due to transfers).

4 Inequality reduction due to taxes

All countries have globally progressive tax systems, though individual tax features may still be regressive. The majority of the countries in the sample have a degree of progressiveness of between 0.10 and 0.15, the average progressivity index being 0.15. The few countries with a very high degree of progressivity, between 0.17 and 0.25 are France, Germany (index between 0.16 and 0.19 according to the observations), the Czech Republic and Slovakia (index between 0.19 and 0.20), the United Kingdom (from 2007), Australia, Israel (index of 0.20), and Ireland (index between 0.23 and 0.29).

The levy rate (average amount of income tax and social contributions / average Gross Income) varies from 19% (Australia 2010) to 42% (Sweden 2000). This is the microeconomic levy rate measured on household gross incomes (at comparable standard of living), and it is therefore identical neither to legal rates nor to implicit rates measured in GDP points. The few countries with a very high degree of progressivity, between 0.17 and 0.25 are France, Germany (index between 0.16 and 0.19 according to the observations), the Czech Republic and Slovakia (index between 0.19 and 0.20), the United Kingdom (from 2007), Australia, Israel (index of 0.20), and Ireland (index between 0.23 and 0.29).

As in the case of benefits, progressivity has less effect in redistribution when the level of levies is low.

However, contrary to what is observed in the case of benefits, it cannot be said that the rate effect clearly dominates the progressivity effect. In contrast to redistribution through transfers neither the average tax rate nor the progressivity of the tax system is dominant. For instance, Sweden reaches a slightly stronger reduction than Ireland, in spite of a clearly less progressive tax design, but thanks to a much higher average tax rate. In Figure 9, the regression line drawn (regression of the effective tax redistribution on the tax rate) can be interpreted as the level of redistribution obtained as a function of the tax rate, for a progressivity equal to the average of sample). The deviation of the observations from this regression line can therefore be interpreted as the extra (or lesser) effect of redistribution, due to progressivity higher (or lower) than the average.

Thus, for a levy rate of about 33%, the effective redistribution with a progressivity of 0.15 would be 0.06 Gini point, but Denmark only reaches 0.04 because of its low progressivity. With a comparable levy rate, Slovakia reduces its Gini by 0.08 because of the marked progressivity of its fiscal system.

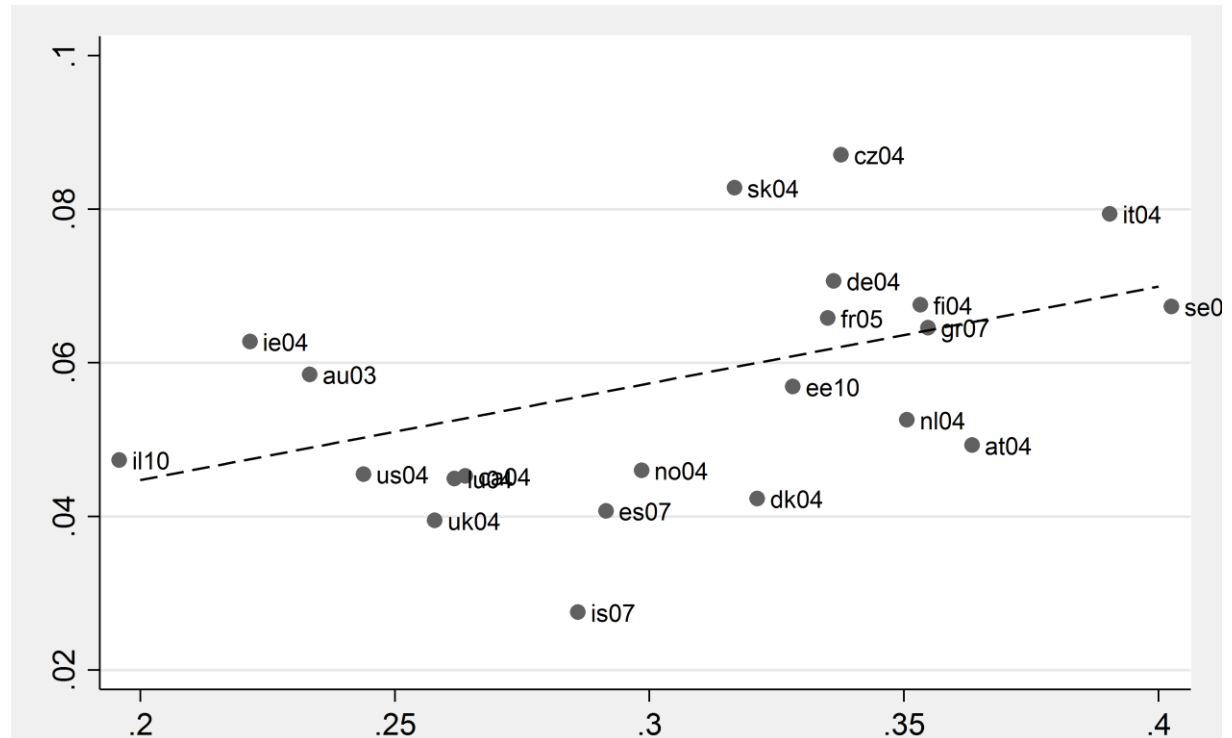
For example, Sweden 2005 and Ireland 2004 achieve levels of vertical redistribution (around 0.07 Gini points) via the tax system, but the tax rate exceeds 40% in Sweden while it is 22% in Ireland, where the actual progressivity is much higher (Figure 9).

As in the case of benefits, we observe that progressivity gaps have less effect in redistribution when the level of levies is low: levels of reduction of inequalities are narrower at levy levels higher than at moderate or low sampling levels.

Similarly, comparing only the degree of progressivity of tax systems does not in any way inform the effectiveness of tax systems in reducing income inequalities. Here again, according to the algebraic formula with the interaction between progressivity and the level of taxation, it is observed that in the values measured for the different countries in the sample, the redistributive efficiency of the degree of progressivity. However, contrary to what is observed in the case of benefits, it cannot be said that the rate effect clearly dominates the progressivity effect. In the sample observed, the two dimensions play almost equally to determine the degree of tax redistribution actually achieved: the correlation

between the effective redistribution and each of the two dimensions is of the order of 0.5. In addition, the countries with the highest level of effective tax redistribution (Czech Republic and Slovakia) combine a high level of levy and a marked progressivity.

Figure 10: Effective tax redistribution



Abscissa Transfer rate/Market Income

Ordinate Effective tax redistribution

Reading •Gini gross income-Gini market income ----fitted values

As the rate of levy increases (abscissa), the actual tax redistribution (ordinate) increases, but non-linearly. The deviations to the right of regression are mainly explained by the effects of more or less marked progressivity and, more marginally, by the effects of reclassification.

5 Effect of social contributions

One of the specificities of the study is that it allows to account for the effect of social contributions to vertical redistribution. Insofar as, according to the countries, the income tax and the social contributions play similar roles, notably in the financing of the welfare state, and in so far as the tax effect of the social contributions and the income tax is not fundamentally different (especially when both are deducted at source and individualized).

Contribution rates vary from less than 1% (Denmark in 2000 and 2004) to 30% of gross income (France). There are two distinct groups of countries, one for which the contribution rates are between 20 and 30% (Bismarckian countries, including the Mediterranean and Central and Eastern European countries) as well as Sweden, and a second group where contribution rates are below 10%, composed of Anglo-Saxon countries, Israel, Iceland and Denmark. Luxembourg, Finland and Norway occupy an intermediate position.

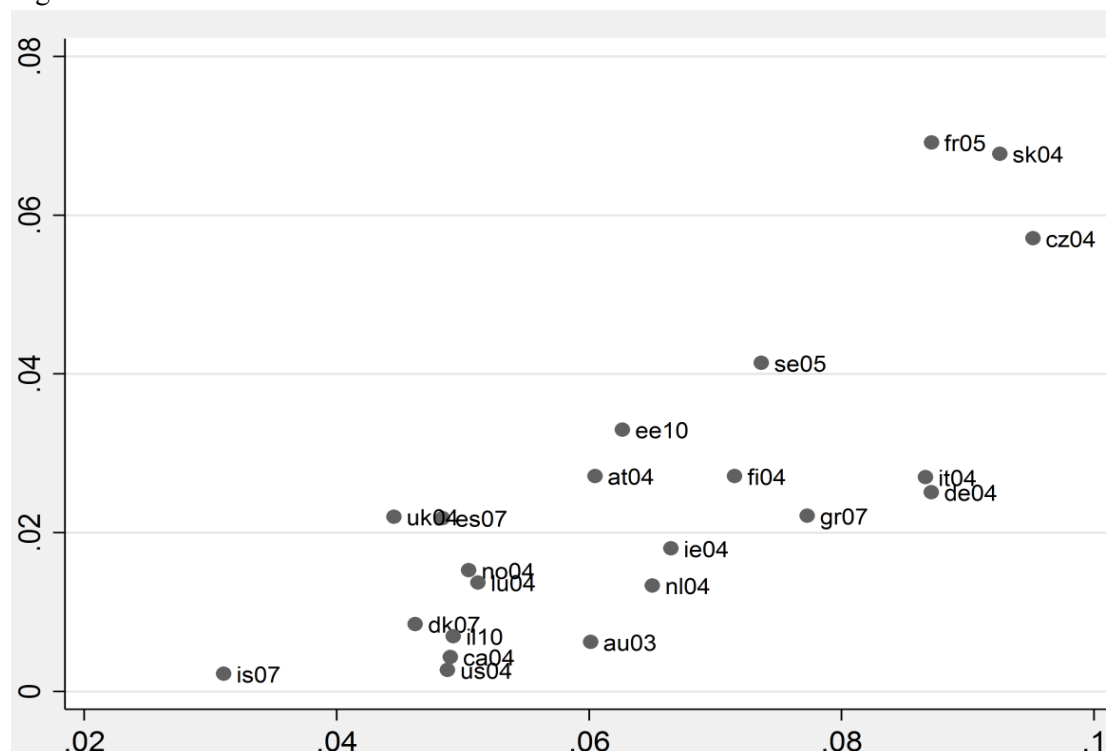
The measured progressivity is positive in all cases. It is almost always lower than the progressivity measured for all taxation (IR + Contributions), which means that income tax is always more progressive

than social security contributions. In a few rare cases (Denmark, Sweden, Finland) the measured progressivity of contributions is very slightly higher than that of the total taxation.

It should be noted here that the measured progressivity may be the result of a rate effect or a base effect: some countries experience a progressive rate of social contributions, as is the case in France (including CSG on retirement pensions), in the Czech Republic, in Slovakia, or in Ireland. Conversely, other countries have a scale strictly proportional to the income from work (e.g. Sweden), or even a regressive scale linked to the existence of a ceiling (as is the case, for example, in Germany). But in all cases, a positive index of progressivity comes from the base effect: contributions are only levied on labour income, but the most modest households (of the first two deciles) have a significant income share that comes from benefits (possibly subject to tax but not to contributions). In addition, the very high income, for which income from capital dominate, are excluded from the sample. As a result, as a trend, the rate of social contributions increases with gross income, in spite of sometimes regressive scales. For example, while the progressivity measured for France is a combination of a scale effect and a base effect, the progressivity measured for Sweden results only from a base effect (the contribution scale being strictly proportional to income in Sweden).

For half of the countries in the sample (Denmark, United States, Canada, Iceland, Australia, Ireland, Luxembourg, Norway, Netherlands, Israel) the vertical redistribution due to contributions is between 0 and 0.02 Gini points and accounts for less than one-third of total vertical tax redistribution. For a second group of countries, the vertical redistribution is between 0.02 and 0.04 and represents 30% to 60% of the tax redistribution (Greece, Germany, Sweden, Austria, Italy, Estonia, Spain, Finland, United Kingdom). Finally, for three countries in our sample, the vertical redistribution through contributions is in the range of 0.6 to 0.7 Gini points, which represents 60% to 80% of total tax redistribution (France).

Figure 11: Effect of social contribution within the tax redistribution



Abscissa Vertical tax redistribution (tax and social contribution)

Ordinate Vertical social contribution

Reading: On the abscissa, the vertical fiscal redistribution; on the y-axis, the share of this redistribution due to contributions alone. Example: In 2005 in France, the vertical tax redistribution is 0.087 Gini point, of which 0.069 is attributable to social contributions alone

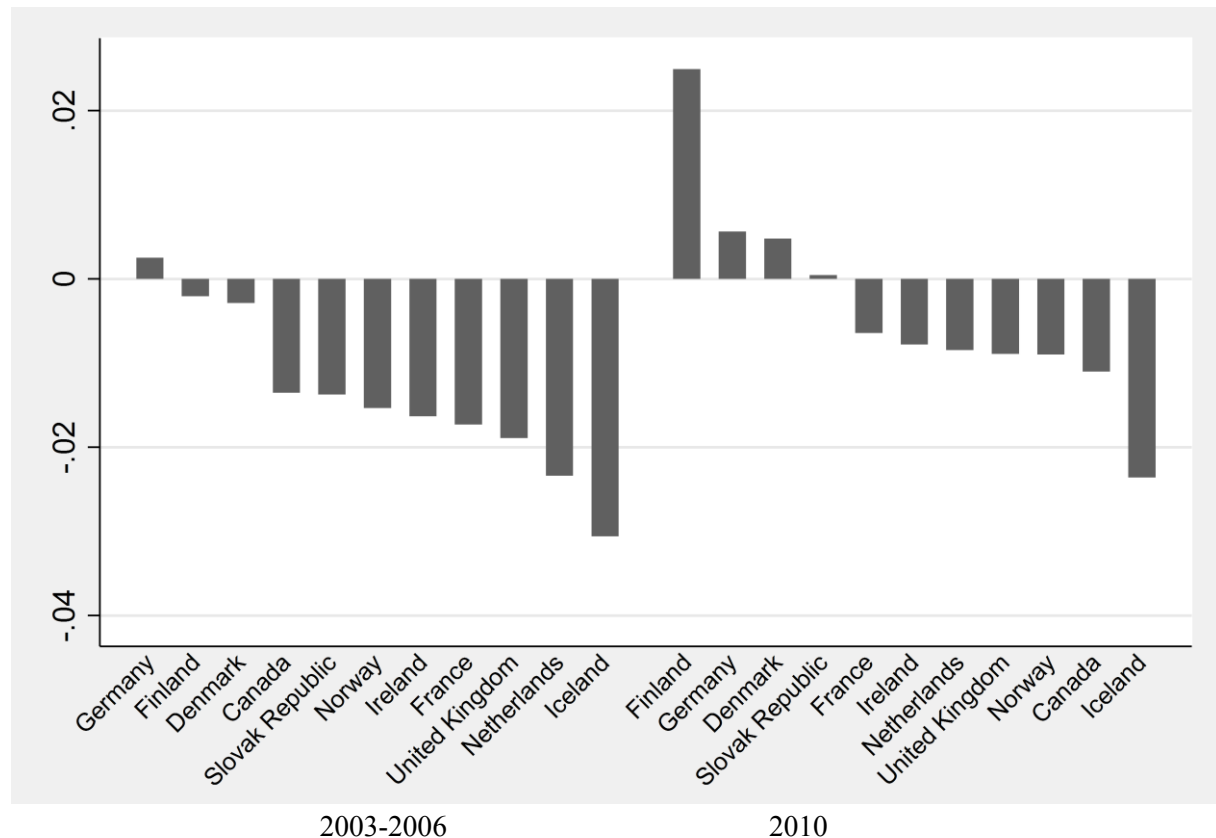
6 Consumption taxes

Due to a decreasing propensity to consume with income (except in Germany, and in several other countries during the crisis), consumption taxes appear regressive. Given the average level of consumption taxes (between 5% and 28% of disposable income), the estimated increase in inequalities is on average less than 0.01 Gini point, with a maximum for Iceland in 2007 0.03. Due to the crisis, in 2010, lower consumption differences are measured according to the level of income, and therefore lower regressive effects. The effect of consumption taxes strongly depends on the consumption behaviour of households, which varies according to their disposable income. The consumption propensities derive from Eurostat microeconomic data and calibrated on OECD macroeconomic data. First, household consumer behaviour varies from one country to another: there are countries with a relatively constant propensity to consume across income quintiles (Germany, Denmark, Finland in particular), and countries with a declining propensity to consume with income. Secondly, the consumption behaviour is not static: the time trend is quite significant, the 2008 crisis being clearly reflected in household consumption attitudes. The impact of the 2008 crisis is quite homogeneous: for countries with a marginal propensity to consume largely negative before the crisis (declining average propensity with income), it converges to zero in 2010 (propensity to consume almost constant by level of income). For countries with a marginal propensity to consume relatively small in absolute value (already close to zero), this becomes positive after the crisis: the propensity to consume then increases with income.

One possible interpretation to this remarkable effect of the 2008 crisis is that wealthy households did not change their consumption behaviour after the crisis, while their income was negatively affected by the crisis. Another interpretation, compatible with the previous one, considers the impact of the accounting, in the consumption of the households, of the imputed rents for the use of dwellings occupied by their owner as principal residence. Thus, the decline in total consumption (including these notional rents) is less important for owner households, whose distribution is asymmetric (biased towards wealthier households).

Due to a decreasing propensity to consume with income (except in Germany, and in several other countries during the crisis), consumption taxes appear regressive. Given the average level of consumption taxes (between 5% and 28% of disposable income), the estimated increase in inequalities is on average less than 0.01 Gini point, with a maximum for Iceland in 2007 0.03 Due to the crisis, in 2010, lower consumption differences according to the level of income are measured, and therefore lower regressive effects

Figure12: Actual redistribution of consumption taxes



Reading Variation in the Gini index before and after consumption taxes. The left side of the graph is for the reference period, the right side for 2010 showing the impact of the crisis. Example: In the Netherlands in 2004, consumption taxes increase the inequality (Gini index) by 0.02 between the Disposable Income and the Net Disposable Income; in 2010 this effect is reduced to less than 0.01 Gini point. Typical patterns and incompatible policy choices.

The first diagnosis is that of relative stability: the longitudinal variations are much less spectacular than the inter-country differences. On the whole sample, there is a slight upward trend in redistribution (probably due to the crisis), and a remarkable tendency to replace social redistribution with fiscal redistribution. However, the main observed trends are consistent with the trends measured for example by Eurostat: downward trend in inequalities in disposable income in the UK, up in Denmark and Germany, for example. However, the temporal depth allows to advance a certain number of analysis elements. There is no change in the profile of the countries, apart from the United Kingdom whose tax redistribution increases sharply between 2004 and 2007, such as social redistribution between 2007 and 2010, and Ireland whose social redistribution increases sharply from 2004 to 2010 and to a lesser extent in Iceland and the Netherlands. Second, there is a decline in tax redistribution in countries where transfers are already low: Czech Republic, Slovakia, Greece, Italy, United States. Finally, there is a decline in tax redistribution in the Nordic countries: Sweden, Denmark, Norway and Finland.

Unsurprisingly, the socio-fiscal system plays a role in stabilizing inequalities, insofar as Market Income inequalities appear much more volatile (they increase with the crisis) than inequalities in disposable income. Our data does not make it easy to discriminate between the "automatic" stabilization effect and the discretionary measures.

Thus, in France the Gini Market increases of 0.025 between 2005 and 2010, but only 0.012 after transfers, and 0.011 after taxes and transfers. Here, it is clearly the increase in transfers that dampens

the impact of the crisis. France, on the other hand, knows little evolution of social redistribution over the period, and an oscillation of tax redistribution (decrease from 2000 to 2005, then increase from 2005 to 2010).

The fall in the average collection rate has led to a sharp decline in redistribution in Denmark, Norway and Finland (2000-2010), in the Czech Republic or in Greece (2007-2010), and more moderate in France, in Germany and the United States in the early 2000s. Progressivity increased slightly in Germany, France and Finland while decreasing significantly in the United States and Denmark. 29

Given that tax and transfers systems are the result of political bargaining, calculation performed on observations and robust to various sub-samples (such as excluding year 2010 or using cross-section sub-samples).

There is an incompatibility between strong tax progressivity and a high average rate of taxation. Among the 22 country-years (one third of the sample, 8 different countries) for which the Kakwani index is higher than 0.17, none has a tax rate higher than 0.34. Symmetrically, among the 15 country-years (one fifth of the sample, 8 different countries) for which the tax rate is higher than 0.34, none has a Kakwani index higher than 0.17. In contrast, there is no clear relationship between targeting and the average transfer rate.

National redistribution strategies

The incompatibility between strong progressivity and high taxes is not a statistical artefact. In the range of progressivity and average tax rates observed, a country could apply the maximum average tax rate and the maximum progressivity without exceeding marginal tax rates of 100 percent. Since there is no statistical or mathematical reason to prevent a country from pairing high progressivity with high average tax rate, the conclusion is that the pattern is driven by political or behavioural constraints.

The second pattern is a positive correlation between market income inequality and the intensity of both tax progressivity and transfer targeting. While the focus is generally on whether targeting and progressivity reduce inequality, it appears that the relationship is stronger in the reverse direction. The countries with high market income inequality tend to use intensely progressive taxation and intensely targeted transfers.

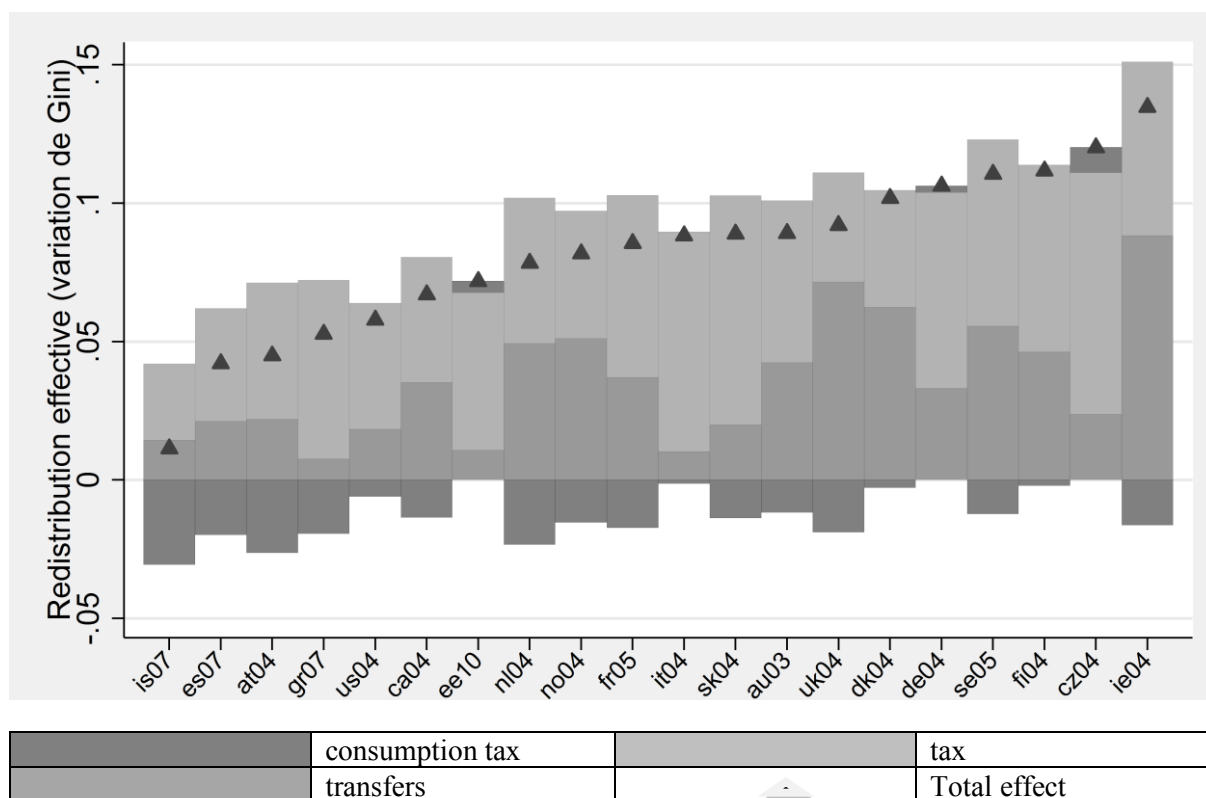
The positive correlation between market income inequality and targeting or progressivity is not deterministic. The hypothesis that progressivity and targeting may be a substitute for labour market regulation. The results suggest a political trade-off where the country either compresses the market income distribution with restrictions on the labour market, such as a minimum wage, or inequality is reduced ex-post by taxing the rich and giving to the poor. However, intense targeting and progressivity do not allow for an extremely unequal country to reduce inequality to a level comparable to a country starting at a lower base (as shown in Figure 4 above).

All countries mobilize both the tax tool and social transfers in their inequality reduction model, but the combination of the two instruments varies apart from two outliers (Ireland and Iceland, which are distinguished by an extremely high redistributive effort for Iceland, which is low for Ireland), two main groups of countries can be distinguished: countries whose redistributive effort is moderate, of the order of 0.7 Gini point (Canada, Israel, Luxembourg, Austria, United States, Spain, Greece, Estonia). In this first group of countries, social transfers (excluding pensions) are responsible for about 0.05 Gini

reduction points, while taxation is responsible for 0.01 (Estonia and Greece) to 0.03 Gini points (Canada). The second group of countries has a greater redistributive effort, reducing inequalities by about 0.11 Gini points (0.09 for Italy and slightly more than 0.12 for Sweden). Within this group, tax redistribution / social redistribution combinations are very heterogeneous. A small number of countries owe more than half of the reduction in inequality to transfers (United Kingdom, Denmark, and Norway). For the other countries, the share of taxes (excluding tax on consumption) is still the majority, but its proportion varies greatly: almost balanced for the Netherlands or Sweden, more than two-thirds for taxation in France or in Germany, and almost 80% for the Czech Republic, Italy or Slovakia. The literature most often concludes with the primacy of social benefits over tax redistribution. This dissonance stems both from the fact that most authors neglect all or part of social contributions (in the tax part) and integrate pensions with social benefits. The result the EN3S gets, the dominance of tax redistribution over social redistribution social, is therefore dependent on the methodological framework chosen (integration of pensions into primary income, taking into account contributions and sequencing of income concepts).

Finally, the reclassification remains moderate (0.007 Gini point on average), but it can reach significant values for countries with high levels of levy (effect exceeding 0.01 Gini point for the Netherlands and Austria, and of the order of 0.015 to 0.02 points for France and Germany). This can be explained by the relative importance in these countries of the levies based on labour income alone: the effective tax rate applicable to two identical income households may vary according to the composition of the household income (benefit, capital or work), leading to a number of reclassification of the order of income before and after deductions. The values of the effect of household

Figure 13: Decomposition of effective redistribution



Note: Countries ranked by actual increasing total redistribution. Reading: In France in 2005, the reduction of inequalities in Market Income to Net Disposable Income was 0.086, of which 0.037 due to transfers, 0.066 due to taxes and contributions, and -0.017 due to consumption taxes

Thus, in France we measure a Gini Market increase of 0.025 between 2005 and 2010, but only 0.012 after transfers, and 0.011 after taxes and transfers. Here, it is clearly the increase in transfers that amortizes the effect of the crisis

On the whole sample, there is a slight upward trend in redistribution (probably due to the crisis), and a remarkable tendency to replace social redistribution with fiscal redistribution. However, there is no change in the profile of the countries, apart from the United Kingdom whose tax redistribution increases sharply between 2004 and 2007, such as social redistribution between 2007 and 2010, and Ireland whose social redistribution increases sharply from 2004 to 2010.

In these countries, the decomposition makes it possible to analyse the source of the variation in inequalities in disposable income. Three striking trends are to be noticed. First, there is a clear increase in tax and social redistribution in the UK and Ireland, and to a lesser extent in Iceland and the Netherlands. Second, there is a decline in tax redistribution in countries where transfers are already low: Czech Republic, Slovakia, Greece, Italy, United States. Finally, there is a decline in tax redistribution in the Nordic countries: Sweden, Denmark, Norway and Finland.

France, on the other hand, knows little evolution of social redistribution over the period, and an oscillation of tax redistribution (decrease from 2000 to 2005, then increase from 2005 to 2010).

Obviously, a certain part is linked to the underlying variations of the Market Income: it is distinguished for example for Denmark, Germany, Spain, France or Slovakia at different periods, but we can then

distinguish the movements of fiscal and social redistribution that offset or amplify this underlying evolution.

On the transfer side point-to-point variations are moderate in magnitude and likely reflect changes in the economy (automatic stabilization effect). There are, however, some marked trends: the decrease in the targeting of transfers in the Czech Republic between 2004 and 2007 (implying a reduction in the actual effective redistribution, of the order of 0.005 Gini points), the significant increase in targeting in Germany between 2000 and 2004 (for an additional redistributive effect of 0.007 Gini points), and the substantial increase in the level of benefits in the United Kingdom (which generates an increase in the redistribution of 0.016 Gini points between 2004 and 2010) and in Ireland (from 2004 to 2010). Finally, Norway significantly increases the level of its benefits in the early 2000s but decreases their targeting in the second half of the decade.

On the contribution side, there are more marked movements. Redistribution has increased in the United Kingdom, due to a significant increase in the progressivity of the levies despite a slight fall in the average rate.²⁹ The fall in the average rate of levy has led to a marked decline in redistribution in Denmark, Norway and Finland (2000-2010) ³⁰, in the Czech Republic or in Greece (2007-2010), and more moderate in France, Germany and the United States in the early 2000s. increased in Germany, France and Finland, while it decreased significantly in the United States and Denmark.

The footprint of political arbitrations

Among the parameters we have explored, the study has identified a number of stylized facts linking these parameters to each other. As pointed out previously, no country meets all the most egalitarian parameters. But some configurations appear incompatible. They could be interpreted as the fingerprints of political arbitrations First, there is a strong inverse correlation between the level of compulsory contributions and the progressivity of the levies. This correlation can be observed both in terms of direct debits and at the level of all t debits, including consumption taxes.

But this relation is not linear: for average values one does not observe a clear relation. On the other hand, there are particularly high levels of harvest that are only achieved in countries where progressivity is low; conversely, the countries with the highest progressivity are characterized by particularly low levels of withdrawal. In this sense, our results indicate more the incompatibility of certain configurations (high level of progressivity and levies) and not a strictly inverse relationship between the two parameters.

It therefore appears empirically incompatible to have a very progressive taxation and a high level of levy. This relationship has implications for the benefits that the levy funds. In fact, there is a clear negative correlation between the degree of progressivity of the tax system and the average level of public pensions and the same link between the degree of progressivity of the tax system and the level of social spending in kind nature.

Intermediate conclusion

- A small number of countries (Ireland, United Kingdom, Denmark, Norway, Iceland) favour social transfers (excluding pensions), while in all other countries tax redistribution dominates (excluding consumption taxes). For France, Sweden, the Netherlands and Finland, this diagnosis is conditional on the inclusion of employer social contributions in the tax reduction of inequalities. Moreover, it must

be interpreted from the strict point of view of the effort to reduce monetary inequalities. An analysis in terms of adjusted disposable income (i.e. which would include public consumption) could give contrasting results, due to the widening of the scope of social benefits.

- The degree of social redistribution is overdetermined by the average rate of benefits, as their degree of targeting is not very determinative.
- Tax redistribution depends on the combination of the rate and progressivity of the levies: several countries achieve identical redistributions with very different configurations. For example, Sweden 2005 and Ireland 2004 achieve close levels of tax redistribution (Gini drop of 0.07), but the gross levy rate exceeds 40% in Sweden while it is 22% in Ireland, where their progressivity of taxes is much more marked.
- Social contributions contribute significantly to the reduction of inequalities. This phenomenon may be due in part to progressive contribution scales (France, Ireland, United Kingdom, etc.) but also to the fact that contributions equalize inequalities between active and inactive people.
- Consumption taxes have a globally regressive effect, stronger before the 2008 crisis. This effect is less than 50% of the redistributive effect of the tax system, and less than the redistributive effect of the non-pension transfer system. While not negligible, the effect of taxes on consumption appears to be a third order effect, which marginally erodes monetary redistribution. The amount of public pensions is strongly correlated with the equality of disposable income: this is due to the fact that (i) public pensions are more evenly distributed in the population than income from work and capital (including private pensions); (ii) their financing is based on large taxes that reduce inequalities between active and inactive people.

3. Evolution of national systems:

Regarding the evolution in time from the beginning to the end of the 2000s, the most striking trends affecting national configurations are:

- Increased tax and social redistribution in the UK and Ireland, and to a lesser extent in Iceland and the Netherlands.
- Reduction of tax redistribution in countries with low transfers (Czech Republic, Slovakia, Greece, Italy, United States) as well as in the Nordic countries (Sweden, Denmark, Norway, Finland).
- Relative stability of redistribution in the countries of continental Europe.

On the transfer side, we observe in particular:

- The decline in transfer targeting in the Czech Republic between 2004 and 2007, the significant increase in targeting in Germany between 2000 and 2004.
- Some variations reflect the effect of the crisis and the automatic and discretionary responses: the increase in benefits in the UK between 2004 and 2010 and in Ireland from 2004 to 2010.

On the sampling side, there are more marked movements:

- Redistribution has increased in the United Kingdom, as a result of a significant increase in the progressivity of the levies.
- The decline in the average levy rate is behind the marked decline in redistribution in Denmark, Norway and Finland (2000-2010), Sweden (2000-2005), the Czech Republic and Greece. (2007-2010), and a more moderate decline in France, Germany and the United States in the early 2000s.
- During the 2000s, progressivity increased slightly in Germany, France and Finland while it decreases significantly in USA.

3. The contribution of social protection to the reduction of income inequalities in European countries

3-1 Purpose of the study

If the primary purpose of social protection schemes is to provide a guarantee to individuals in the face of risks likely to reduce their income or increase their costs, that is to say to achieve a redistribution of income sometimes qualified “between people affected and those spared by a risk”, it is clear that the modes of entitlement to social protection benefits, related to the objective situation of people with regard to different risks, and that the terms of their funding, based on levies largely proportional to income, contribute to a very significant reduction in "vertical" income inequalities, from wealthy households to modest households. The added value of this chapter is to complete the overall view of the previous chapter by focusing on the various social benefits. This will improve the relative contribution of social benefits and social levies and the contribution of social benefits by adding some insight on the contribution of benefits in kind. The relative impact will be discussed with methodological differences with the above presented study.

Two main sources of information are available. There are studies published annually by INSEE National institute for statistics and economic studies on the impact of cash benefits and direct levies on household incomes on the distribution of incomes and a specific study carried out by INSEE, which has endeavoured to approach the perimeter of benefits and social security contributions as closely as possible by including in the analysis benefits in kind of health insurance and by deducting direct taxes that are not directly earmarked for the financing of social protection (see Box).

Brief reminder of the results of the study conducted by INSEE for the High Council for Financing Social Welfare on the redistributive effects of social protection

The study carried out by INSEE on behalf of the High Council for Financing Social Welfare made it possible to estimate the amounts of benefits received and social security contributions paid by households throughout the distribution of income.

The 20% of the poorest individuals received on average in the year an amount of net benefits from social security contributions of about € 7,000, while at the other extreme of the income distribution the 20% of the most affluent households paid a net social security contribution of about € 12,000. By comparison of income distributions before and after benefits and social security contributions, the calculations made by INSEE also showed that social protection alone reduced income inequalities by 30%. Social benefits contributed to 91% of this redistributive effort, compared with only 9% for social security contributions. It is the generality of benefit entitlements, coupled with their high amount, which explains this result, because of the large amount of income that social protection transfers between beneficiaries and contributors. In this respect, the decisive role played by social benefits in kind, including reimbursements for health insurance, was also noted, as the chart suggests.

The High Council for Social Protection Financing wanted to gain insight into the impact of social protection on the distribution of income in other European countries, starting from the data on the redistributive impact of the main cash transfers and direct levies to try to approach a measure of the impact of social protection on the distribution of income. In this respect, two observations are immediately obvious:

- Comparative studies available relate to the redistributive impact of social benefits and direct contributions on income, i.e. a perimeter close to the annual publications conducted by INSEE on French data; as for the precedent study other studies could be used from OECD on income distribution in industrialized countries, and, limited to EU Member States, the data from the European harmonized survey on incomes and living conditions of households (EU-SILC); however, these studies have the limitation of not taking into account all the social protection systems, in particular benefits and services in kind (health care, facilities and services for the care of young children ...), and to mass in direct levies on the income, levies that directly finance risks of social protection (social contributions and taxes allocated to social protection schemes) and other direct taxes (income tax, housing tax) which contribute indistinctly to State and local government budgets;

- the specific study conducted in 2013 by INSEE for the High Council for the Financing of Social Protection, covering a perimeter closer to that of social protection, both in terms of benefits (including benefits in kind) and of levies (taking into account only levies specifically earmarked for the financing of social protection), cannot be directly transposed at European or international level; on the one hand, there is no harmonized data on health and social services and services in kind; on the other hand, in almost all of France's partner countries, the levies directly allocated to the financing of social protection represent only a minority share of this one; it would therefore be appropriate to take into account, the profile of the levies which, although not directly allocated to the financing of social protection expenditure, contribute to it through their contribution to the resources of the State and local authorities, which in a number of countries have a significant share in the financial coverage of these expenditures (see Box).

**Social levies and levies contributing to the financing of social protection:
an important distinction for comparative international analysis**

In France, social contributions, the general social contribution CSG and other social contributions, which are exclusively earmarked for the financing of social protection and which are often referred to as "social security contributions", represent a decisive part (82% in 2011) of all resources contributing to the financing of social protection expenditure. The other levies that contribute to this are:

- a set of taxes which are directly but not exclusively affected (like fractions of the VAT product);
- the levies that finance the state and local government budgets, and that contribute indirectly to this financing for the part of the expenditure directly under these budgets.

In fact, in the French context, the terms "social levies" and "social protection financing" are often used interchangeably for abuse of language.

It cannot be the same in international comparison, since in many other European countries, on the one hand the weight of social contributions in the resources of social protection is lower than in France, on the other hand a significant part of the benefits can directly come from the State and local government budgets (so-called "social welfare systems"), and finally there are no taxes and duties that are fully allocated to the financing of social protection, like the CSG and social security contributions on capital income .

Also, for the presentation of this study:

- the term "social security contributions" will strictly refer to the resources fully allocated to the financing of social protection expenditure (in practice, social security contributions in all countries, and in addition, in France, the CSG and other social contributions, in the first place social security contributions on capital income);
- the term "levies contributing to the financing of social protection" refers to all the resources allocated to the financing of social protection, i.e. social security contributions, the financing

mobilized in this field by the State and the communities, and other products of social protection schemes.

The analysis of the progressivity and the redistributive impact of social protection funding should not be confused with that of social security contributions, the first to include the share and characteristics of the tax structure of the social security budgets. State and the local authorities contributing to this financing, and whose progressivity and redistributive impact may be different from that of the social security contributions itself.

3-2 European-wide data on the distribution of household incomes and the role of social protection in their building

The following developments present an overview of the sources available at European level in the field of household income distribution and the role of social protection in the building of household income, as well as the more specific statistical elements also less integrated on the redistributive effect of benefits and services in kind and on the progressiveness of different types of levies.

Although allowing a significant advance in the knowledge of the comparative impact of levies and transfers on the disposable income of households, European harmonized data remain limited by the fact that they relate to a perimeter of benefits and social contributions inconsistent with the field of social protection as a whole. It does not take into account the benefits in kind already mentioned and their potential contribution to the reduction of income inequalities in the French context. The question of the levies taken into account has been discussed but it is also still more complicated if the objective is to single the balance between benefits and resources with some taxes not specifically dedicated to the financing of social protection (e.g. income tax).

Having a comparative assessment of the global redistributive properties of European social protection systems is quite impossible. However, in 2012 the OECD published a study on the specific role of in-kind benefits and services provided by public administrations in formation of inequalities in the distribution of income. The integrated services in the study concern education, health, long term care of autonomy, social housing and care for young children. Although this study is concerned only with the redistributive impact of these benefits and services, regardless of the impact that their mode of financing may have, it may be used as a complement to general statistical data on incomes, transfers and the levies to better approach the redistributive impact of social protection. Secondly, it should be noted that, when social expenditure is financed mainly by state and local government budgets, such as this is the case in countries with "social welfare» systems, it is not immediately possible to attribute to each individual his or her personal contribution to the financing of social protection through these taxes.

An extended notion of financing social protection can, however, be reconstituted by assuming that, when social protection expenditure is financed by state and local government budgets, the amounts of the various taxes can be earmarked for social expenditure moving from «social security contributions" to a broader notion of "levies contributing to the financing of social protection".

In the absence of studies following such a procedure according to a harmonized methodology, it is however possible to attempt to gather information on the progressivity of the scales of the levies and on the fiscal structure of the State and local budgets in countries where they make a significant

contribution to the financing of social protection, in order to be able to make a global and qualitative assessment of the progressiveness of all the levies that contribute to the financing of social protection. In this regard it is possible to mobilize data collected by the OECD.

Because of the limitations of the statistical framework at European and international level, the European Commission has taken the initiative to entrust a group of experts with the task of carrying out an exploitation in a comparative perspective of the first results of the EU-SILC harmonized European survey which is mentioned supra. This project resulted in a collective work published in 2010.

High Council of Social Protection Financing which has relied in its June 2013 report on the clarification and diversification of the financing of social protection schemes, however stressed the importance of redistributive mechanisms at work in the calculation of retirement rights. These redistributive effects go through both provisions aiming at an explicit redistributive objective (minimum pensions, benefits for insured persons who have raised children, possibilities of early retirement, etc.), and more indirect mechanisms inserted into calculation of entitlements (such as, for example, the calculation of the reference salary). Health and social programs were part of public financial recovery plans implemented after the crisis, after a first stage where the stabilizers and stimulus measures have supported household income but have deteriorated situation of the public accounts. France appears as the country in which inequalities in have made the least progress since the mid-eighties, despite a clear recovery since 2008, knowing that these developments over the long period are part of a slowdown in the average growth of the gross domestic product per capita, or even a stagnation for ten years. This study confirms the results of the second chapter. Some countries, like the Scandinavian countries, have primary income inequalities of low magnitude, allowing them to reach levels of income inequality available among the lowest with a relatively more limited redistributive impact of transfers and direct debits. Others, such as Ireland, are characterized by a high degree of inequality primary incomes and must exert a considerable redistributive effort through transfers and levies to approximate the average of developed countries in terms of inequalities in disposable income. France is similar to this second category of countries, with primary income inequalities higher than the OECD average, and an impact significant redistributive of transfers and levies that allows our country to join exactly the OECD average in terms of unequal income distribution available. On the other hand, other countries with a high degree of income inequality (Spain, United Kingdom) remain, because of a limited redistributive impact of direct withdrawals and cash benefits, significantly above the average of the OECD in terms of final inequalities in disposable incomes. Finally, when trying to decompose the respective contributions of social benefits in cash on the one hand, and direct income deductions on the other hand, the reduction of inequalities in disposable income, we observe that European countries are characterized by significantly higher redistributive cash benefits than direct debits. With Sweden, France seems particularly accentuated this European trend, with a contribution of benefits to redistribution 3.5 times more than that of the levies, while Germany and the United Kingdom balance the redistributive impacts of these two mechanisms. On the other hand, the contrast is clear with the United States, the country in which the levies make 80% of the reduction inequalities of disposable income with those of primary incomes. This important contribution in Europe of cash benefits to the reduction of income explains that the measures to reduce these expenditures in the context of financial recovery plans implemented from 2010 have been able in some countries to have the effect of increasing these inequalities in recent years.

Methodology of the study carried out by DREES on the contribution of direct levies and cash benefits to the redistribution of living standards from the data of the EU-SILC harmonized European survey of 2011

The data used by DREES are from the 2011 wave of the European Income and Living Conditions Survey (EU-SILC) on 2010 revenues. Given the problems of quality and comparability of data from the EU-SILC survey (see Box 3 above), only nine countries could be included in the analysis (Austria, Belgium, Spain, France, Luxembourg, Netherlands, United Kingdom, Sweden, Italy). In particular, the data for Germany are missing from the data provided by Eurostat. Moreover, although complete, the data for Denmark showed unexplained changes which also led to their withdrawal.

In terms of the mechanisms taken into account, the analysis includes social security contributions and contributions, income tax and other direct taxes (such as the French housing tax) on the levy side. the wealth tax. Moreover, since income tax and social security contributions are collected in several countries at source, the EU-SILC survey data do not allow for a sufficiently robust distinction between these two categories of deductions. With regard to benefits, the analysis covers most cash benefits, with the exception of pensions considered as life-cycle "insurances": family benefits (including childcare benefits). children), housing benefits, unemployment benefits, invalidity benefits and benefits to combat poverty and social exclusion are taken into account, while benefits in kind are, as usual, left untouched. side.

Table 1 below shows the main results of this operation. It presents the Gini index of the distribution of living standards before and after debits and transfers. It provides the contributions of levies and benefits related to different risks to the reduction of inequalities of standard of living. As stated in the supplementary DREES note, these contributions can themselves be broken down into a first effect that traces the weight of each transfer in disposable income, and a second effect related to the progressivity of each transfer. Thus, a highly progressive benefit or deduction may not contribute significantly to the redistribution of income if it only represents a small part of disposable income.

As this is an exploratory study, and because of the limitations of the comparability of the data and the methodological choices made, the results must be commented with caution. However, the analysis shows that, except in Italy, where direct taxes account for 60% of the reduction in income inequality, it is non-pension social benefits (see Box 6) that make a major contribution to this reduction. This contribution varies from 40% (Italy) to 84% (the Netherlands), and is close to 75% for France. These contributions, however, cannot be directly compared to those of the year conducted by the INSEE (France Portrait Social [2011]) analysis of redistribution, neither with the results of the OECD work presented in the previous paragraph, which relate to different fields ¹⁰. In this respect, the main contribution of the DREES study is the detailed information it provides. on the redistributive impact of major categories of benefits by risk. It allows by elsewhere, for each of these categories, to assess whether their impact stems from the scale of benefits, or rather their weight in the disposable income of households and by as a result of the mass of income that they lead to transfer between individuals. These are unemployment benefits, which are still the first to contributing to the reduction of income inequality in most countries. This contribution is particularly important in Spain (44.5%), due to the high unemployment rate of active population in this country. In contrast, unemployment benefits play a weak role in redistribution in the United Kingdom (3,6%), given their quasi-fixed amount and their limited attribution period.

¹⁰ In particular, INSEE's annual publication includes unemployment benefits for income before redistribution. Apprehending, the latter as transfers, as the study of the DREES, has the effect of reinforcing the role benefits in terms of contribution to redistribution.

Unemployment benefits rank as the first benefit to contribute to the reduction of income inequality in most countries. This contribution is particularly important in Spain (44.5%), due to the high unemployment rate of active population in this country. In contrast, unemployment benefits play a weak role in redistribution in the United Kingdom (3,6%), given their quasi-fixed amount and limited their limited attribution period.

Country	France			Italy		
Gini initial income	0.38			0.39		
	% transfer or levy on disposable income	Progressivity of the transfer or the levy	Contribution to inequality reduction	% transfer or levy on disposable income	Progressivity of the transfer or the levy	Contribution to inequality reduction
Unemployment	2.9	-0.69	25.5	2.7	-0.43	16.4
Invalidity	0.7	-0.90	8.1	1.4	-0.74	14.5
family	1.8	-0.63	14.2	0.7	-0.64	6.2
housing	1.6	-0.91	17.8	0.1	-0.76	1.2
Social benefits	0.7	1.11	9.4	0.2	-0.59	1.8
taxes	21.5	0.09	24.9	31.8	0.13	59.9
Pseudo GINI	0.30			0.31		
Country	Sweden			UK		
Gini initial income	0.34			0.45		
Unemployment	2.1	-0.80	19.1	0.4	-1.08	3.6
Invalidity	3.4	-0.83	32.4	1.3	-1.03	10.6
family	2.6	-0.43	13.0	2.5	-0.84	16.0
housing	1.0	-1.11	12.3	21.6	-1.14	23.0
Social benefits	0.5	-1.20	7.1	1.2	-1.22	11.0
taxes	35	0.04	16.0	30.7	0.15	
Pseudo GINI	0.25			0.32		

Reading: In France, unemployment benefits represent a financial mass equal to 3.2% of disposable income Household. Their impact on the income distribution, i.e. the difference between the Gini index of the distribution of income before levies and transfers and the Gini pseudo-index of unemployment benefits, is equal to this weight multiplied by a progressivity factor, resulting from the relationship between the amount of the rights to compensation and the income of the beneficiaries, equal to -0.70: the pseudo-Gini index is therefore lower than the Gini index of incomes before deductions and transfers of $-0.70 \times 0.032 = 0.0224$. As all levies and transfers have the effect of reducing by 8 points the Gini index of the distribution of income (from 0.38 before deductions and transfers to 0.30 after), the contribution of unemployment benefits the reduction in income inequality is equal to $0.0224 / 0.08$, or 29.0% (taking into account rounding).

In all countries, family benefits are the least progressive. However, in some countries they make an important contribution to the reduction of income inequalities (19.7% in Luxembourg, 17.2% in Austria, 16.0% in the United Kingdom), because of their high weight in the disposable income of households. On the other hand, more clearly progressive benefits, such as housing subsidies and especially benefits for the fight against social exclusion (mainly social minimum income support), do not generally contribute more than the previous ones to the redistribution of benefits. It is only in three countries (France, the Netherlands, and especially the United Kingdom) that housing subsidies make a greater contribution than family benefits to redistribution: they contribute to almost a quarter of the redistribution provided by the UK socio-fiscal system. This is only the case in Spain and the Netherlands for benefits relating to the fight against social exclusion. Finally, in some countries, disability benefits can be markedly progressive and represent a significant proportion of household disposable income. In Austria, Belgium, Spain and Luxembourg, they are close to a 20% contribution to income redistribution, which is as high as 29% in the Netherlands and 32% in Sweden.

The levies taken into account in the study (income tax, wealth tax, social levies and social contributions, without being possible to distinguish them within the whole) contribute in their turn to a height between 18% (in the Netherlands) to 60% (in Italy) to reduce income inequality. In the latter country, and while the progressivity of the levies is relatively high, those of the benefits are particularly low,

which explains the very strong part that the levies take to the redistribution. Overall, the progressivity of the levies seems relatively moderate overall, with differences between countries. In the Netherlands, we note that the limited contribution of levies to redistribution results from a very modest progressivity despite a high weight in disposable incomes, while conversely the contribution of levies is quite high in Spain (29 %), despite a modest weight, but thanks to greater progressivity.

Some final lessons can be drawn from this synthesis of available studies on the contribution of cash benefits and social to the reduction of income inequalities. First of all, it is necessary to underline the great heterogeneity of the methodological choices made in the different studies, particularly as regards the field of services and deductions selected; This results in significant variability of results, particularly with respect to the respective contributions of benefits and taxes to income redistribution

Secondly, with regard to the risks for which benefits contribute the most to reducing income inequality, unemployment benefit benefits have the greatest impact; With regard to other risks (disability, family, housing, social exclusion), the DREES study mentions a variety of situations in different countries, which in any case does not allow definitively to conclude between the progressivity of the scales of benefits and their contribution to redistribution: the mass of income transferred via these benefits plays as showed is also taken into account, notably for family benefits, but also, in a more novel way, for invalidity pensions in countries like the Netherlands or Sweden. This last remark highlights the political dimension of the management of social protection. The high level of employment which seems a cornerstone of limited income inequality could be achieved by measures which could improve the activity rate through easing the claim for invalidity benefits or early retirement pensions.

3-3 Milestones towards a more comprehensive approach to the redistributive impact of benefits and social protection levies

The previous analyses are limited by the fact that they do not take into account benefits in kind, and that they concern levies that are not all specifically dedicated to the financing of social protection.

If the objective of estimating the impact on the individual incomes of all benefits and social security contributions in countries other than France is in the current state of available data impossible to achieve, the following, developments nevertheless propose some progress in this direction, by means of complementary analysis, mobilizing the specific studies that have been carried out on two particular points:

-the redistributive role of social benefits in kind;

-the progressivity of social security contributions and, more broadly, levies contributing to the financing of social protection.

The study published by the OECD in 2012¹¹ on the specific role of in-kind benefits and services provided by public administrations in reducing inequalities in income distribution mentioned earlier points first, that these benefits and services represent on average a higher share of national wealth than social

¹¹ Verbist, G., M. Förster and M. Vaalavuo (2012), "The Impact of Publicly Provided Services on the Distribution of Resources: Review of New Results and Methods", *OECD Social, Employment and Migration Working Papers*, No. 130, OECD Publishing, Paris, <https://doi.org/10.1787/5k9h363c5szq-en>.

benefits in cash (13% of GDP, compared to 11%, respectively). This highlights the significant potential contribution to reducing the inequalities of these devices, as had been observed on French data.

In fact, the calculations in the OECD study estimate the impact of the monetary value of benefits and services in kind to an average of 28% of household disposable income. On their own, they would help reduce income inequality by 22%, and the risk of income poverty by 40%. Health and social services (health, assisted living, childcare) account for two-thirds of the contribution of all in-kind benefits and services to the reduction of income inequalities, of which more than half the only health services. This contribution of health and social services to the redistribution of income seems particularly important in Germany, Belgium and France, and conversely more modest in the Netherlands.

The authors of the study also point out that, in a more global and long-term perspective, services and services in kind have a second, more indirect, impact on income distribution, by improving employment and remuneration opportunities. Beneficiaries throughout their working lives, considering, in particular, the links between health status and job retention or the impact of an adequate supply of childcare facilities on female activity.

Breakdown by type of benefits of the contribution services in kind to income redistribution

	Gini Index disposable income after benefits in cash and direct contributions	Gini Index disposable income after benefits in kind and services	Impact of benefits in kind and on income inequality	health	Education	children	Housing	Long term care
France	0,28	0,22	-22,5%	57,8%	25,8%	8,0%	4,9%	3,6%
Italy	0,32	0,26	-19,0%	48,4%	41,1%	7,9%	2,6%	
Sweden	0,24	0,18	-23,8%	52,1%	23,5%	6,3%	0,4%	17,6%
UK	0,33	0,25	-22,9%	54,6%	30,6%	3,1%	4,8%	7,0%

Source: Verbist G., M.F. Förster, M. Vaalavuo (2012) OECD calculations. Data are for the year 2007. Countries are ranked by increasing absolute value of the impact of benefits and services in kind on the inequality of income distribution.

Note: The Gini index values of the disposable income before and after benefits and services in kind are rounded, and therefore the impact of these benefits and services presented in column (3) does not exactly coincide with these values.

Conclusion

In all countries, the system of social transfers and taxes on income and social contributions helps to reduce inequalities, while taxes on consumption reinforce them slightly.

All countries mobilize both the tax tool and social transfers in their inequality reduction model, but the combination of the two instruments varies. Many countries achieve the same performance of reducing inequality through very different combinations of fiscal and social redistribution. The cross-country comparisons reveal patterns of policy configurations. Different countries lie at the extreme of each policy lever and there is a broad variety of configurations that provide the same magnitude of redistribution. No country strains all four levers simultaneously, so redistribution is delivered by either taxes or transfers but not both.

If redistribution is decomposed into four key levers: the progressivity and average rate of taxes, and the targeting and average rate of transfers, this approach provides three main findings. First, when excluding pensions, tax redistribution dominates transfer redistribution in most countries. Second, cross-country heterogeneity in the intensity of targeting explains very little of the observed variation in inequality reduction. For transfers, most of the redistributive effect is due to the rate of transfers. In contrast, both progressivity of taxes and the average tax rate have large impacts on tax redistribution. Third, political trade-offs are visible. High average tax rates do not appear in conjunction with highly progressive tax systems.

These findings result from an encompassing approach. The impact of taxes and transfers is studied simultaneously, rather than in isolation. Future comparative studies should take a similar approach since the balance between tax and transfer redistribution varies significantly across countries. The usual framework that considers only one side of monetary redistribution, be it through taxes or through transfers, leads to a biased perspective for international comparisons. It also highlighted the bias that arises from restricting analysis to the direct taxes. Since the share of taxes is compared to the share of income, there is no deterministic relationship that would cause the pre-tax level of inequality to be positively correlated with the progressivity index of the tax paid by households (as it appears in household surveys). The tax incidence often falls on households despite being paid by employers. In the context of inequality reduction, income tax, employee and employer contributions are economically equivalent. In contrast to taxes, within transfers, one lever is dominant. Most of the impact is due to the rate of transfers while targeting plays only a minor role. Although it would be theoretically possible, no country pairs a low transfer rate with sufficient targeting to match the magnitude of redistribution reached by a high transfer rate. In general, the strongest redistribution occurs in countries with high social benefits. On the other hand, the degree of targeting of benefits is decorrelated with the redistributive performances of the countries.

Moreover, some redistributive configurations seem incompatible. Thus, a high tariff escalation (including taxes on consumption) coexists nowhere with a high level of compulsory levies (and therefore does not coexist with a high level of benefits in kind or pensions).

The EN3S study is a step forward since it provides far more comparable data on the tax side (thanks to the imputation of employer contributions). Further improvements could be attained by making use of administrative data). Recent works on a country-by-country basis allow the distribution over households to match national accounts. Further research is also needed to include consumption tax and transfers in kind into the analysis. These improvements could alter the presented findings, as

consumption tax is suspected to be regressive, while transfers in kind are likely to have strong redistributive effects. Lastly, the paradox of redistribution must be approached with careful consideration. Analyses that focus on one or two specific levers of redistribution among the four identified could not only lead to ambiguous results but also deliver misleading policy recommendations. As shown in the chapter two, the relative importance of each lever depends on its combination with other levers. For example, the marginal contribution of targeting on redistribution strongly depends on the average rate of transfers. The redistributive policies are the outcome of a political balance of these four levers. In this study, we observe an incompatibility between strong progressivity and high rates of taxation. This result indicates that governments cannot change redistributive policies in isolation. New theories of redistribution should recognize that pulling down one lever moves another.

These results are not the simple result of technical parameters. The budget of social policies is itself a function of the structure of taxation and social benefits, through political mediation. The resulting real redistribution that we observe in this study is the result of these interactions.

Finally, it is the countries whose primary distribution of income is the most unequal that make the greatest use of benefit targeting and tax progressivity, without being able to compensate for the high initial inequality.

Altogether it is frustrating for the author to conclude in a way that leaves the policymaker to an undetermined situation even by limiting the scope to tax and social benefits. It would be more gratifying to give a definitive recipe. The necessary trade-off of technical combinations leave the entire responsibility to the policymaker to answer the problem raised by Anthony Giddens on how to manage the fact that this generation's inequality of outcome is the next generation's inequality of opportunity. On the one hand if tax policy seems to be the most efficient tool for redistribution, it has also the advantage to embody clearly the objectives of a redistribution policy. On the other hand, for social transfers the best way to show a will of redistribution is to target the benefits to the neediest. This trend which seems to combine justice and efficiency. Actually, these two aims could be missed. The original objectives could be endangered. France enjoyed till recently a rather satisfactory fertility rate due to a rather high level of female activity rate and to a rather generous system of child benefits. It is too soon to give a definitive answer but the link with the targeting seems to influence negatively the fertility rate by reducing the disposable income of certain families but also by casting a message about child care. Justice could be limited. The targeting of benefits is often accompanied by a reduction of the basis of spending. The coverage of the health risk which seems almost totally achieved in developed country is under the threat of the split between a basic coverage and supplementary services which will be funded out the pocket of the customer directly or indirectly through private insurances with a massive regressive effect

Appendix 1 - Primary income, initial income, disposable income, consumption units

Primary income refers to the gross income received by an individual or a household, and includes the remuneration of work, whether paid or unpaid, and that of invested wealth.

Initial incomes are a concept similar to primary incomes but taking into account the fact that some social transfers do not exclusively fulfil a redistributive function. This is the case for replacement income (retirement or invalidity pensions, unemployment benefits, daily sickness benefits or work-related accidents), which in many countries are offset by the payment of social security contributions. on income from activity, and the individual amount of which is linked to the contributory effort made

While these "insurance" schemes certainly achieve a certain redistribution of income because of the positive or negative difference between the contributions paid by and the benefits promised to each individual, it would not be correct to consider that absence of these replacement incomes, individuals would have no primary income. It is indeed likely that in this case they would adhere to savings or insurance schemes. The notion of initial income aims to broaden that of primary income to all or part of these replacement incomes. In practice, if all studies include retirement pensions and sickness and work injury per diems in initial income, despite proven but specific redistributive effects (see Box 6), the treatment of Unemployment and disability-related benefits are more heterogeneous in international comparisons, but a majority consider them as transfer incomes, given the diversity of the way these benefits are awarded in European countries.

The disposable income corresponds to the initial income increased by the social transfers not already taken into account and reduced by the direct deductions on the income (social contributions, national and local taxes on the income, taxes on the fortune).

To compare the living standards of households of different composition, the incomes thus calculated are also related to the number and age of the household members, taking into account economies of scale. The equivalence scale commonly used is to assign a share or "unit of consumption" to the first adult, half a share to other persons over the age of 14, and 0.3 to children up to 14 years of age. The standard of living of a household and of each individual is equal to the income (primary, initial or available) divided by the number of household consumption units.

Appendix 2 - Definitions of inequality indicators

The interquintile relationship

A first measure of the redistribution used in this report is given by the variation of the interquintile ratio ($Q5 / Q1$), according to whether it is calculated on the distribution of the initial standards of living or on that of the available standards of living. $Q5 / Q1$ is the ratio of income per consumption unit above the top 20% ($Q5$) to the income per consumption unit below which the 20% of the population at standard of living are the lowest ($Q1$). If these ratios decline after transfers and withdrawals, this means that the living standards of the households located at the extremes of the distribution have come closer, and therefore the redistribution has reduced the inequalities between these points of the distribution.

The European Union uses an indicator of inequality, " $S80 / S20$ ", which reports the mass of income accumulated by the 20% of the most favored individuals to the mass of income accumulated by the 20% of the most vulnerable individuals

The indices or coefficients of Gini and pseudo-Gini of the various levies and benefits

Unlike the previous ones, indicators such as the Gini index take into account the entire population and income distribution. This index indeed measures the concentration of living standards as the distance from the real distribution of income per unit of consumption to a hypothetical situation of perfect equality of standards of living (each unit of consumption receiving the same percentage of the total income of the country). The distribution of living standards is even more unequal as the share of total income per unit of consumption perceived by the lowest $x\%$ is less than $x\%$, and it is this difference that the Gini index measures.

To compare the more or less redistributive nature of different benefits or levies the index of "pseudo-Gini" could be used. It is constructed as the Gini index, but it considers the share of the total mass of a service or a levy according to the position of households in the distribution of initial income. It is then possible to decompose the index of inequality of disposable income according to the index of the initial income and those concerning the transfers and the levies, and to evaluate for each one of them its relative contribution to the reduction. some inequalities. It depends both on its relative weight in overall income and on its progressivity.

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The rate and intensity of poverty

A final indicator relating to income distribution is the poverty rate, which measures the proportion of people whose standard of living, before or after transfers and withdrawals, is below a threshold conventionally set at 60% of the median standard of living in the country. It is therefore a relative measure of poverty, which takes into account the general standard of living of each country. The intensity of poverty is equal to the relative difference between the poverty line and the average or median standard of living of people whose standard of living is below this threshold. It allows an assessment of the severity of the economic situation of poor people through the distance between the average income of poor people and the poverty line.

Appendix 3 - List of abbreviations

AT Austria
BE Belgium
BG Bulgaria
CY Cyprus
CZ Czech Republic
DE Germany
DK Denmark
EE Estonia
EL Greece
ES Spain
EU European Union
FI Finland
FR France
HR Croatia
HU Hungary
IE Ireland
IT Italy
LFS Labour Force Survey
LT Lithuania
LU Luxembourg
LV Latvia
MT Malta
NL Netherlands
PL Poland
PT Portugal
RO Romania
SE Sweden
SI Slovenia
SK Slovakia
UK United Kingdom

OECD Organisation for Economic Co-operation and Development

P9010 Decile ratio: Ratio between the ninth and the first Decile

P5010 Ratio between the fifth and the first decile

P9050 Ration between the ninth and the fifth decile

GDP Gross Domestic Product

EU-SILC European Union Survey on Income and Living Conditions

Appendix 4 - Description of EU dataset

The European Union Statistics on Income and Living Conditions (EU-SILC) is an instrument aiming at collecting timely and comparable cross-sectional and longitudinal multidimensional microdata on income, poverty, social exclusion and living conditions. This instrument is anchored in the European Statistical System (ESS).

The EU-SILC project was launched in 2003. The EU-SILC instrument provides two types of data:

- Cross-sectional data pertaining to a given time or a certain time period with variables on income, poverty, social exclusion and other living conditions

- Longitudinal data pertaining to individual-level changes over time, observed periodically over a four-year period.

Social exclusion and housing condition information is collected mainly at household level while labour, education and health information is obtained for persons aged 16 and over. The core of the instrument, income at very detailed component level, is mainly collected at personal level.

The EU-SILC has been used to provide data on the structural indicators of social cohesion (at-risk-of-poverty rate, S80/S20) and in the context of the two Open Methods of Coordination in the field of social inclusion and pensions.

Since 2010, the outset of the Europe 2020 strategy, EU-SILC data is being used for monitoring the poverty and social inclusion in the EU. A headline poverty target on reducing by 20 million in 2020 the number of people under poverty and social exclusion has been defined based on the EU-SILC instrument. In the same political context, a broader portfolio of indicators, including plenty of numerous EU-SILC based data, constitutes the Joint Assessment Framework (JAF) of the EU2020 strategy.

The EU-SILC harmonized European survey

Developments in social policy cooperation between EU Member States have highlighted the need for social indicators, such as the proportion of poor people, unequal income distribution or barriers to social inclusion. access to healthcare, to measure the progress made by the Union in terms of social cohesion, in the context of the "Lisbon Strategy" (2000-2010), then the "EU-2020" strategy (2010 -2020). The need was quickly felt to have harmonized statistical sources between Member States allowing the regular production of these indicators and their comparison in level and evolution.

A first attempt in this direction was the "community panel of households", carried out on the basis of "gentleman-agreement" by 14 European countries including France, in annual waves from 1994 to 2001. With the accession of ten new countries, the European Commission has taken the initiative to propose a regulation governing the harmonized implementation of statistical surveys on incomes and living conditions of households in all Member States. Framework Regulation No 1177/2003 of 16 June 2003 thus provides for the implementation in Member States of a so-called EU-SILC (Survey on Income and Living Conditions) survey, which includes "primary" areas since 2004. Treated each year (basic data, income, social exclusion, work, housing, education, health), and "secondary" fields on various themes (material deprivation, indebtedness, sharing of resources within the household ...), which have been defined at the initiative of the Commission from 2005.

The survey consists of interviewing the same sample of households and individuals nine years in a row. It is in the form of a household questionnaire and individual questionnaires, which collect information on three broad categories of resources that can be used to reconstruct household disposable income:

- primary income from work and wealth, the latter including individual private pensions;
- transfers received, including social benefits for major risks (cash sickness, invalidity, old age-survival, family, housing, unemployment, poverty-social exclusion); education-related allocations and current transfers between households are also collected;
- taxes on income and social contributions, knowing that on the one hand the distinction between these two categories of levies cannot be systematically carried out in all countries, and that on the

other hand the distribution of social contributions between those paid by the employees and those paid by the employers are not always completely carried out; wealth taxes are also collected Despite the emphasis on the quality of data collection from the EU-SILC survey, these have several limitations:

- people living in "collective households" - especially disabled or elderly people residing in institutions - are not included in the sample of respondents;
- in many countries - with the exception of the Nordic countries and France - data on household incomes are derived from respondents' declarations, and not information held by tax and social authorities;
- the list of social benefits which the survey seeks to collect by respondents is limiting, and in particular is limited to cash benefits, excluding benefits in kind.

Appendix 5 - France

France's level of income inequality is around the OECD average. However, inequality has increased more in France than in many OECD countries between 2007 and 2012 (1.4 pp, compared to +2.3 in the United States, +1.4 in Italy, or 0.2 in Germany).

☒ This is a significant change with the previous long-term trend, as income inequality kept stable in France since the 1980s unlikely to the majority of OECD countries including Germany or the United States, where it increased significantly

☒ During the crisis, income inequality before taxes and transfers, i.e. "market income inequality", increased noticeably in France (2.9pp). The increase in market income inequality on household incomes was nevertheless cushioned by the taxes and benefits. As a whole, income inequality increased by 1.6% in France.

☒ In France, the top 10% real incomes increased by 2% per year on average between 2007 and 2011, while it decreased on average by 1% within the OECD.

☒ The bottom 10% fared worse than the median and the top during the crisis, as in a majority of OECD countries. Their income decreased by 1% per year. Within the OECD, income of the bottom 10% decreased on average by 2%.

☒ Income poverty increased during the crisis in France as in many countries (+1pp). As a comparison, it increased by 2pp in Spain, and decreased by 1pp in Germany and the United Kingdom. The age profile of relative poverty also changed. 11.4% of the children are living in poverty, compared to 13% on average in the OECD. Poverty rates are the lowest among the elderly (3.8%, the 5th lowest in the OECD).

☒ Wealth inequality reinforces income inequality. The top 10% of the income distribution owns half of net private household wealth, similarly to the OECD average. The bottom 40% of the wealth distribution owns less than 2% of the net private household wealth, which is less than the OECD-17 average (3.3%)

The major source of market income inequality, labour income inequality, increased between 2007 and 2011 in France due to the wage dispersion among workers; the fall in employment did not impact the change of market inequality.

On the long run, changes in the earning distribution and labour market conditions are related to the development of non-standard work: temporary, part-time contracts or self-employment. In France, one third of the employed population were non-standard workers in 2013, a similar share as the OECD average.

Non-standard employment represented a half of employment growth in France between 1995 and 2007, slightly more than the OECD average, where non-standard work represented 42% of employment growth. Between 2007 and 2013, non-standard employment increased by 1.7% on average, while standard employment decreased by 1.3%. In Great Britain, non-standard increased by 3%, while standard work kept stable overall; in Germany, non-standard work increased by 2%, and standard work by 4%.

Non-standard workers in France are more often women (63%) than on average in the OECD (55%), in part-time employment; there are also more young people (46%) compared to the OECD average (40%).

As in other countries, non-standard workers in France face a wage penalty compared to those in standard jobs. On average in France, a temporary worker earns 40% less a year than a standard worker (50% on average in the OECD, see figure 2). This is not only due to the number of hours worked. Among temporary employees for example, the *hourly wage* penalty is around 25% (compared to 30% within the OECD).

Non-standard work, and especially temporary employment is less acting as a stepping stone than other countries like Austria or Great Britain. As an example, 20% of employees in temporary contracts in 2008 were full-time permanent employees in 2011 in France, compared to 30% in Austria and 48% in Great Britain.

The gender pay gap did not reduce in France since 2000, contrarily to many countries where it decreased. Women still earn 14% less than men, compared to 15.5% on average in the OECD. This is much higher than Norway and Denmark (7-8%), but also Spain (9%) and Italy (11%), and lower than Germany (17%).

Taxes and transfers largely reduce market income inequality in France (by 33%, compared to 27% on OECD average, see figure 3). Simulated results suggest that tax-benefit measures introduced as from 2009 had a small positive impact on family incomes, due to benefit rises and despite slightly higher taxes and contributions. Families with low and middle earnings were net gainers. Incomes of families earning above the average wage remained about the same, as tax rises cancelled out the rise in benefits.

Appendix 6 - United Kingdom

Income inequality in the United Kingdom is the sixth largest in the OECD, in terms of the Gini coefficient, and has been well above the OECD average in the last three decades. In 2012, the average income of the top 10% was 10.5 times higher than that of the bottom 10%, up from a ratio of 7 to 1 in the mid-1980s and 9 to 1 in the mid-1990s. This compares to an OECD average of 9.6 to 1 in 2013 (Figure 1).

☒☒ Wealth inequality is higher than income inequality. In the UK, the top 10% owns around 47% of all net wealth, while the top 10% of income earners get 28% of income. The financial crisis has exacerbated the concentration of wealth at the top. While on average net wealth has declined since 2007, the net wealth of the top percentiles has increased.

☒☒ Income poverty (measured as half of the national median household income), concerns around 10.5% of the population in the United Kingdom, a rate close to the OECD average of 11%.

☒☒ Between 2007 and 2012 the average household disposable income fell by accumulated 8.6%, less at the bottom tenth of the distribution (6%) and more at the top tenth (11%).

UK economy has been effective in creating jobs in the recovery from the Great Recession. Unemployment is low relative to other countries and total employment is at an all-time high. However, many of the new jobs are self-employed and part-time jobs (see Figure 2).

Non-standard workers (employees in temporary and part-time contracts and self-employed) earn considerably less than standard workers (employees in full-time jobs). In the UK, the annual earnings of self-employed workers are 50% lower than of standard workers (Figure 3). Temporary workers earn 20% less per hour than their standard counterparts, while this reaches 30% less for part-time workers.

Part-time jobs and self-employed work do not improve the chances of getting a permanent full-time job compared to being unemployed. In fact, in the UK, the self-employed are less likely of moving into a standard job than the unemployed.

Non-standard work increases inequality and poverty. In the UK, despite the strong poverty-reducing effect that the tax-benefit system has on households with non-standard workers, the poverty rate for households relying solely on non-standard work is 20%. That is 5 ½ times higher than for households relying on standard work.

The tax and benefit system discourages the transition from part-time to full-time work in the UK as over two-thirds of additional earnings would be taken away by higher

taxes and reduced benefits, in particular income tax, housing and family benefits. Self-employed workers face considerably different fiscal treatment. Although they are not eligible for statutory sick pay, they pay considerable lower social insurance contributions.

Taxes and benefits reduce income inequality among the working-age population by a quarter in the UK. This is in line with the OECD average, but below other European countries such as France (33%), Germany (29%) or the Nordic countries (33%).

Changes in taxes and benefits have reduced household income on average in the UK since 2007. Main losers were unemployed low-earning families without children and higher-earning families. Middle-earnings families benefited from the rise of the income tax basic allowance. While in other countries income tax changes played an important role, in the UK fiscal consolidation was driven mainly by changes in benefits.

The appreciation of property prices well above inflation has been a key factor leading to higher median wealth in the UK compared to other OECD countries.

The increase in female employment participation and narrowing of the gender wage gap had a strong equalising effect on the distribution of household income in the UK. Had the proportion of households with working women and the gender wage gap remained the same as 20 years ago, inequality would have been almost 5 Gini points higher, i.e. approaching 0.40.

What can policy makers do?

To tackle inequality and promote opportunities for all, In the United Kingdom, this would include initiatives such as:

- ☐ Improve work incentives for part-time workers, particularly women. Reform of childcare elements of working tax credit by increasing refund rate, reducing taper rate or introducing a disregard for second earners in couples.
- ☐ Increase the value of free childcare by increasing flexibility for users and reduce the cost by increasing flexibility of provision.
- ☐ Close monitoring of implementation, distributive and labour market incentive effects of the universal credit reform, designed to simplify the means-tested benefit system
- ☐ Reduce youth labour market problems by investing in qualification, reduce school dropouts. Improve career guidance and encourage the combination of work and study.
- ☐ Increase taxes on wealth rather than labour. For example, update property valuations of the council tax to support public finances, improve equity and dampen large swings in house prices.

Appendix 7 - Italy

Italy's level of income inequality is slightly above the OECD average. It increased in the early 1990's, as it did in many OECD countries, such as Germany or the United States (see figure 1).

In Italy, the average income of the top 10% income earners was 11 times higher than that of the bottom 10% in 2013.

The burden of the crisis on household incomes was unevenly shared. The bottom 10% fared worse than the median and the top in Italy during the crisis. Their income drops on average by 4% a year between 2007 and 2011, while the median income decreased by 2% and the income of the 10% richest, by 1%. A similar pattern has been observed in other Mediterranean countries like Spain and Greece, where incomes of the poorest declined by 13% in each, and median incomes, to a lower extent (4% and 8%).

Poverty increased markedly during the crisis in Italy compared with many countries, especially when measured with a poverty line fixed in time (i.e. at pre-crisis level). The so-called anchored poverty increased by 3 points between 2007 and 2011, the 5th highest within OECD countries.

Children are the age group with the highest incidence of poverty (17%, compared to 13% on average in the OECD). Young people aged 18-25 also face slightly higher poverty rates than on average in the OECD (14.7, compared to 13.8%). The elderly (65 or above) face a lower poverty rate than on average in the OECD (9.3%, compared to 12.6%).

The major source of market income inequality, labour income inequality, increased by 0.65% between 2007 and 2011 in Italy, mainly due to the wage dispersion among workers; the fall in employment did not impact the change of market inequality.

On the long run, changes in earnings distribution and labour market conditions are to be related to the development of non-standard work: temporary, part-time or self-employment (NSW). In Italy, 40% of the employed population was working under non-standard work arrangements in 2013 (33% within the OECD). Between 1995 and 2007, while standard employment increased only by 3% in Italy (compared to 10% on average in OECD countries), non-standard grew by 24%, the highest increase within OECD countries (7.3% on OECD average). Between 2007 and 2011, standard employment decreased by 4.3% in Italy (by 3% in the OECD), while non-standard employment increased by 1.6% (0.8% on average in the OECD).

The profile of non-standard workers in Italy is quite specific, with a large share of self-employed (42%, compared to 32% on average in the OECD), more often men than in other OECD countries (49% compared to 45% on average in the OECD) and higher-educated than in many OECD countries (41% of highly educated people employed, compared to 29% on average).

As in other countries, non-standard workers in Italy earn lower annual earnings than do those in standard jobs. On average, a temporary worker earns 25% less per hour than a standard worker's (Figure 2). Within the OECD, the gap stands slightly higher, at 30%. In Italy, 53% of non-standard workers are the main earner in their household (compared to 48% within OECD countries). As a result,

their households are more often living with an income below the poverty line. Italy is, after Greece, the country with the largest share of household with non-standard worker' households within the population at risk of poverty (37% of poor households, compared to 27% on average in the OECD). Among the OECD, tax and benefit systems lift on average one third of workers under non-standard arrangements out of poverty. In Italy, they do not alleviate in-work poverty among households in nonstandard work. The gender gaps remain high in Italy. The employment gender gap in Italy is among the highest in the OECD (18%, compared to 12% in the OECD), although it reduced substantially since the 1990s (from 32% in 1992). The employment gender gap is especially marked when accounting for the part-time work. The full-time equivalent employment rate for women barely reaches 38%, compared to 52% on OECD-average.

package, centred around four main areas: Promoting greater participation of women into the labour market, fostering employment opportunities and good-quality jobs; strengthening quality education and skills development and adaptation during the working life; and a better design of tax and benefits systems for efficient redistribution. In Italy, this would include initiatives such as:

- Labour market policy improving workers' existing skills and matching them with available jobs needs to be supported by an education system that provides initial knowledge and skills needed in the labour market.
- Encourage female labour force participation with more flexible working-hours arrangements and promote wider provision of good quality care for children and the elderly.
- Ensure that the tax benefit system makes work pay,
- Improve the design of taxes and benefit system, in order to shift the tax burden away from labour towards consumption and wealth. Broaden tax bases and continue efforts to reduce tax evasion.
- Make wage setting more flexible to achieve low structural unemployment rates and in mitigate the direct impact of shocks on employment by facilitating adjustments (OECD Employment Outlook 2014).
- Protect individuals rather than specific jobs. Address the differences in the level of social protection enjoyed by the different groups of workers, especially self-employed. A more efficient social security system is important so that displaced workers are protected against poverty and given facilities to help finding new jobs, while avoiding pervasive disincentives for labour supply.
- Maintain efforts to fully implement the unified unemployment benefit system. Require recipients to actively seek work, and to accept employment or training when offered.
- Encourage social partner1s to allow modification of national wage agreements at the firm level, through agreement with representatives of a majority of the firm's employees.

Appendix 8 - Key indicators on the distribution of household disposable income and poverty, 2007, 2011 and 2013 or most recent year

	Gini coefficient			S90/S10 income share ratio			Income share in total income						Poverty rate (relative threshold)					Poverty rate (threshold "anchored" in 2005)					
							Bottom 10%	Bottom 20%	Bottom 40%	Top 40%	Top 20%	Top 10%	Total			By age group, latest available year							
	2007	2011	2013 or latest available year	2007	2011	2013 or latest available year	2013 or latest available year (%)						2007	2011	2013 or latest available year	Children (< 18)	Youth (18-25)	Adult (26-65)	Elderly (> 65)	Working poor	2007	2011	2013 or latest available year
France	0,293	0,309	0,306	6,8	7,4	7,4	3,4	8,5	21,8	61,3	39,5	25,3	7,2	8,0	8,1	11,4	13,7	7,1	3,8	7,3	..	7,1	7,5
Italy	0,313	0,323	0,327	8,9	10,3	11,4	2,2	6,9	19,7	62,8	39,7	24,7	11,9	12,8	12,7	17,4	14,7	12,1	9,3	12,0	10,7	13,5	14,9
Sweden	0,259	0,273	0,274	5,8	6,3	6,3	3,5	8,7	22,7	59,0	36,1	21,9	8,4	9,7	9,0	8,3	17,8	7,4	9,4	5,8	..	5,1	4,8
United Kingdom	0,361	0,344	0,351	11,1	9,6	10,5	2,7	7,2	19,3	64,5	42,6	28,0	11,6	9,5	10,5	10,4	10,9	9,6	13,4	5,3	11,4	10,6	11,8
OECD	0,314	0,314	0,315	9,2	9,5	9,6	2,9	7,7	20,6	62,2	39,4	24,6	11,0	11,2	11,2	13,3	13,8	9,9	12,6	8,7	7,6	9,5	9,9

Appendix 9 - Synthesis of the literature

authors	Dependant variable	Explanatory variable	data	Main results
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Korpi et Palme (1998)	(Gini Market-Gini disposable)/(Gini Market) Poverty Rate	Size of Transfers / Gross income Coeff of concentration (transfers)	LIS 1985 11 countries	Redistribution increases with size of transfers and diminishes with targeting
Ponthusson et Kenworthy (2005)	Gini Market-Gini disposable	Gini of Market income	LIS 1980's 1990's 16 countries	Redistribution increases over time in proportion to the increase in market inequality
Prasad et Deng (2009)	Esping-Andersen decommodification index Aggregate social expenditure (replicated by Allan & Scruggs)	Kakwani progressivity index (taxation)	LIS 1979-2004 13 countries	Tax progressivity associated to less decommodification and a lower level of expenditure
Kenworthy (2011)	(Gini Market-Gini disposable)/(Gini Market)	Coeff of concentration (transfers)	LIS 1980-2005	Relation btw targeting and inequality reduction varies over time and methodology (also citing Whiteford 2008) Taxation far less important than transfers and public good in reducing inequalities
Marx et al. (2013)	(Gini Market-Gini disposable)/(Gini Market) Poverty Rate	Size of Transfers / Gross income Coeff of concentration (transfers) Share of transfers received by the lowest quintile	LIS 2000-2005 25 countries	Redistribution increases with the size of transfers; the relation btw redistribution and targeting is weak
Avram, Levy et Sutherland (2014)	S-Gini (Gini including a specific ponderation of lower income)	Kakwani progressivity index (taxation, benefits and allowances)	EU-SILC, Euromod late-2000's 27 countries	The largest elements of the tax-benefit systems (pensions and direct taxes) = the ones impacting strongest on redistribution despite occasionally having low progressivity
Brady et Bostic (2015)	Poverty rate	Size of Transfers / Gross income Coeff of concentration (transfers)	LIS mid-2000's 37 countries	Poverty is negatively associated with transfer's share and horizontal redistribution ("Universalism")
Mc Knight (2015)	(Gini Market-Gini disposable)/(Gini Market) Change in poverty rate btw market and Disposable income	Coeff of concentration (of gross and net transfers)	LIS 1974-2010 4 countries (IT,F,SP,SW)	Over time increase in concentration correlated with less poverty/inequality reduction
Beramendi et Rehm (2016)	Attitudes towards social insurance / redistribution	Coeff of concentration (of gross and net transfers)	OECD mid-2000's ISSP 2006 (opinion survey)	Progressivity of the tax and transfer system = major determinant of the predictive power of income on preferences for redistribution
Joumard, Pisu et Bloch (2012)	S-Gini (concentration coefficients), but based on hh ranked on Disposable income due to data limitation	Kakwani progressivity index	OECD data	<ul style="list-style-type: none"> Countries with a more unequal distribution of Market income tend to redistribute more Cash transfers (including pensions) reduce income dispersion more than taxes The redistributive impact of cash transfers varies widely across countries High-tax countries tend to have less progressive household taxes. The progressivity of labour taxes (including social security contributions) has increased in the majority of OECD countries The PIT is the most progressive tax Social security contributions, consumption taxes and real estate taxes tend to be regressive in most countries
Immervoll et al. (2006)	difference between the Gini coefficients of income before (G_X) and after taxes and/or benefits (G_{X+TB})	Aucune decomposition (progressivité, taille, reclassement)	EUROMOD	Countries that achieve a high level of inequality reduction through their tax-benefit system do this mainly by using non means-tested benefits and taxes

Immervoll et Richardson (2011)	Gini indices of Market income and net-of-tax income		14 OECD countries working age population LIS data 1985-2005	Since the 1980s, market-income inequality grew by twice as much as redistribution
Sutherland, Decoster, Matsaganis, Tsakloglou, (2009)	$(\text{Gini Market} - \text{Gini disposable}) / (\text{Gini Market})$, income ranked by Disposable income			
Tychev et al. (2015)			EU-SILC 6 pays	Hors retraites, les prestations sociales contribuent davantage à la réduction des inégalités que les taxes (Espagne, France, Pays-Bas, Royaume-Uni, Suède). Sauf en Italie.
Verbist & Figari (2013)	RE; VE	Kakwani index Average tax rate	EU-15 1998-2008 EUROMOD	Progressivity of taxes is one of the major determinants of the equalizing capacity of taxes, mainly due to tax exemptions Countries with a high pre-tax inequality level tend to redistribute rather less There is a trade-off between progressivity and the average tax rate

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Projet de recherche conjoint EN3S – Sciences Po, LIEPP

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Haut Conseil du financement de la protection sociale

Analyse comparée des modes de financement de la protection sociale en Europe 2014

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