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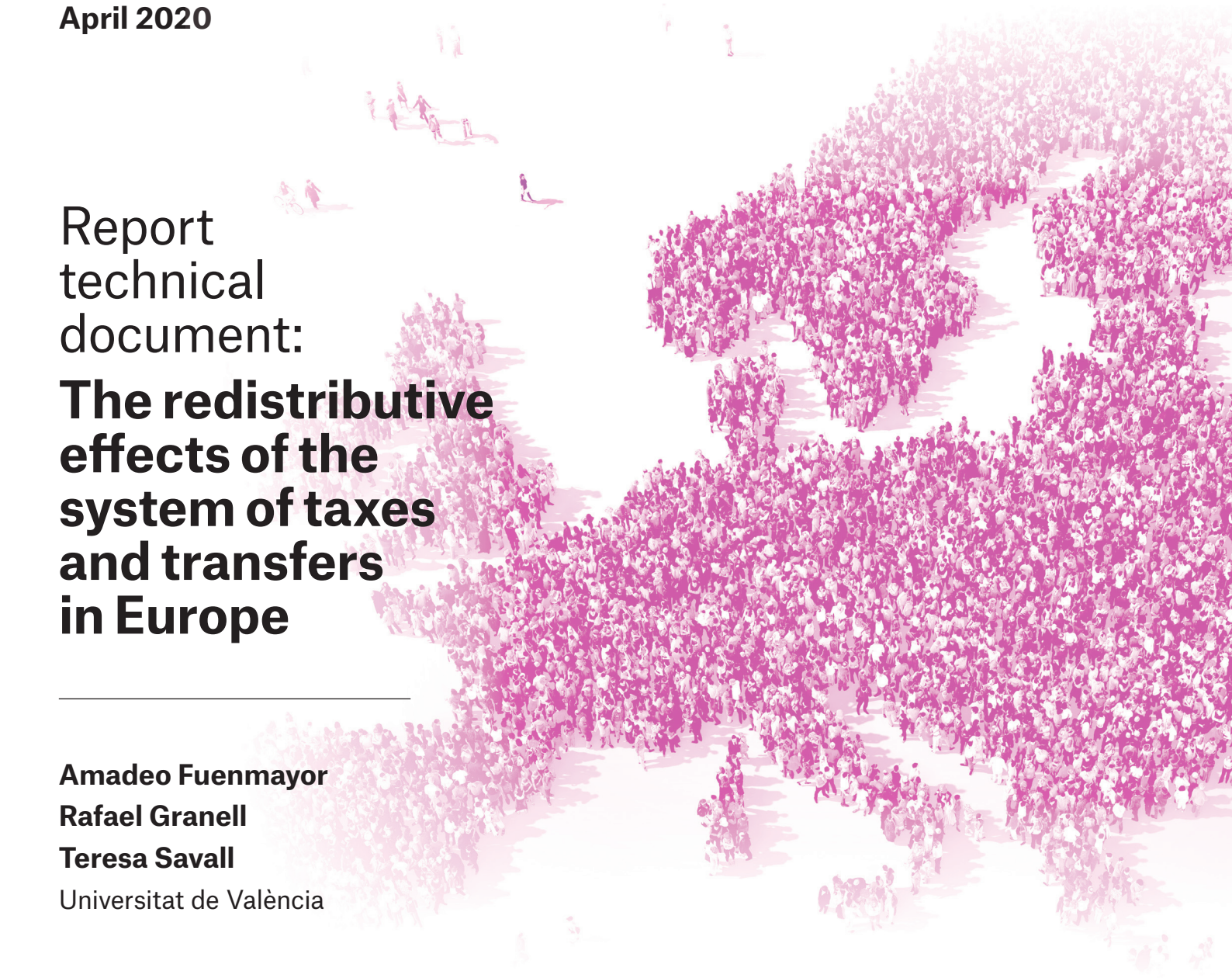

Report technical document:

The redistributive effects of the system of taxes and transfers in Europe

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Credits

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1 Introduction and general framework

Since the onset of the economic crisis, the level of inequality in Spanish society has grown substantially. The data provided by the Living Conditions Survey (ECV, as abbreviated in Spanish) conducted by Spain's National Statistics Institute (INE, as abbreviated in Spanish) showed that clear trend, although it began to change in 2015 with some signs of recovery.

The role played by the public sector to redress inequality is essential. Redistribution is done through both the tax system and public expenditure, in which the policy of providing those most in need with monetary benefits is particularly significant.

This report focuses on the analysis of the distributive effects of such benefits, which can be classified under nine sub-headings: unemployment, old age, survivor (including widowhood and orphanhood), sickness, disability, family, social exclusion (basically the minimum integration income), education and housing.

In redressing inequality, the necessary revenues to finance benefits are also important, especially workers' national insurance contributions and income tax. They reduce households' disposable income but also have redistributive effects. The second section of this report studies the evolution of the volume of taxes and public transfers in Spain, as well as their distributive effect, using information available in the ECV. It begins with the situation as it was in 2007, before the economic crisis, in order to analyse how the public sector has reduced levels of market-derived inequality. The study goes up to 2016, the last year for which information was available.

The third section compares the Spanish tax and benefits system to those of the other European countries (herein, EU-28). In order to carry out that task, EUROMOD,[1] the tax-benefit microsimulation model for the European Union (EU), was used. The model makes it possible to estimate the volume of revenues and expenditures derived from the public policies implemented by the 28 European countries in 2018, and the results are compared.

This comparison enables different patterns to be identified in the behaviours of European countries, and allows the Spanish system to be situated within that environment. The redistributive effect of tax and benefit policies at European level is also compared. This gives an insight into the effectiveness of the main Spanish inequality reduction policies.

Lastly, the fourth section of this report aims to offer ideas for the development of alternative public policies that could have a greater effect on inequality reduction. The EUROMOD model is used to simulate these new policies, taking into account previous experiences of other European countries. The Spanish system could redress market income inequality to a greater extent than it currently does by modifying some of the aspects of social exclusion benefits and workers' national insurance contributions.

1. The results presented here are based on EUROMOD version H1.0+. EUROMOD is maintained, developed and managed by the Institute for Social and Economic Research (ISER) at the University of Essex, in collaboration with national teams in each EU Member State. The process of developing and updating EUROMOD is financially supported by the EU Programme for Employment and Social Innovation (EaSI) (2014-2020). The results and their interpretation are the responsibility of the authors.

2 The tax and benefit system and inequality in Spain

This section analyses the evolution of Spanish household inequality between 2007 and 2016, taking into account the effect produced by tax and public monetary benefit policy.

This period was selected for two reasons. First, the data source used, the ECV (EU Statistics on Income and Living Conditions [EU-SILC] for Spain), because it employed the same methodology for this 10-year period, thus enabling the results obtained to be compared. And second, because it encompasses the entire economic recession period as well as the early years of economic recovery. The analysis begins with 2007, a year when the Spanish economy was still in a growth phase, with an unemployment rate of around 8%, a budget surplus and a level of public debt below 40%.

The effects of the economic crisis began to be noticed in 2008. Those effects worsened the situation of Spanish households until 2013, the year when a slow process of recovery started. The analysis ends with 2016, the last year for which information was available.[2]

2.1. Expenditure and revenue analysis

Firstly, it is necessary to consider the variation in income and monetary benefit amounts in relation to GDP over the period analysed, and whether those amounts affected Spanish households' disposable income.

As shown in Chart 1, the starting point is households' market income, which includes income from work, capital, economic activities and other sources (children's income and transfers received from other households). The monetary benefits received from the public sector are added to that market income to arrive at gross income. Based

2. The income values contained in the ECV refer to the year before each survey was conducted. Although we used the survey for the years 2008-2017, the results refer to the period 2007-2016.

on that latter variable, direct taxes paid by the households are deducted to arrive at disposable income.

Illustration 1. **Households' market income, gross income and disposable income**

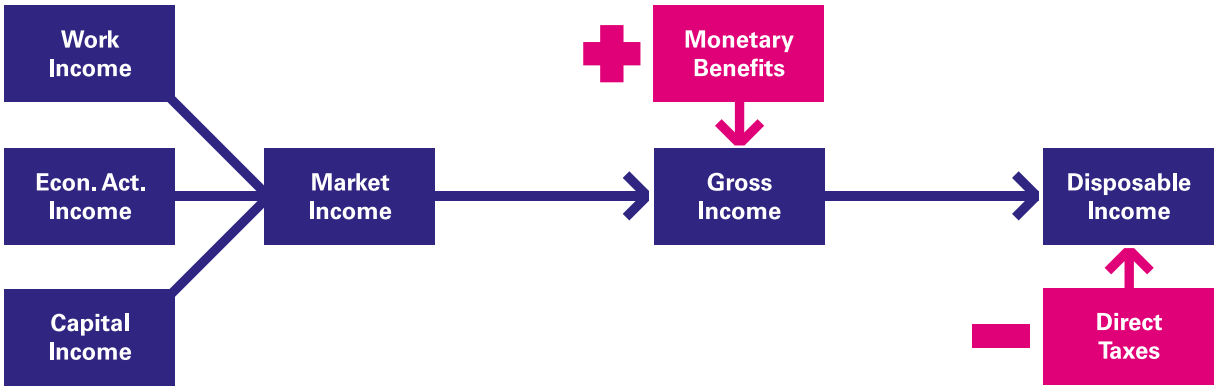
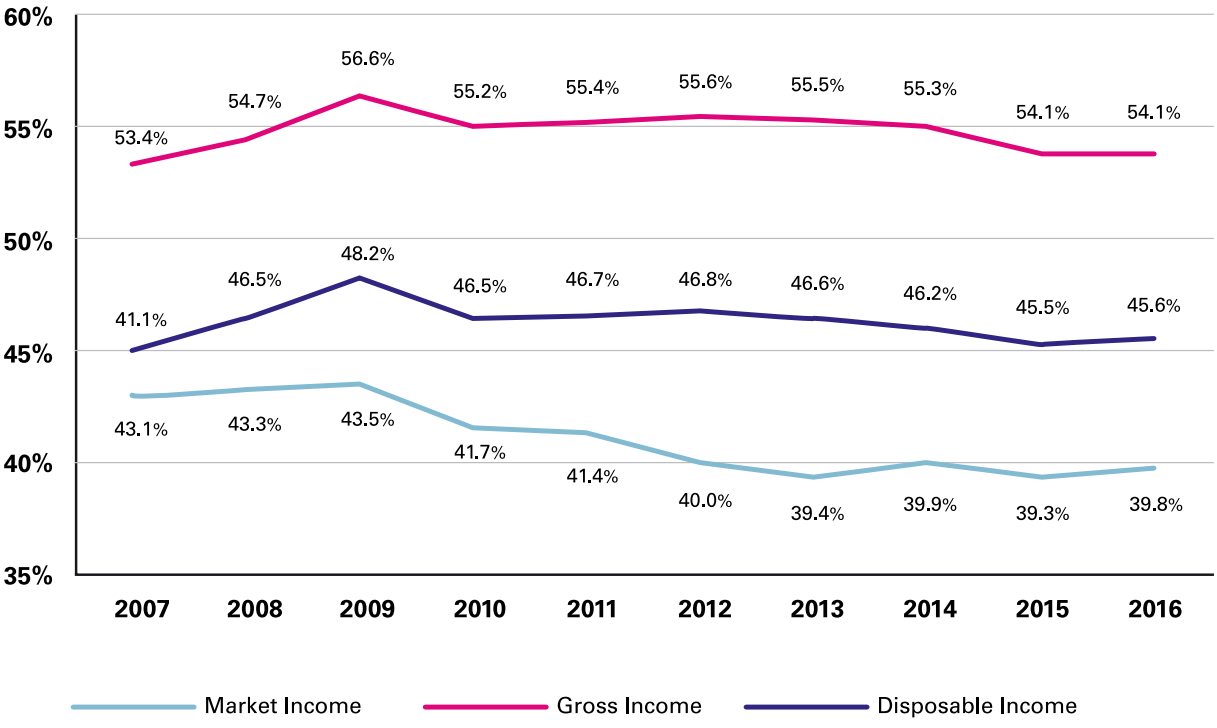


Chart 1 presents the main data of the evolution of those variables over time in relation to GDP. Market income was initially higher than 43% of GDP (from 2007 to 2009), but it fell to 40% in 2012. It stabilised at around 39-40% in 2013. That is, as a percentage of GDP, it fell significantly from the onset of the crisis, without showing any signs of recovery.

Chart 1. **Households' market income, gross income and disposable income (% GDP)**



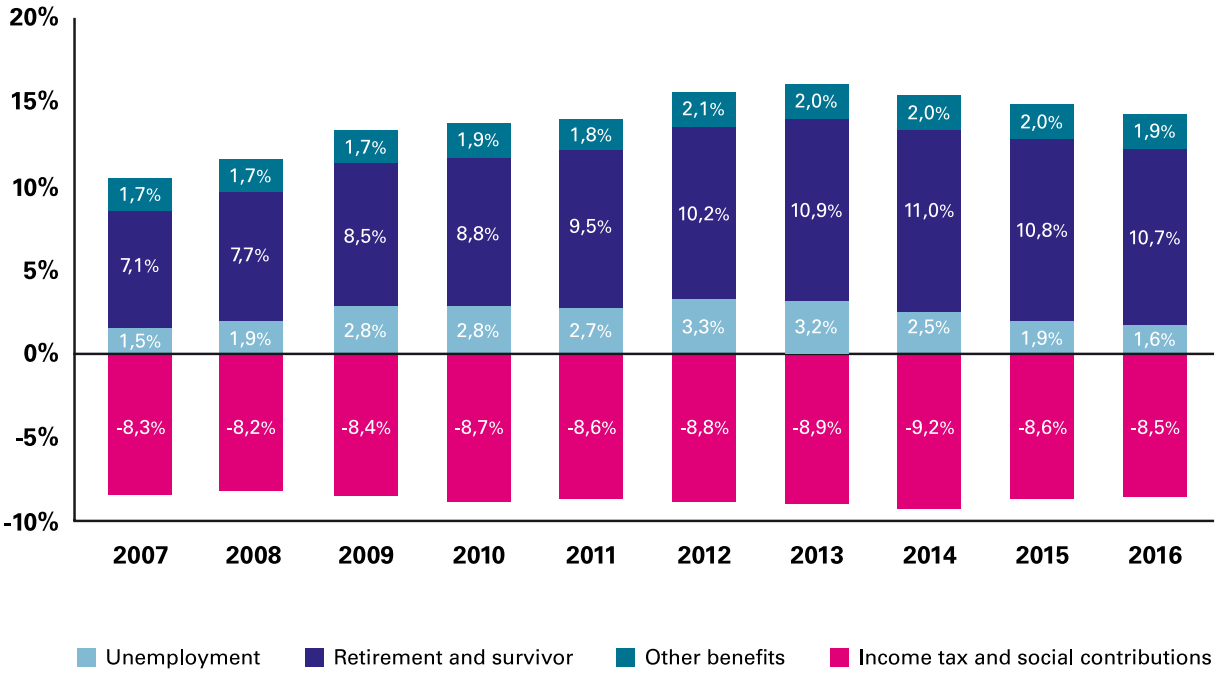
Source: Compiled in-house based on ECV data.

The monetary benefits received by households increased gross income significantly in relation to market income, exceeding 53% of GDP across the entire period. The highest value was reached in 2009 (56.6%) and fell until the end of the series to 54.1%. In other words, thanks to monetary benefits, households had higher incomes than those derived from the market, but their proportion in relation to GDP also fell over time.

The income tax paid by households and workers' national insurance contributions both reduce gross income to arrive at disposable income. That income, which indicates households' true ultimate financial capacity, was situated between market income and gross income in every year analysed. In other words, the social benefits received by households were higher than income tax and national insurance contributions paid across the entire period. The evolution of disposable income followed a similar pattern to gross income, reaching a maximum in 2009 (48.2%) and then gradually falling until 2015 (45.5%). The distance between market income and disposable income indicates the total effect of benefits, taxes and national insurance contributions as a whole on households. That distance was always positive: the series began at 2%, increased gradually until 2013 (7.2%) and decreased slightly at the end of the series (5.8%). This evolution over time indicates that the benefits were higher in the worst years of the recession, just when they were most needed.

Chart 2 gives a breakdown, by amount, of the main benefits and taxes to establish the relative importance of each entry.

Chart 2. **Benefits received and taxes paid by households (% GDP)**



Source: Compiled in-house based on ECV data.

Old age and survivor benefits were the most significant ones for households, and they were above 10% of GDP in the latter years. Their evolution over time shows big differences, from 7.1% in 2007 to 11% in 2014. In the last two years, although their total amount continued to rise, there was a slight drop in the percentage in relation to GDP due to economic growth at that time.

As expected, the evolution of unemployment benefits was the inverse of the economic cycle: they grew at times of recession and decreased at times of economic expansion. The amount of such benefits rose gradually until 2012, when they reached 3.3% of GDP, and fell from the following year until 2016 to 1.6%.

The other benefits include different types of monetary assistance received by households: sickness, disability, family, social exclusion, education and housing. Despite the variety and social relevance of these policies, the amount of such benefits hardly reached 2% of GDP in the historical series. Their evolution in relation to GDP was positive until 2012, and fell slightly thereafter.

All the benefits analysed can also be split by their contributory or non-contributory nature. The Spanish system falls within the continental or professional model, in which contributory benefits predominate (Barr & Diamond, 2006). Of the €160 billion allocated to the Spanish benefit system in 2015, more than 86% (€138 billion) corresponded to the contributory part, whereas the non-contributory part —basically represented by old age pensions and unemployment benefits— did not reach 14% of the total (€22 billion).

Lastly, income tax and national insurance contributions represent a reduction in households' financial capacity. Their evolution was much more stable than that of monetary benefits, at between 8.2% and 9.2% of GDP. The highest value was reached in 2014, but a striking decrease began from that year, which coincided with the last income tax reform.

2.2. The redistributive effects of the system

The evolution of the volume of taxes and benefits in Spain is important, and so too is their capacity to reduce the inequality between households.

INEQUALITY INDICES

The Gini index
It is the most commonly used inequality measure. It takes values between 0, which represents a completely equal distribution, and 1, where an individual accumulates total income.

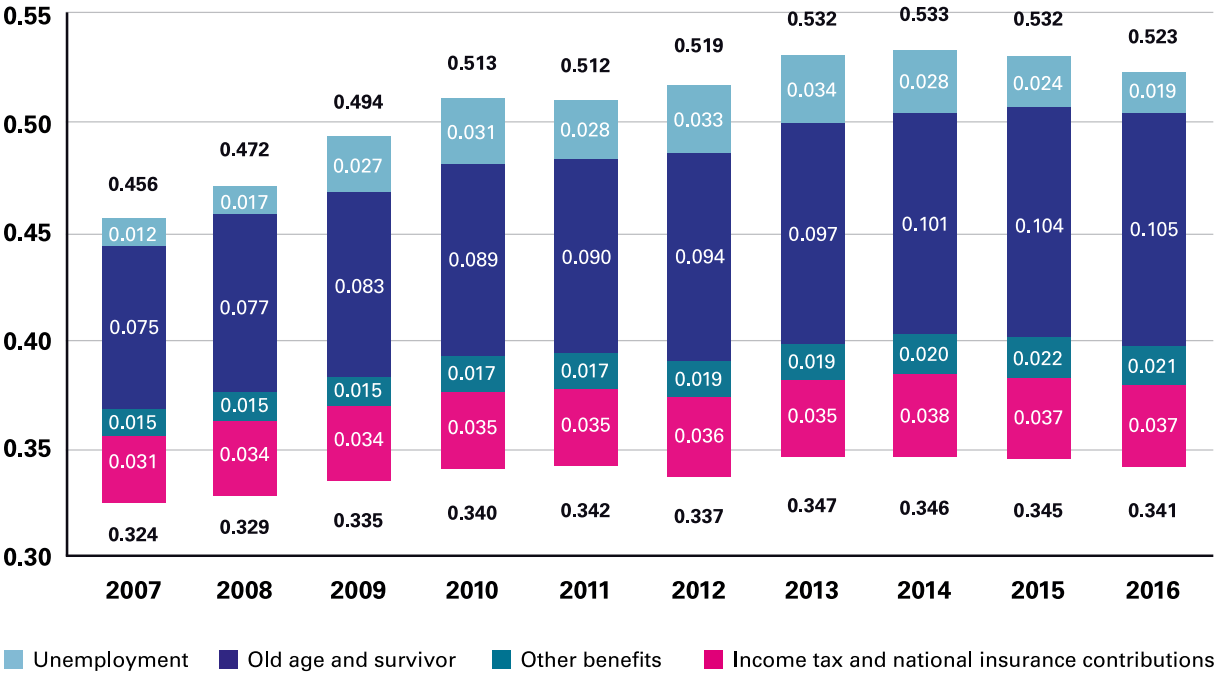
S80/S20 and S90/S10 indices
These indices represent the ratio between the income of the richest 20% (or 10%) of the population and the income of the poorest 20% (or 10%).

This analysis has considerable relevance because, while it is possible for a country to have a generous benefit policy, it may be the case that such benefits do not go to those most in need, thus generating even more inequality. To study this redistributive effect, one of the most usual measures is used: the Gini index.

Chart 3 presents the evolution of the corresponding Gini indices over the 2007-2016 period, starting with market income and deducting the redistributive effect generated by each of the transfer and tax policies implemented by the public sector. Thus, the end result is the Gini index corresponding to disposable income.

The market income received by Spanish households began with a Gini index of 0.456 in 2007. However, the level of inequality grew over time until reaching 0.533 in 2014. Over the latter years, it fell slightly to 0.523, but it was still higher than the initial level. The distribution of market-generated income was therefore much more unequal at the end of the period than it was before the start of the last recession.

Chart 3. **Gini indices and redistributive effect of benefits and taxes (In the chart, it is necessary to specify which indices are for market income (the top ones) and which ones represent households' disposable income (the bottom ones)**



Source: Compiled in-house based on ECV data.

Benefits, taxes and national insurance contributions as a whole reduced inequality across the entire period, leaving households' disposable income with much lower Gini indices than those derived from market income. The evolution of the indices shows an increase in inequality until 2013, when it reached a maximum of 0.347. From that moment, with the economic recovery, it fell to 0.341, but it still did not reach pre-crisis levels. It should also be noted that the disposable income series was much flatter than the market income one, thus reflecting the anticyclical nature of the transfer and tax system. As far as the effect of the different entries is concerned, it is worth highlighting that old age and survivor benefits were the ones that reduced initial inequality. Moreover, their effect was greater as the historical series progressed, thus reducing the Gini index by 10.5 percentage points in 2016.

Unemployment benefits also reduced inequality across the entire period, although their greatest effect was seen in the worst moments of the recession: between 2010 and 2013.

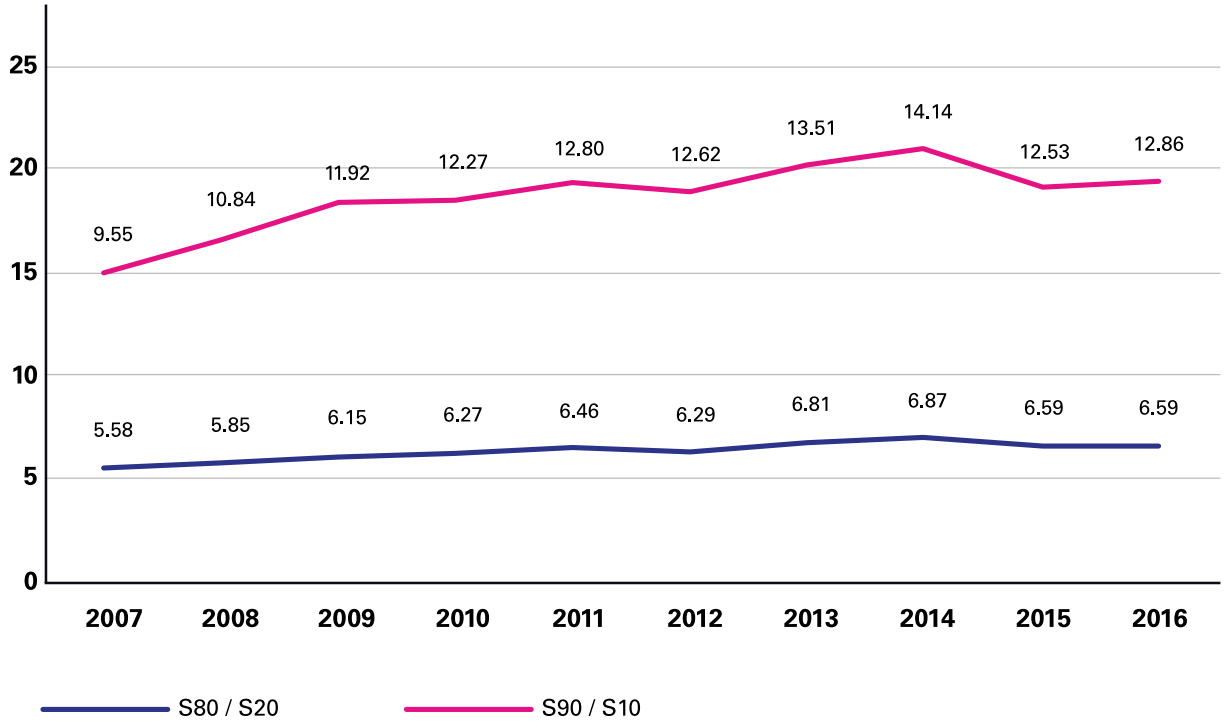
The other monetary benefits followed the same upward pattern as old age and survivor benefits, although the effect on inequality was much more limited. In this case, the biggest reduction in inequality occurred in 2015.

If we split these benefits into contributory and non-contributory ones, it is possible to assert that the former had a much greater effect on inequality reduction due mainly to their greater scope and amount. In 2015, contributory benefits reduced inequality by 11.6 percentage points, whereas non-contributory ones did so by 3.5 percentage points. However, the impact of non-contributory benefits should not be underestimated. The latter were more efficient in terms of inequality reduction because, with less than 14% of the total amount, they accounted for more than 23% of the redistributive effect of benefits.

Taxes and national insurance contributions also reduced inequality by between 3 and 4 percentage points across the entire period. Their effect gradually grew until 2014, and remained practically constant from the following year. Lastly, the evolution of disposable income inequality can be analysed by comparing the situation of households with higher incomes to those that are in a more disadvantaged situation using the S80/S20 and S90/S10 indices. Chart 4 shows that both indices increased significantly until 2014 and then, in the last two years, a slight drop occurred.

However, it is worth noting that the levels of inequality in the latter years were much higher than those at the onset of the economic crisis, regardless of the indicator used. For example, in 2014, mean disposable income of the richest 10% of the population was 14 times higher than that of the poorest 10%. In other words, the crisis increased inequality and harmed the more disadvantaged households to a greater extent.

Chart 4. **S80/S20 and S90/S10 indices of disposable income**



Source: Compiled in-house based on ECV data.

3 Comparative analysis of the European Union

Having analysed the evolution of the Spanish situation over the period 2007-2016, this section compares Spain's situation at the end of that period to the rest of the European countries. EUROMOD was used to perform this comparison, which has several advantages over EU-SILC.[3]

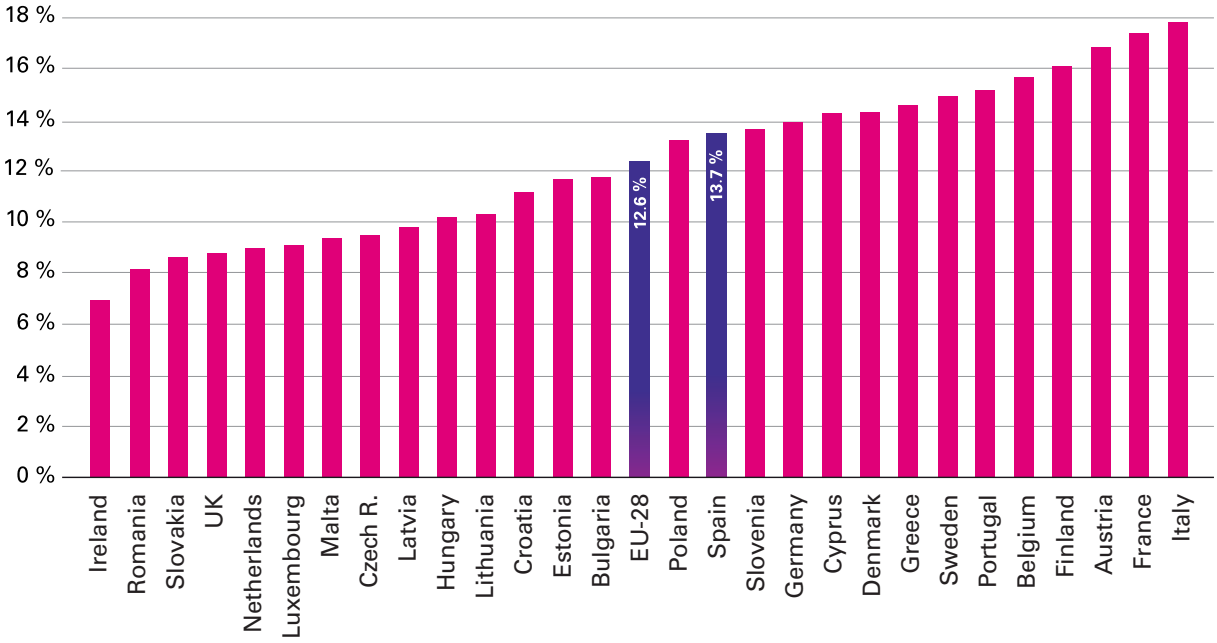
3.1. Expenditure and revenue analysis

The volume of total expenditure on monetary benefits as a percentage of GDP highlights the effort that each country makes to implement a social transfer system that manages to redress situations of inequality. One of the determining factors of benefit systems' redistributive power is the volume of expenditure. A slightly progressive high expenditure system will have a greater redistributive impact than another more progressive lower expenditure one (Gimeno, 2004; Cantó, 2013).

As shown in Chart 5, Spain's place in the ranking of EU countries in 2018 by volume of total expenditure on monetary benefits as a percentage of GDP was higher than the mean, occupying 13th place.

3. Firstly, it makes it possible to estimate the effect of benefits and taxes in all EU countries in 2018, thus adding a further two years to the official data. Secondly, it enables some benefits to be estimated more accurately, the results of which are under-represented in the surveys. Thirdly, it makes it possible to establish what proportion of the taxes paid by households corresponds to income taxes or to social security contributions. Lastly, it can be used to simulate new tax and benefit policies to work out the potential amount collected and the potential effects on inequality.

Chart 5. **Total expenditure on monetary benefits in 2018 (% GDP)**



Source: Compiled in-house based on EUROMOD data.

Besides studying each country's volume of total expenditure on benefit systems, it is interesting to determine at what type of policy such expenditure is aimed. The nine types identified in this study correspond to the different social functions established by the European System of Integrated Social Protection Statistics (ESSPROS) methodology:[4] unemployment, old age, survivor, sickness, disability, family, social exclusion, education and housing.

Another important aspect that should be taken into account when performing the international comparison is the likelihood of there being behavioural models or patterns within the countries analysed as a whole. To establish typologies by characteristics of expenditure on benefits, it is necessary to refer to the existing classification of welfare models. The classification used is the one proposed by Esping-Andersen (1990), which distinguishes between liberal, conservative and social democratic regimes according to the degree of decommodification of social services. However, this classification does not include the welfare states of the Mediterranean countries (Portugal, Spain, Greece and Italy). There are some classifications that expand the number of models, and others in which new variables are incorporated to delimit them.[5]

4. Regulation (EC) No 458/2007 on the European System of Integrated Social Protection Statistics (ESSPROS).

5. For example, Ferrera (1996) made a new classification that includes the southern or Mediterranean model while retaining the Anglo-Saxon model (liberal), the Bismarck model (conservative) and the Beveridge model (social democratic). Ferrera (1993) created another classification using the way in which welfare states are financed as a key variable in order to be able to identify the level of coverage of beneficiaries within them. In this model, two major groups of countries are described: occupational welfare states and universalist welfare states. In occupational welfare states, the entitlement to receive benefits is closely linked to work and to contributions to the system through such work, whereas in universalist welfare states, the entitlement to receive benefits depends solely on the beneficiaries' needs, thus the length of time or way in which beneficiaries have contributed are irrelevant. In the latter model, benefits are financed via a general taxation system.

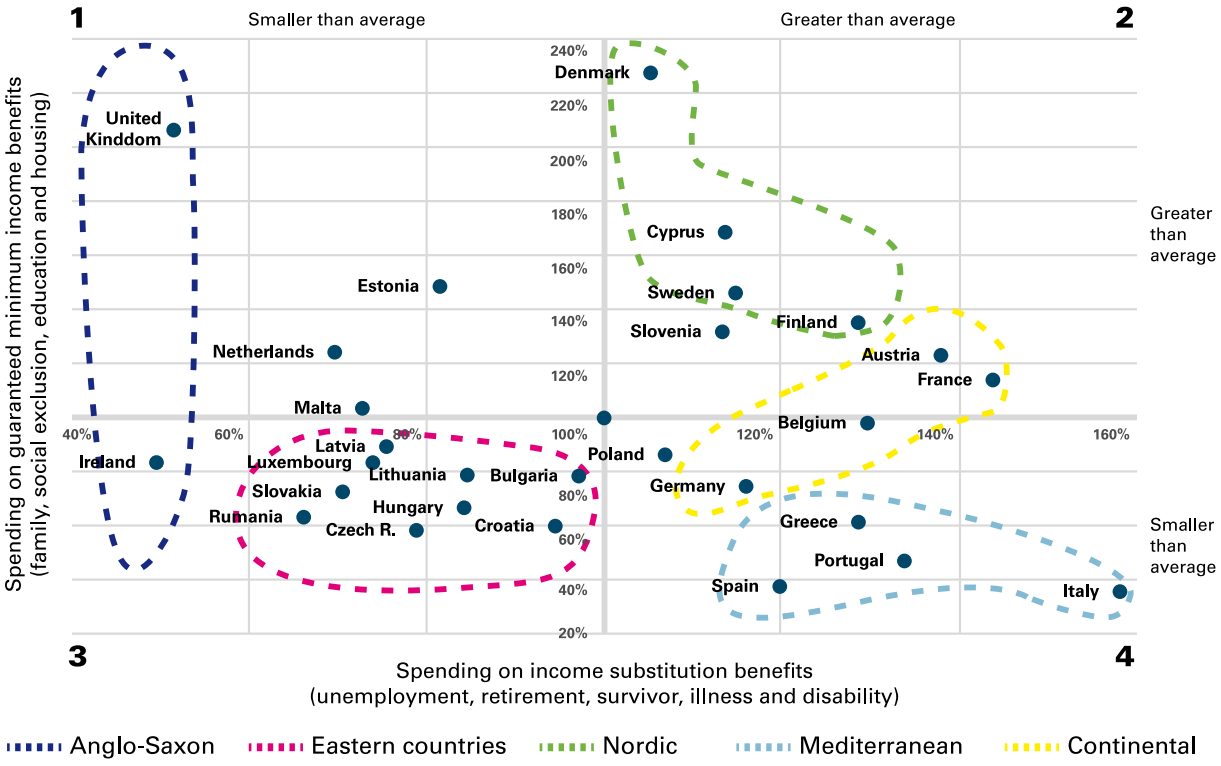
In order to establish distinct behavioural patterns among the different EU countries, we applied the Ferrera (1993) classification to distinguish two types of benefits (Gimeno, 2004). First, income replacement benefits: unemployment, old age, survivor, sickness and disability. This type of benefits is intended to cover situations in which someone no longer receives an income, generally from work. Even in the case of sickness and disability benefits, benefits received due to being unable to access work are taken into account (occupational welfare state).

And second, minimum guarantee benefits, also called 'assistance' benefits: family, social exclusion, education and housing. The latter are intended to guarantee people's and families' living conditions (universalist welfare state).

The classification made in Chart 6 is based on each country's distribution of expenditure on the two types of benefits identified in the previous paragraph. Five behavioural models or patterns are clearly recognisable, four that coincide with those identified in the literature, and an additional one for eastern European countries.

At opposite ends of the spectrum are the Nordic countries characterised by their high volume of expenditure on both types of benefits, and the Eastern countries where the volume of expenditure on both types of benefits was lower than the EU mean. Meanwhile, the behaviour of the Mediterranean countries and Continental countries was similar (above the mean) for income replacement benefits, but there were considerable differences for assistance benefits. However, the Continental countries were situated around the EU mean expenditure, whereas the Mediterranean countries were below it. Lastly, the Anglo-Saxon countries' expenditure on assistance benefits was proportionally higher than expenditure on income replacement guarantee benefits.

Chart 6. **Distribution of expenditure, by type of benefits in 2018, deviation from the EU-28 mean**

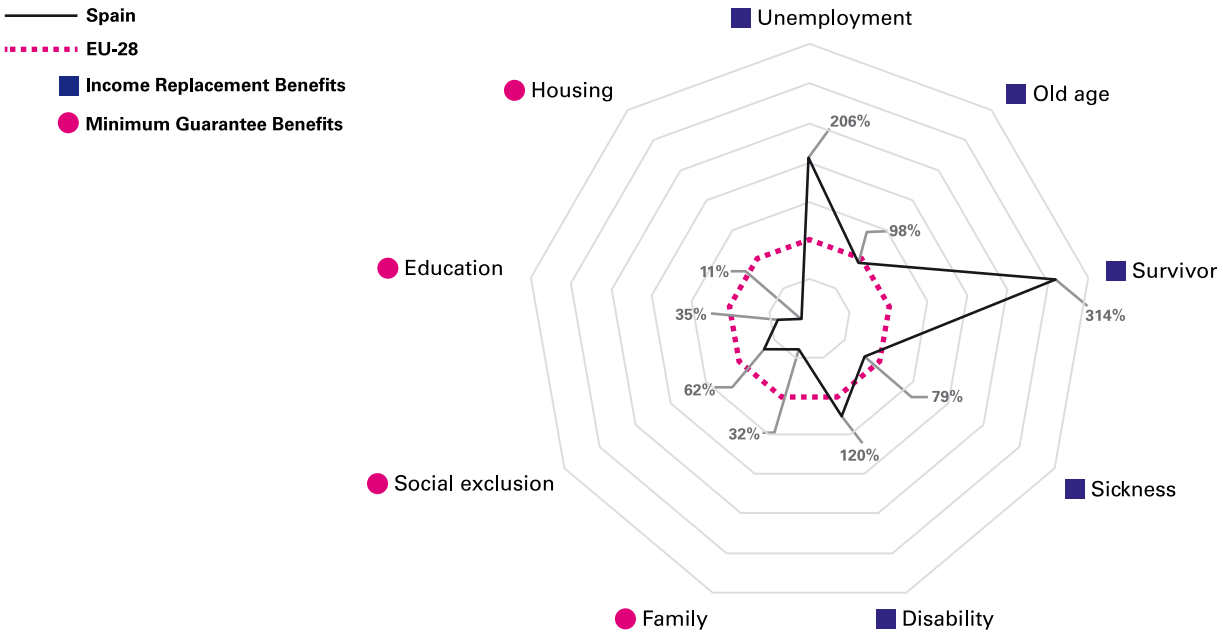


Source: Compiled in-house based on EUROMOD data.

Chart 7 analyses, separately, the Spanish level of expenditure on each of the nine types of benefit policies and compares it to the European mean, whereas Table 1 includes the data for the 28 EU countries. The noteworthy entries for Spain were expenditure on survivor and unemployment benefits. They were the policies on which our country proportionally allocated more resources than the EU country mean, occupying second and fifth places, respectively. Expenditure on disability, old age and sickness benefits was comparable to the European mean, but expenditure on minimum guarantee benefits (housing, education, social exclusion and family) was much lower than the mean, occupying last place in the case of family benefits.

In short, compared to the rest of the EU countries, the low investment that Spain made in minimum guarantee benefits stands out.

Chart 7. **Spain's expenditure on benefits as a percentage of GDP in 2018. Deviation from the EU-28 mean**



Source: Compiled in-house based on EUROMOD data.

Table 1. **Expenditure on monetary benefits (% GDP)**

Income replacement benefits																				Minimum guarantee benefits									
Unemployment		Old age		Survivor		Sickness		Disability		Family		Social exclusion		Education		Housing		Total expenditure											
Italy	2.01%	France	13.91%	Italy	2.39%	Slovenia	1.06%	Denmark	2.06%	Estonia	2.61%	Denmark	1.62%	Denmark	1.29%	UK	1.14%	Italy	18.2%										
Belgium	2.01%	Austria	12.26%	Spain	2.07%	Sweden	0.96%	Italy	1.90%	Austria	1.67%	Cyprus	1.42%	UK	0.73%	Denmark	0.80%	France	18.1%										
Finland	1.96%	Portugal	12.01%	Greece	1.52%	Netherlands	0.81%	Finland	1.74%	Belgium	1.56%	Slovenia	1.27%	Sweden	0.65%	Finland	0.53%	Austria	17.7%										
Denmark	1.68%	Greece	11.98%	Croatia	1.51%	Lithuania	0.59%	Slovenia	1.51%	Poland	1.53%	Netherlands	1.02%	Cyprus	0.47%	Sweden	0.48%	Finland	16.8%										
Spain	1.61%	Italy	11.21%	Cyprus	1.32%	Bulgaria	0.52%	Croatia	1.44%	Latvia	1.52%	UK	0.78%	Finland	0.36%	France	0.48%	Belgium	16.2%										
France	1.55%	Belgium	10.45%	Austria	1.19%	Latvia	0.51%	Belgium	1.42%	UK	1.44%	Malta	0.64%	Netherlands	0.31%	Netherlands	0.45%	Denmark	16.1%										
Cyprus	1.27%	Sweden	10.04%	Portugal	1.17%	Denmark	0.48%	Ireland	1.36%	Sweden	1.37%	Austria	0.61%	Malta	0.28%	Cyprus	0.26%	Cyprus	15.9%										
Germany	1.26%	Germany	9.98%	Luxemb.	0.94%	Austria	0.46%	Lithuania	1.36%	Finland	1.33%	Greece	0.59%	Slovenia	0.22%	Ireland	0.25%	Portugal	15.7%										
Austria	1.01%	Poland	9.61%	Poland	0.90%	Estonia	0.38%	UK	1.32%	Ireland	1.26%	Luxemb.	0.55%	EU-28	0.20%	Estonia	0.19%	Sweden	15.5%										
Ireland	0.95%	Finland	9.56%	Germany	0.87%	EU-28	0.29%	Estonia	1.26%	France	1.23%	France	0.50%	Germany	0.15%	EU-28	0.19%	Greece	15.4%										
Netherlands	0.95%	Cyprus	9.07%	Slovenia	0.86%	Belgium	0.26%	Spain	1.21%	Bulgaria	1.21%	EU-28	0.47%	Luxemb.	0.13%	Czech R.	0.14%	Slovenia	15.5%										
EU-28	0.78%	Slovenia	8.70%	Finland	0.70%	Finland	0.25%	Poland	1.17%	Cyprus	1.19%	Slovakia	0.47%	Ireland	0.12%	Austria	0.08%	Germany	14.3%										
Portugal	0.74%	Bulgaria	8.61%	EU-28	0.66%	Malta	0.24%	Netherlands	1.12%	Lithuania	1.16%	Finland	0.45%	Estonia	0.12%	Malta	0.08%	Spain	14.0%										
Sweden	0.66%	EU-28	8.32%	Slovakia	0.61%	Portugal	0.24%	Bulgaria	1.01%	Germany	1.14%	Sweden	0.38%	Portugal	0.09%	Latvia	0.05%	Poland	13.5%										
Lithuania	0.63%	Hungary	8.24%	Czech R.	0.45%	Germany	0.23%	EU-28	1.01%	EU-28	1.12%	Lithuania	0.37%	Austria	0.09%	Poland	0.05%	EU-28	13.0%										
Luxemb.	0.63%	Spain	8.14%	Romania	0.34%	Spain	0.23%	Sweden	0.96%	Slovenia	1.09%	Belgium	0.33%	Italy	0.09%	Slovenia	0.03%	Bulgaria	12.2%										
Estonia	0.52%	Denmark	7.29%	Lithuania	0.33%	Czech R.	0.18%	Czech R.	0.95%	Malta	1.06%	Bulgaria	0.32%	Spain	0.07%	Germany	0.03%	Estonia	11.9%										
Bulgaria	0.41%	Croatia	7.13%	Malta	0.25%	Croatia	0.17%	Cyprus	0.78%	Romania	1.02%	Portugal	0.30%	Croatia	0.07%	Italy	0.03%	Croatia	11.6%										
Latvia	0.40%	Malta	7.02%	Belgium	0.21%	Cyprus	0.16%	Latvia	0.70%	Hungary	1.00%	Spain	0.29%	Latvia	0.06%	Hungary	0.03%	Lithuania	10.9%										
Slovenia	0.40%	Czech R.	6.93%	Bulgaria	0.19%	Hungary	0.10%	Luxemb.	0.66%	Luxemb.	0.97%	Croatia	0.23%	Hungary	0.05%	Croatia	0.03%	Hungary	10.6%										
Greece	0.24%	Estonia	6.82%	France	0.14%	Slovakia	0.10%	Hungary	0.66%	Slovakia	0.94%	Romania	0.22%	Poland	0.05%	Portugal	0.02%	Netherlands	10.2%										
Hungary	0.23%	Latvia	6.65%	Denmark	0.13%	France	0.08%	Portugal	0.65%	Croatia	0.85%	Hungary	0.18%	France	0.05%	Spain	0.02%	Malta	10.1%										
Malta	0.21%	Rumania	6.45%	Ireland	0.13%	Luxemb.	0.05%	Slovakia	0.64%	Czech R.	0.84%	Germany	0.16%	Belgium	0.04%	Lithuania	0.01%	Latvia	10.1%										
Czech R.	0.19%	Lithuania	6.39%	Hungary	0.10%	Poland	0.03%	Romania	0.52%	Denmark	0.81%	Czech R.	0.16%	Lithuania	0.03%	Belgium	0.01%	Czech R.	9.9%										
Croatia	0.18%	Slovakia	6.35%	Latvia	0.09%	Ireland	0.03%	Greece	0.49%	Netherlands	0.69%	Latvia	0.11%	Slovakia	0.02%	Slovakia	0.01%	Luxemb.	9.8%										
Slovakia	0.10%	Luxemb.	5.91%	Sweden	0.06%	UK	0.02%	Germany	0.48%	Greece	0.61%	Poland	0.08%	Czech R.	0.02%	Luxemb.	0.01%	UK	9.7%										
Poland	0.07%	Netherlands	4.80%	Estonia	0.04%	Greece	0.01%	Austria	0.37%	Portugal	0.52%	Italy	0.08%	Bulgaria	0.01%	Greece	0.00%	Slovakia	9.2%										
UK	0.01%	UK	4.27%	UK	0.04%	Romania	0.00%	Malta	0.36%	Italy	0.50%	Estonia	0.03%	Greece	0.01%	Bulgaria	0.00%	Romania	8.6%										
Romania	0.01%	Ireland	3.02%	Netherlands	0.04%	Italy	0.00%	France	0.23%	Spain	0.36%	Ireland	0.03%	Romania	0.01%	Romania	0.00%	Ireland	7.2%										

Source: Compiled in-house based on EUROMOD data.

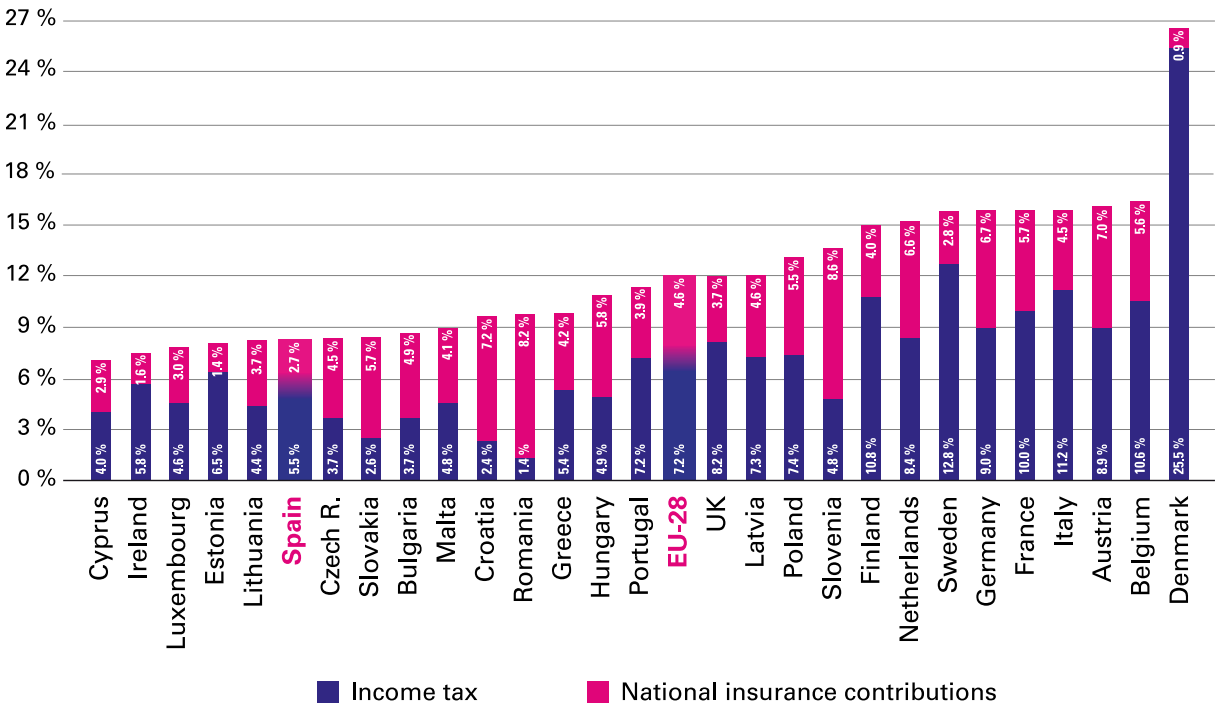
European countries' monetary benefits are basically financed by taxes and national insurance contributions. A tax system with a high collection capacity makes it easier and more sustainable to finance the social transfer system.

Revenues from Spanish workers' income tax and national insurance contributions were low compared to the European mean, since they did not reach 9% of GDP. Only Cyprus, Ireland, Luxembourg, Estonia and Lithuania were situated below Spain. At the other end of the spectrum is Denmark, the country with higher revenues, with an amount collected close to 27% of GDP.

Regarding the proportion of the revenues in question, revenues from income tax were greater on average in the EU, a trend also found in Spain.

However, in some eastern European countries, the trend was found to be the opposite, since the proportion of revenues from national insurance contributions was greater than that of income tax.

Chart 8. **Revenues from income tax and from national insurance contributions in 2018 (% GDP)**



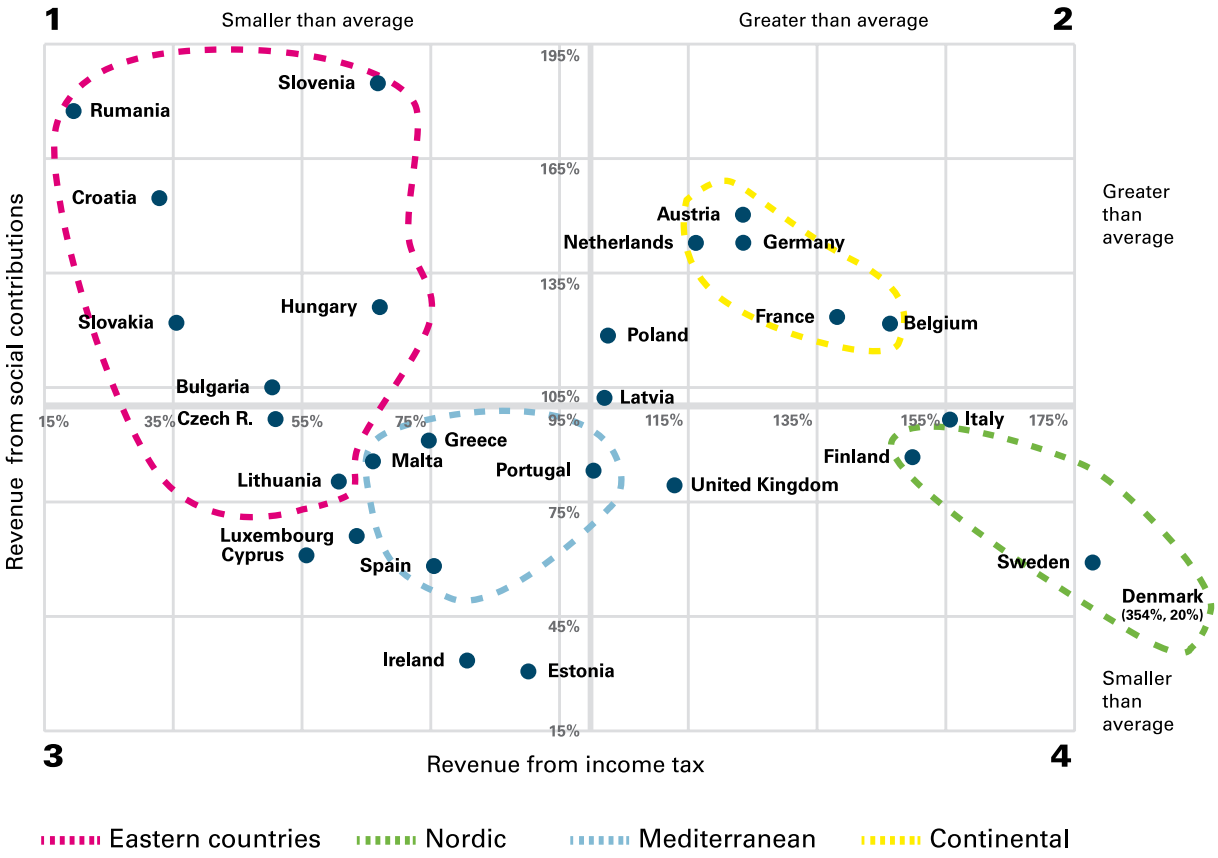
Source: Compiled in-house based on EUROMOD data.

To establish country models by public revenues, we used the distribution of those revenues from income tax and from national insurance contributions. Chart 9 shows that the behavioural patterns again conform to the previously identified models, with the exception of the Anglo-Saxon one.

At opposite ends of the spectrum are the Continental countries whose volume of revenues was higher than the EU mean for both types of revenues, and the

Mediterranean countries, whose revenues in both cases were lower than the mean, with the exception of the Italian case. Meanwhile, revenues from income tax in the Nordic countries were higher than the mean, but those from national insurance contributions were below it, whereas the opposite is the case in the Eastern countries.

Chart 9. **Distribution of revenues from income tax and from national insurance contributions in 2018, deviation from the EU-28 mean**



Source: Compiled in-house based on EUROMOD data.

WELFARE STATE MODELS

Nordic countries: High expenditure on benefits, both income replacement and minimum guarantee ones. High income tax and average national insurance contributions.

Eastern countries: Low benefits, low income tax and high national insurance contributions.

Mediterranean countries: Average income replacement benefits and below average minimum guarantee benefits. Below average revenues.

Continental countries: Average benefits and high taxes and national insurance contributions.

Anglo-Saxon countries: Low income replacement benefits and high minimum guarantee benefits.

3.2. The redistributive effects of benefit and tax systems in the EU

Another relevant aspect of tax and benefit systems that needs to be analysed is their redistributive effect. Depending on the level of the system's redistributive capacity, situations of inequality or social exclusion will be redressed to a lesser or greater extent. Chart 10 shows the initial situation for inequality, given the distribution of market income, and the final position after implementing the tax and benefit system for each EU country.

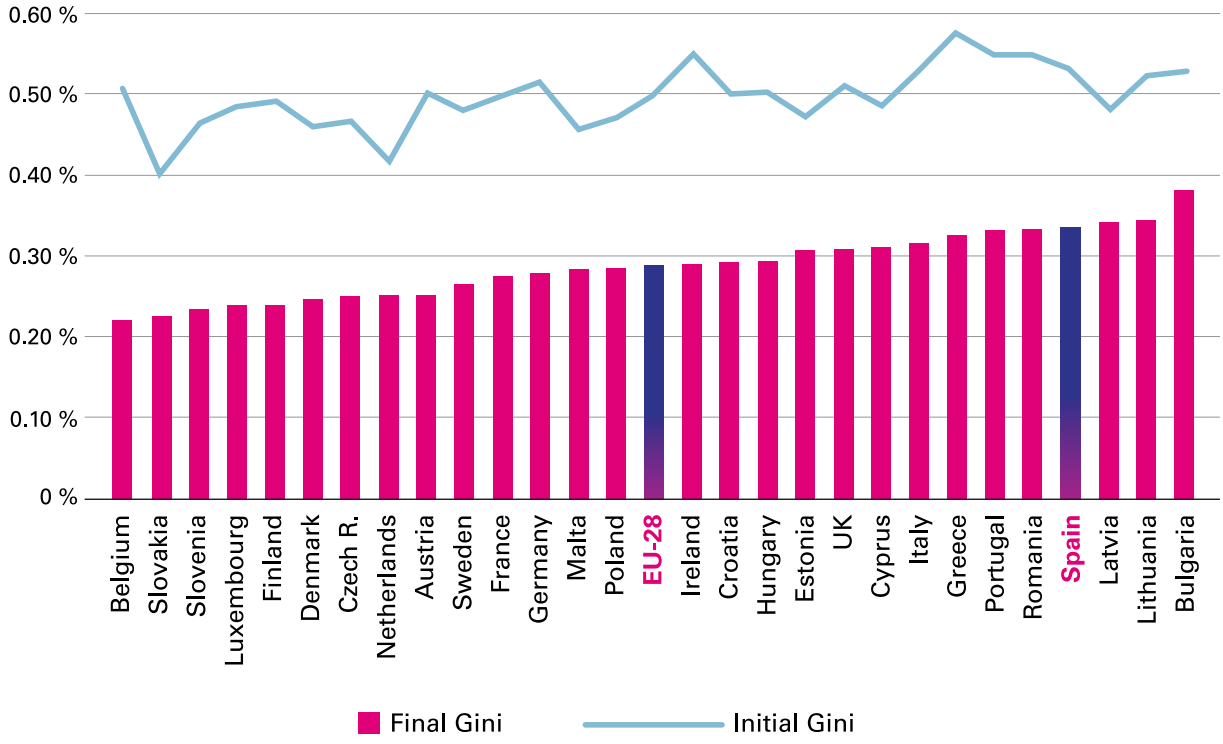
Firstly, it should be noted that Spain's initial situation was one of considerable inequality of market income (initial Gini) since it was well above the EU mean, occupying fifth place after Greece, Ireland, Romania and Portugal. The countries with a more equal situation were Slovakia, the Netherlands, Malta and Denmark.

Regarding the tax and benefit system's redistributive capacity, Spain was also below the European mean, because it had not managed to improve its final situation in relative terms. Thus, Spain continued to be among those countries with the highest levels of inequality: it occupied fourth place from the bottom of the ranking, ahead of Bulgaria, Lithuania and Latvia only, after implementing the tax and benefit system.

The most redistributive systems, above the EU mean, were mostly those of the Continental countries (Belgium, Austria, Luxembourg, Germany and France) and the Nordic countries (Finland, Sweden and Denmark). Meanwhile, the Eastern countries were among the least redistributive ones. The Mediterranean countries displayed different behaviours. The systems of Greece, Portugal and Italy were more redistributive than the European mean, whereas those of Spain, Croatia, Cyprus and Malta were below it.

In short, the systems that had a greater redistributive effect managed to reverse the initial pattern of inequality set by market distribution.

Chart 10. **Gini index before and after applying the tax and benefit system in 2018**



Source: Compiled in-house based on EUROMOD data.

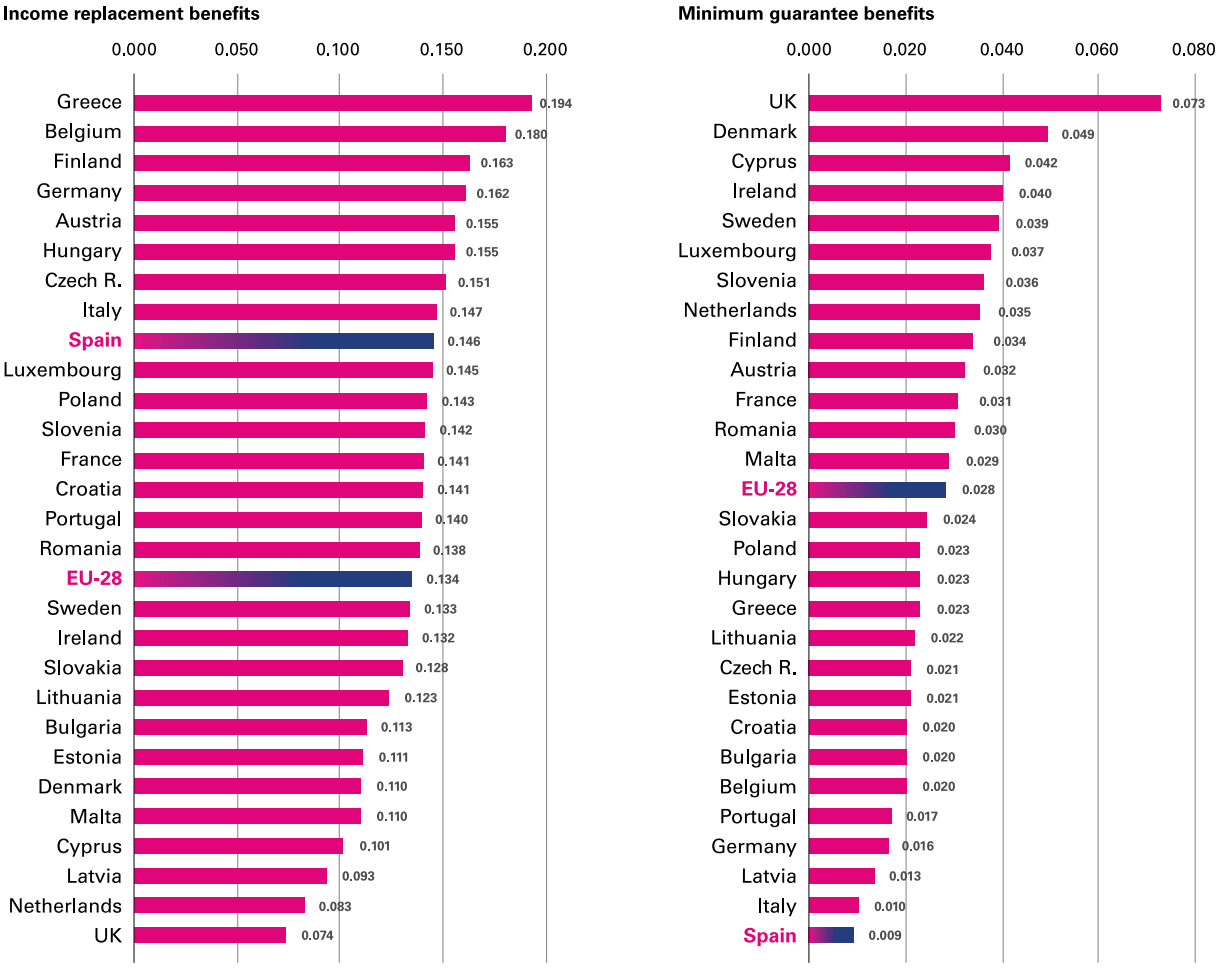
Chart 11 shows that there were differences depending on the type of benefit being referred to. In general terms, income replacement benefits made the biggest contribution to inequality reduction in all the countries, whereas minimum guarantee ones had a much lower effect. This difference is logical because the amount of income replacement benefits was much higher.

In the case of Spain, the difference between the two types of benefits was very marked. The effect on inequality of income replacement benefits was above the European mean, whereas the effect on inequality of minimum guarantee ones was practically non-existent, thus putting Spain in last place.

Albeit with broad differences, the same situation occurred in countries like Italy, Germany and Belgium. The opposite occurred in countries like Denmark and Cyprus, where minimum guarantee benefits had a significant impact on reducing inequality. The extreme case was that of the United Kingdom with its very generous policy regarding minimum guarantee benefits, which reduced inequality to the same extent as income replacement benefits.

Table 2 shows the effect that each of the specific benefit policies in the 28 European countries had on inequality, and highlights the considerable differences between them. Besides the concrete datum, this table clearly enables Spain's distance from the mean to be seen.

Chart 11. **Gini index reduction due to monetary benefits in 2018**



Source: Compiled in-house based on EUROMOD data.

Table 2. **Gini index reduction due to monetary benefits in 2018**

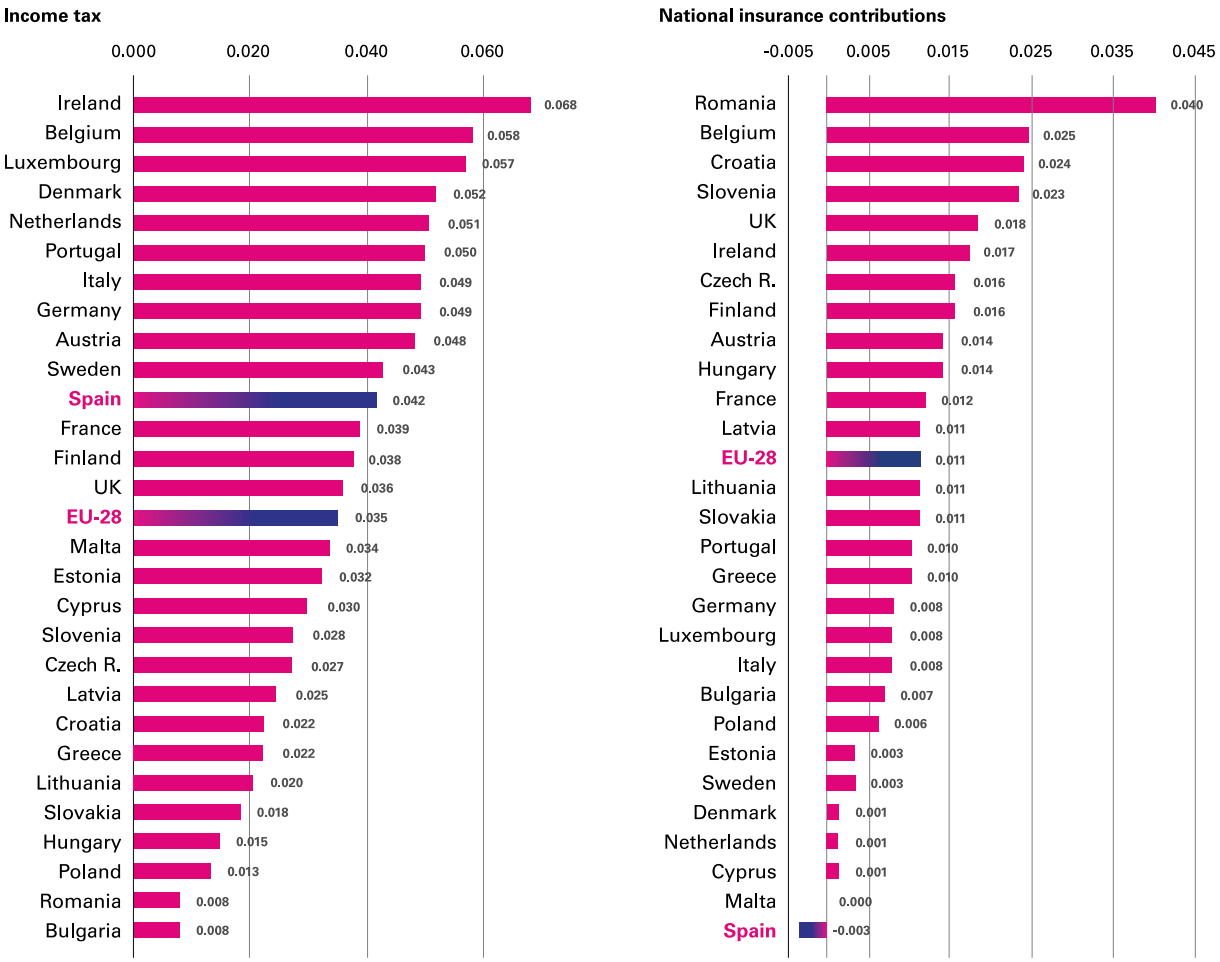
Employment-related benefits												Other social benefits											
Unemployment		Old age		Survivor		Sickness		Disability		Family		Social exclusion		Education		Housing		Total improvement	
Ireland	0.031	Greece	0.165	Spain	0.022	Netherlands	0.011	Ireland	0.027	Ireland	0.031	Slovenia	0.023	Denmark	0.016	UK	0.019	Greece	0.216
Finland	0.026	Hungary	0.137	Croatia	0.021	Sweden	0.008	UK	0.022	UK	0.031	Cyprus	0.022	Sweden	0.008	Sweden	0.008	Belgium	0.200
Belgium	0.024	Belgium	0.131	Italy	0.019	Austria	0.004	Belgium	0.021	Romania	0.022	Denmark	0.021	UK	0.008	Finland	0.008	Finland	0.197
Spain	0.022	Czech R.	0.127	Greece	0.019	Denmark	0.004	Croatia	0.018	Poland	0.020	Luxemb.	0.019	Finland	0.004	France	0.008	Austria	0.188
Germany	0.020	Germany	0.124	Luxemb.	0.013	Malta	0.004	Finland	0.018	Malta	0.018	Netherlands	0.016	Netherlands	0.004	Denmark	0.007	Luxemb.	0.183
Denmark	0.017	Austria	0.123	Cyprus	0.013	Germany	0.003	Slovenia	0.018	Austria	0.018	UK	0.015	Germany	0.002	Netherlands	0.007	Slovenia	0.178
France	0.017	Romania	0.121	Slovenia	0.011	Belgium	0.003	Denmark	0.017	Hungary	0.018	Austria	0.012	EU-28	0.002	Ireland	0.006	Hungary	0.178
Austria	0.015	France	0.121	Poland	0.011	Portugal	0.002	Italy	0.016	Luxemb.	0.017	Slovakia	0.012	Slovenia	0.002	Estonia	0.004	Germany	0.177
Luxemb.	0.012	Poland	0.115	Austria	0.011	Finland	0.002	Poland	0.016	Cyprus	0.016	Greece	0.012	Ireland	0.002	Czech R.	0.003	Sweden	0.172
Portugal	0.012	Finland	0.110	Portugal	0.009	Slovenia	0.002	Lithuania	0.016	Estonia	0.016	Lithuania	0.009	Luxemb.	0.001	EU-28	0.003	France	0.172
Italy	0.011	Slovakia	0.110	Germany	0.009	EU-28	0.002	Luxemb.	0.015	France	0.015	EU-28	0.009	Cyprus	0.001	Cyprus	0.002	Czech R.	0.172
EU-28	0.010	Slovenia	0.107	Romania	0.007	Spain	0.002	Spain	0.015	EU-28	0.014	Sweden	0.008	Malta	0.001	Austria	0.001	Ireland	0.172
Sweden	0.009	Portugal	0.107	Slovakia	0.007	Latvia	0.001	Estonia	0.014	Croatia	0.014	Finland	0.008	Portugal	0.001	Latvia	0.001	Rumania	0.168
Netherlands	0.008	Sweden	0.106	EU-28	0.007	Czech R.	0.001	Czech R.	0.014	Sweden	0.014	Malta	0.008	Spain	0.001	Malta	0.001	Poland	0.166
Lithuania	0.007	Luxemb.	0.104	Finland	0.007	Lithuania	0.001	EU-28	0.013	Belgium	0.014	Romania	0.008	Austria	0.001	Poland	0.001	EU-28	0.162
Hungary	0.005	EU-28	0.103	Czech R.	0.005	Estonia	0.001	Cyprus	0.012	Finland	0.014	Portugal	0.008	Belgium	0.001	Hungary	0.001	Croatia	0.161
Slovenia	0.004	Italy	0.100	Lithuania	0.004	Bulgaria	0.001	Netherlands	0.012	Czech R.	0.013	Bulgaria	0.007	France	0.001	Germany	0.001	Denmark	0.160
Malta	0.004	Bulgaria	0.099	Ireland	0.003	Croatia	0.001	Hungary	0.011	Bulgaria	0.013	France	0.007	Hungary	0.001	Croatia	0.001	Italy	0.157
Greece	0.004	Croatia	0.098	Bulgaria	0.002	Cyprus	0.001	Sweden	0.010	Lithuania	0.012	Belgium	0.005	Poland	0.001	Slovenia	0.001	Portugal	0.157
Czech R.	0.003	Malta	0.095	Belgium	0.002	Luxemb.	0.001	Portugal	0.009	Slovakia	0.012	Croatia	0.005	Estonia	0.001	Italy	0.000	Spain	0.155
Latvia	0.003	Lithuania	0.094	Malta	0.002	Slovakia	0.001	Romania	0.009	Greece	0.011	Czech R.	0.004	Croatia	0.000	Spain	0.000	Slovakia	0.152
Estonia	0.003	Estonia	0.093	Hungary	0.001	Ireland	0.001	Bulgaria	0.008	Slovenia	0.011	Spain	0.004	Latvia	0.000	Lithuania	0.000	UK	0.147
Croatia	0.003	Spain	0.086	Latvia	0.001	France	0.000	Slovakia	0.008	Germany	0.010	Hungary	0.004	Slovakia	0.000	Luxemb.	0.000	Lithuania	0.145
Cyprus	0.002	Latvia	0.081	France	0.001	Hungary	0.000	Latvia	0.007	Latvia	0.010	Germany	0.003	Lithuania	0.000	Portugal	0.000	Cyprus	0.143
Bulgaria	0.002	Cyprus	0.073	Denmark	0.001	Poland	0.000	Greece	0.007	Netherlands	0.009	Latvia	0.002	Italy	0.000	Belgium	0.000	Malta	0.139
Slovakia	0.001	Denmark	0.071	Netherlands	0.001	UK	0.000	Germany	0.006	Portugal	0.008	Poland	0.002	Bulgaria	0.000	Slovakia	0.000	Bulgaria	0.133
Poland	0.001	Ireland	0.071	Estonia	0.001	Greece	0.000	Malta	0.005	Italy	0.008	Italy	0.002	Czech R.	0.000	Greece	0.000	Estonia	0.132
UK	0.000	Netherlands	0.052	UK	0.000	Rumania	0.000	France	0.003	Denmark	0.005	Ireland	0.001	Greece	0.000	Romania	0.000	Netherlands	0.118
Romania	0.000	UK	0.051	Sweden	0.000	Italy	0.000	Austria	0.003	Spain	0.004	Estonia	0.000	Romania	0.000	Bulgaria	0.000	Latvia	0.107

Source: Compiled in-house based on EUROMOD data.

Regarding the public revenues analysed, within the European countries as a whole, income tax had a far higher redistributive effect than national insurance contributions, with the exception of two particular cases: Romania and Croatia.

Conversely, it is worth mentioning the Spanish case, since the redistributive effect of income tax was much higher than the European mean, whereas national insurance contributions actually had a negative redistributive effect. Indeed, Spanish workers' national insurance contributions represented the only European policy, on both revenues and monetary benefits, that generated an increase in household inequality.

Chart 12. **Gini index reduction due to income tax and national insurance contributions in 2018**

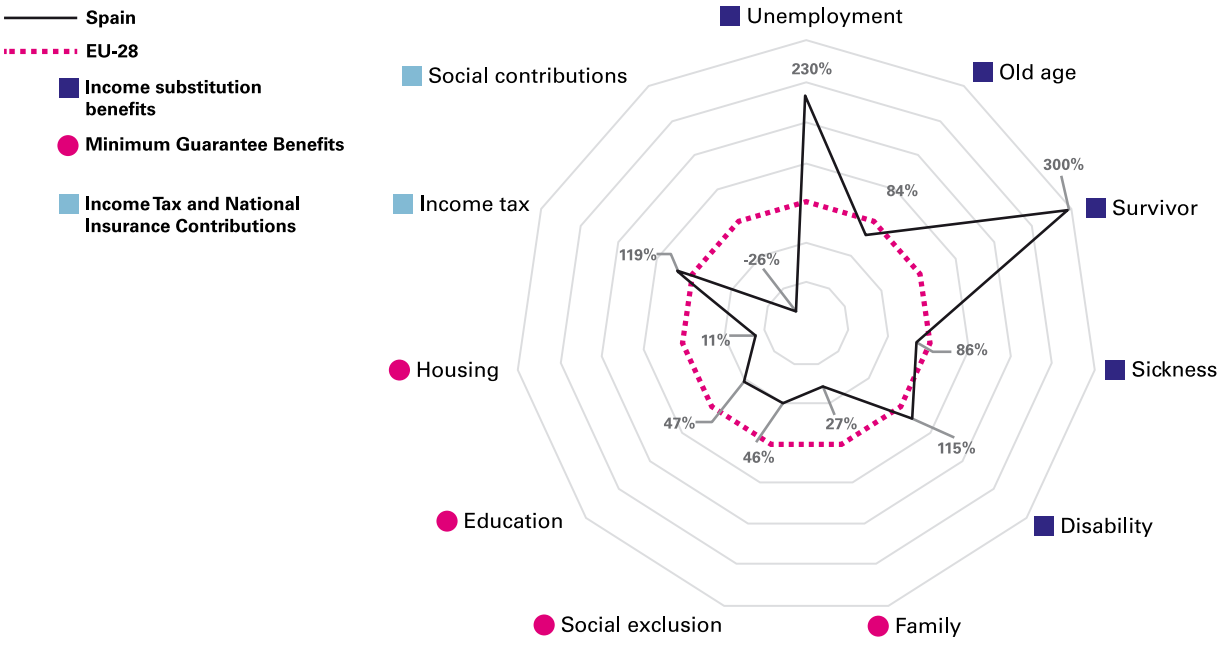


Source: Compiled in-house based on EUROMOD data.

Looking at all the benefits and taxes in detail, if we compare the case of Spain to the European mean, Chart 13 highlights that housing, education, social exclusion and family benefits alongside national insurance contributions were those that least contributed to a better redistribution (indeed, they actually made it worse). Therefore, if the aim is to improve the system's redistributive effect, it would be necessary to focus on reforms of policies like these. To that end, the experiences of other countries' systems whose redistributive effect is higher should be drawn upon.

At the opposite end of the spectrum were unemployment and survivor benefits, for which Spain is among the top places in the ranking for its contribution to reducing inequality, exceeding the European mean by far. Lastly, for old age, sickness and disability benefits, as well as income tax, Spain occupied places close to the EU mean.

Chart 13. **Gini index reduction after taxes (income tax and national insurance contributions) and benefits in 2018**



Source: Compiled in-house based on EUROMOD data.

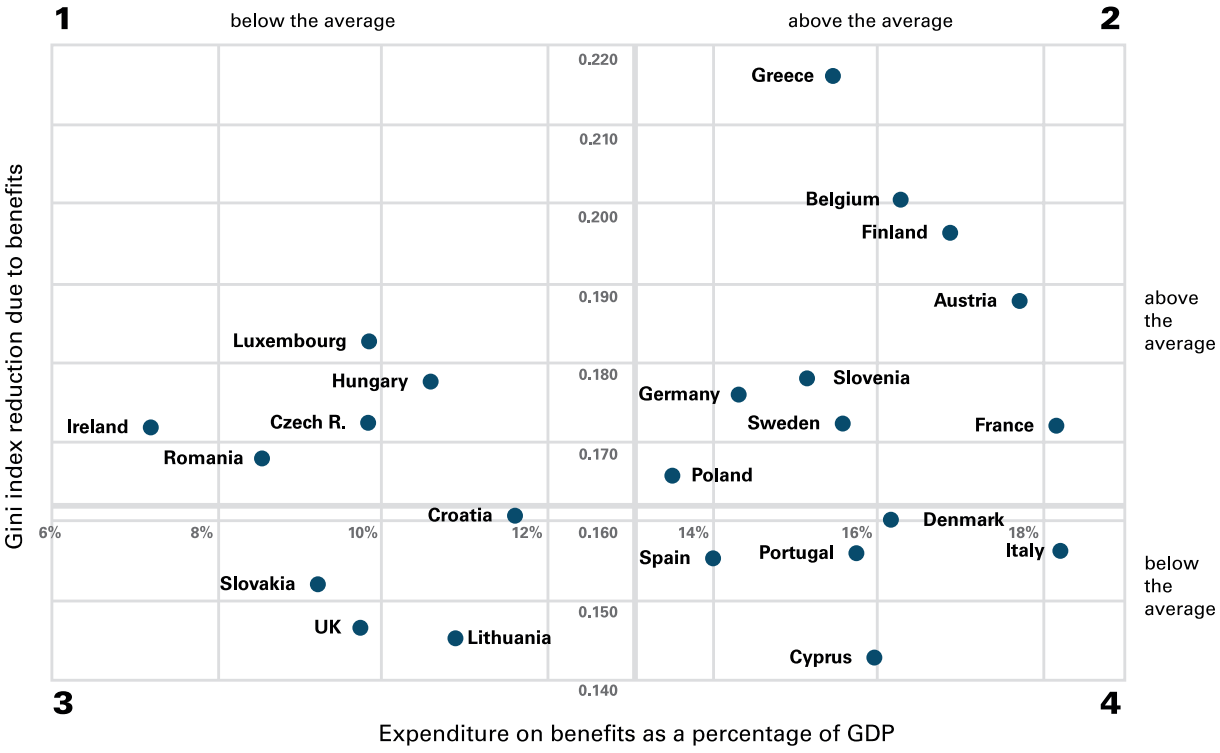
Chart 14 shows the distribution of the different countries by volume of expenditure on the benefits system and the capacity that the system has to reduce inequality, taking the EU as the point of reference.

Those countries situated in the first quadrant can be considered the most efficient because, with a relatively low volume of expenditure on transfers, they achieved a high reduction in inequality. The opposite situation occurred in countries in the fourth quadrant, among which is Spain, where a volume of expenditure higher than the mean achieved a comparatively lower reduction in inequality.

Situated in the second quadrant are the most active countries in terms of redistributive policies, since they had a high level of expenditure on benefits and achieved a high reduction in inequality. Lastly, situated in the third quadrant are the least active countries in terms of redistributive policies, since the volume of expenditure was low and, consequently, so too was the reduction in inequality.

It is clear, therefore, that despite the existence of efforts to invest more resources than the European mean in monetary benefits, Spain did not manage to reduce inequality to the same extent. This suggests that the system's design requires reforms to make it more redistributive.

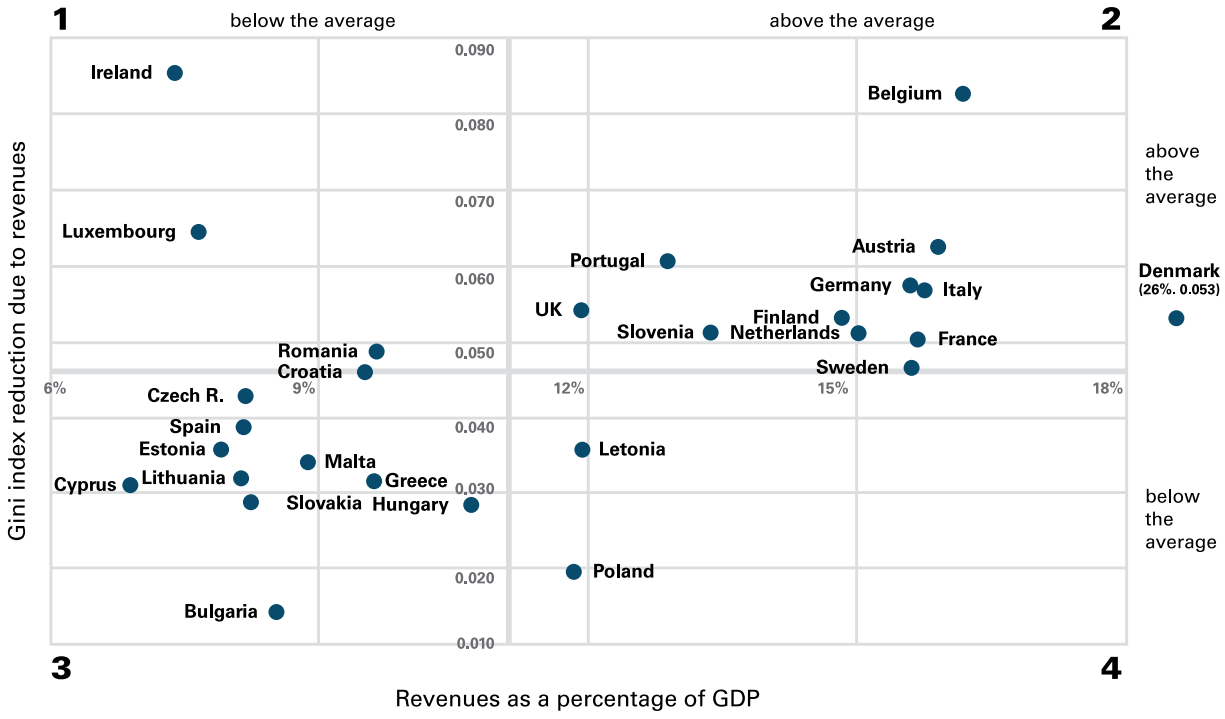
Chart 14. **Expenditure on benefits as a percentage of GDP vis-à-vis Gini index reduction in 2018**



Source: Compiled in-house based on EUROMOD data.

The same analysis was repeated using the following variables: volume of revenues from income tax and national insurance contributions, and inequality reduction. In this case, Spain was situated in the third quadrant, which means that the amount collected from these two public revenues was lower than the European mean, and so too was reduction in the level of inequality.

Chart 15. **Revenues from income tax and from national insurance contributions as a percentage of GDP vis-à-vis Gini index reduction in 2018**



Source: Compiled in-house based on EUROMOD data.

4 Proposals and simulation of tax and benefit system reforms

In light of the previous analysis, the aspects in which Spain presents greater deficiencies in terms of inequality reduction become clear. Family and social exclusion policies stand out as priority objectives of future reforms to the workers' national insurance contributions regime.

There are other areas where the Spanish policy is clearly below the EU-28 mean, such as housing and education policies. However, these are two policies in which the cash benefit part is as important as, or even more important than, monetary benefits as a whole.

Trying to apply the policies of other countries using only monetary benefits might distort the real meaning of these policies as a whole. In these areas, the analysis used in this work is not complete, since it omits benefits in kind. It is also true that Spain's position regarding the redistributive effect of old age pensions was somewhat distant from the mean. However, regarding survivor benefit, Spain was in first place. If these two functions were aggregated, Spain would be situated around the European mean.

The reform proposals were selected based on distance from the European mean. In this sense, the design of workers' national insurance contributions is clearly unsatisfactory. The fiscal volume collected as a percentage of GDP (2.71%) was much lower than the EU-28 mean (4.64%). However, this datum needs to be analysed with caution because the distribution of national insurance contributions by employer and employee varies significantly by country, and the information available to us only referred to the second part.

Nevertheless, the most striking datum is that the amount collected slightly worsened income distribution, with an increase in the Gini index of 0.003 points, a negative effect only found in Spain. In general, national insurance contribution systems are not expected to have major redistributive effects. In many cases, the calculation of national insurance contributions is proportional to gross pay, meaning that the

effect can be almost non-existent. But there is a set of countries whose systems had a not inconsiderable redistributive effect. The systems of Romania, Belgium, Croatia and Slovenia reduced the Gini index by more than 0.02 points.

Secondly, the social exclusion benefit policy should also be reviewed. Expenditure on this policy as a percentage of GDP was 2.71% in Spain compared to 4.64% in the EU-28. However, unlike neighbouring countries, the effort made in our country was significant. Nevertheless, the effects of such benefits on income distribution were limited (the Gini index reduced by 0.004), less than half that achieved by the EU-28 (0.009).

Lastly, the family benefit policy is one of the big matters pending. Of the EU-28, Spain occupied last place in this area. Expenditure on this policy as a percentage of GDP was the lowest in the zone: 0.36% compared to the EU-28 mean of 1.12%. Likewise, that greater effort also translated into a clear improvement in income distribution: in the EU-28, the Gini improved by 0.014. In Spain, not only was little spent, but the redistributive effect was also very limited (0.004). In fact, it occupied last place in the ranking of European countries.

4.1. Reform of the national insurance contribution system

The first reform proposed for the national insurance contribution system is a measure that, beyond aiming to combat poverty and social exclusion as a whole, addresses the problems of poor workers (Marx & Verbist, 1999). This problem was acknowledged in Europe in 2003 following its appearance in the European employment guidelines of the European Commission (García & Ibáñez, 2007; European Foundation, 2004 and 2010). Various studies have proposed measures to reduce worker poverty, such as increasing minimum pay, reducing tax deductions and national insurance contributions, or adding specific income supplements for low-income households (Marx & Nolan, 2013).

The fact that workers' national insurance contributions made income distribution in Spain worse is a concern. In fact, it was the only case in the EU-28. The Spanish system is basically a proportional one: fixed contribution rates (generally 6.35%) are applied to the contribution bases. The problem is that these contribution bases have minimum amounts (which differ depending on the type of work) and maximum amounts (generally €3,751.20 per month). Both limits undoubtedly make this tax regressive, so the first proposal here is to remove both the top and bottom limits.

However, the removal of the limits would have a very small effect on the amount collected and on the final redistributive effect. Spain's national insurance authority would annually collect around €741 million extra, and a slightly negative effect on income distribution would be maintained, dropping from -0.003 to -0.001.

Due to the aforementioned problems, a policy adopting the Belgian system, one of the most redistributive ones in the EU-28, was simulated. This system calculates

contributions in a similar way, but then it introduces a contribution reduction, or workbonus, that becomes higher as gross pay gets lower. It also takes into account the number of hours worked per month (to avoid the harmful effect of a reduction in cases of part-time work). Firstly, what we could call 'Full-Time Equivalent Income' (herein, FTEI) is calculated, which would be:

$$\textbf{\textit{FTEI = Gross salary}} \quad \frac{\textit{Number of fulltime hours}}{\textit{Number of real hours worked}}$$

Based on the amounts and conditions of the Belgian model, a series of adaptations were made for the Spanish system. After several combinations, a reform that increases the contribution rate by two points was chosen (in the general case, it would go up to 8.5%). Simultaneously, a basic reduction was introduced, which would cancel out the national insurance contributions for workers whose monthly contribution basis does not exceed €800. This basic reduction would slowly decrease from that threshold until arriving at zero for contribution bases higher than €1,300.

To calculate the final workbonus, the basic reduction is weighted by the ratio between real number of hours worked and the number of full-time hours.

$$\textbf{\textit{Reduction = Basic reduction}} \quad \frac{\textit{Number of real hours worked}}{\textit{Number of fulltime hours}}$$

This reform would provide the workers' national insurance contribution system with some progressivity. Although the tax rate remains proportional, the introduction of an exempt minimum (the workbonus) provides the system with progressivity.

As a result of this reform, the national insurance authority would see the contributions it receives drop slightly, by around €133 million per annum, which is practically neutral in collection terms. Regarding the GDP, revenues from workers' national insurance contributions would go down from 2.71% to 2.7%. Moreover, the average contribution would fall from €116 to €114 per month, and the lowest paid workers on monthly salaries between €800 and €1,300 would especially benefit.

Above the latter limit, workers' national insurance contributions would increase slightly. This distribution of the tax reduction produces very striking results and changes in the Gini index. Under the current system, workers' national insurance contributions worsen the distribution by 0.003 points, whereas the proposed reform would improve the Gini index by 0.008 points. That is, the Spanish system would become clearly redistributive, moving up from last place to become situated very close to the European mean.

4.2. Reform of the social exclusion policy

In Spain, the minimum income guarantee system is based on the so-called 'minimum incomes of the Autonomous Communities'. Each Autonomous Community in Spain has one, although the amounts, requirements and durations differ. Although seemingly not the case, they actually have many elements in common.

However, the main problem with these incomes is their application. In fact, EUROMOD does not simulate these incomes for Spain because the simulation result puts expenditure at seven times above the official datum. Behind it is the problem of low take-up, which is very high in this type of benefits. But there is no simple explanation for the big regional differences.

In their study, Fuenmayor and Granell (2012) highlighted the substantial differences between Autonomous Communities in their application of minimum incomes with respect to the theoretical maximum amount. The Basque Country (70.06%), Navarre (68.05%) and Asturias (57.98%) had figures close to those obtained for other countries, but other Autonomous Communities like Murcia (1.14%), Extremadura (1.96%), Castilla-La Mancha (2.23%) and the Balearic Islands (3.64%) had figures that were very low. Consequently, the prior problem that needs to be addressed for minimum incomes is that of expanding their coverage. Thus, the reform we are proposing consists simply in 'activating' the simulation of the minimum incomes of the Autonomous Communities provided for in EUROMOD.

Doing so conveys the idea that, before adjusting the policy design, it is necessary to guarantee a real implementation of the current policy. Applying the already designed policy properly would, in itself, considerably improve the system.

If the minimum income policy were fully implemented, then expenditure would increase by 58.9%, amounting to an extra €2 billion per annum. The percentage of GDP that Spain dedicates to it would rise from 0.29% to 0.46%. This higher expenditure would increase the number of beneficiaries by 68% (577,491 households), with a slightly lower mean amount (down from €334 to €296). This reduction in the mean amount can be explained by the fact that, by reaching all households that meet the requirements, those households less in need would receive a lower benefit.

In short, this minimum income reform would considerably improve the system's redistributive effect. While the current policy reduces the Gini index by 0.004 points, the reform would improve it more than twofold by up to 0.01, slightly above the European mean.

4.3. Reform of family benefits

Family benefits in Spain are mostly non-contributory benefits for dependent children. Children generate an entitlement to benefit up to the age of 18 (older if they have a disability considered greater than 65%), provided household income does not exceed €735.90 per month. It is a benefit whose monetary amounts are very low and, above all, subject to very strict eligibility criteria. This policy produces results that are clearly insufficient, but its reform will be addressed in another document.

4.4. Overall results

The set of reforms proposed here have a significant cost, but it produces very substantial results. Firstly, it removes some of the big problems stemming from certain types of policy, in which our country displays a clear disadvantage. Secondly, these policies would be much more redistributive and would help to improve our country's situation within our international environment. The main changes are summarised in the following table.

Table 4. **Main results of the reform of the Spanish tax-transfer system**

	Annual cost of the reforms		Changes to the Gini index		
	Euros	% GDP	Current policy	Reform	Difference
Intervened areas					
National insurance contribut.	132,908,172	0.01%	-0.003	0.008	0.011
Social exclusion	2,000,380,548	0.17%	0.004	0.010	0.006
Other areas					
Unemployment	0	0.00%	0.022	0.022	0.000
Old age	-10,007,748	0.00%	0.086	0.086	0.000
Survivor	-8,444,664	0.00%	0.022	0.022	0.000
Sickness	0	0.00%	0.002	0.002	0.000
Disability	0	0.00%	0.015	0.015	0.000
Family policy	-84,561,624	0.00%	0.004	0.004	0.000
Education	0	0.00%	0.001	0.001	0.000
Housing	0	0.00%	0.000	0.000	0.000
Income tax	1,663,790,736	0.14%	0.042	0.041	-0.001
Total	3,694,063,176	0.32%	0.194	0.210	0.016

Source: Compiled in-house.

As detailed in each case, the proposed policies would rectify the shortcomings identified. These reforms obviously entail a cost to the Administration: €3.694 billion per annum. However, this effort has a significant reward: the Gini index would improve by 0.016 points as a result of these reforms.

If market income presents an index of 0.532, the current policies in force in Spain would reduce it to 0.338, a considerable difference. The reforms proposed here would take it to 0.322, situating Spain slightly above the EU-28 mean with regard to the redistributive power of the tax and transfer system. There is another idea worth highlighting, which refers to the relationships between the different policies. While this study has proposed reforms in two policy areas (national insurance contributions and social exclusion), these changes generate effects on other policies.

When a policy reform is entered into the EUROMOD simulator, the data that this reform produces for each household also affect the calculation of other policies,

because some variables will have changed for certain households. In this case, policies relating to old age, survivors, family and income tax are affected, although there has not been any change in the corresponding regulation.

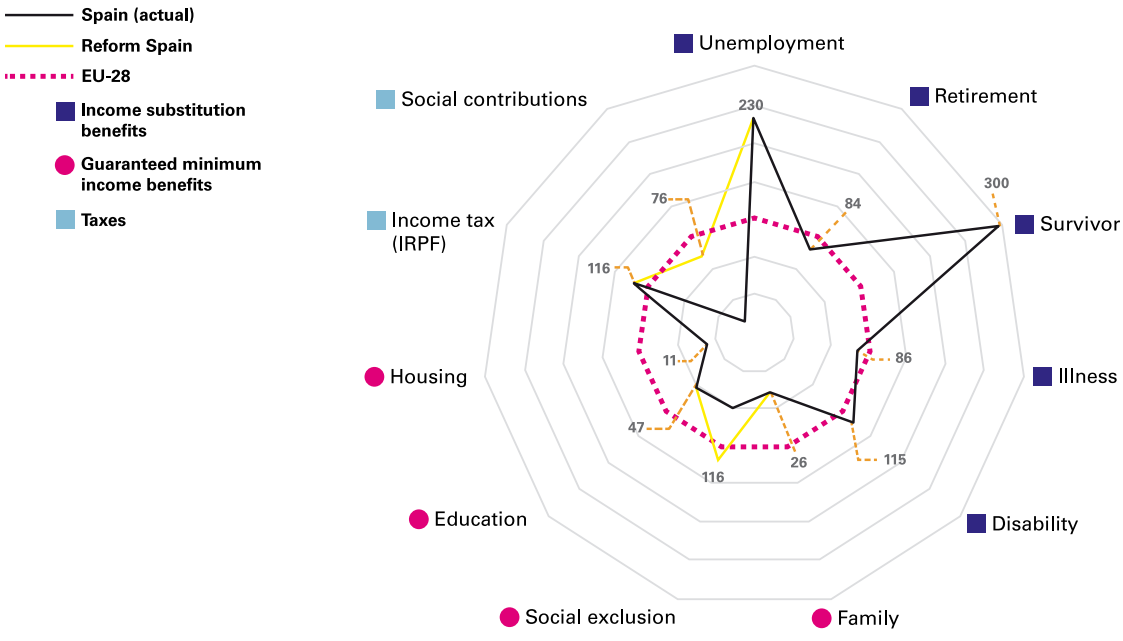
The change in the amount of income tax collected is particularly important, which would fall as a result of these reforms by €1.664 billion. Modifying workers' national insurance contributions, which are considered a deductible expense from work-related income tax, substantially changes the workers' tax bills. Individuals with lower incomes will make lower national insurance contributions, but they will see their income tax increase, unlike the case of individuals with higher incomes.

But the changes are not at all symmetrical, as the final result shows. Indeed, the reforms referred to in this work lead to a slight worsening of the redistributive effect of income tax (down from 0.042 to 0.041).

Comprehensive simulations like these highlight the close dependencies between different types of policies. Thus, isolated analyses do not fully reflect the consequences of a certain reform. Only full simulators of the tax and transfer system reflect these derived effects.

The following chart summarises the results of the reforms. Basically, Chart 13 is repeated, to which a new series of results from the mentioned reforms has been added.

Chart 16. **Redistributive effects of the current Spanish policy, and differential effects of the proposed reforms**



Source: Compiled in-house based on EUROMOD data.

The series, which corresponds to the reform introduced in this section, clearly improves those areas relating to social exclusion and national insurance contributions. The redistributive effect derived from the minimum income policy and from the national insurance contribution system would be slightly above the European mean.

5 Conclusions

// In Spain, the economic crisis led to an increase in economic benefits, since some of them are clearly anticyclical (such as unemployment or social exclusion benefits). The public revenues analysed remained fairly stable.

// The benefits with the highest amounts were the old age and survivor ones, followed by unemployment benefit. The volume of other benefits was relatively small.

// The distribution of market-generated income in Spain was much more unequal at the end of the period than it was before the start of the Great Recession. The tax and transfer system substantially redistributed income, even though redistributive capacity had been weakened by the crisis. In 2014, the disposable income of the richest 10% of the population was 14 times higher than that of the poorest 10%. The biggest redistributive effect was due to old age and survivor benefits and to income tax.

// Total expenditure on monetary benefits in Spain in 2018 (12.6%) was slightly lower than the EU-28 mean (13.7%). Benefits can be classified under two major groups: income replacement benefits (unemployment, old age, survivor, sickness and disability) and minimum guarantee benefits (family, social exclusion, education and housing). The combination of these two types of benefits enabled five welfare state models to be distinguished in the EU-28: Nordic, Eastern, Mediterranean, Continental and Anglo-Saxon countries.

// Regarding the revenues as a percentage of GDP analysed, Spain was also below (8.2%) the European mean (12%). In general, income tax was proportionally higher than workers' national insurance contributions, although the proportions varied considerably by country. Here too it was possible to identify different welfare state models: Continental, Mediterranean, Nordic and Eastern.

// The redistributive capacity of the Spanish tax and transfer system was among the lowest in the EU-28, with a reduction of 0.194 in the Gini index. The European mean reduced this index by 0.209 points. Spain was situated in 10th worst place. In the case of income replacement benefits, Spain (0.146) was above the EU mean (0.134), in ninth place. However, in the case of minimum guarantee benefits, Spain (0.009) was well below the EU-28 mean (0.028), in last place.

// Something similar occurred in the case of revenues. The reduction in inequality due to income tax in Spain (0.042) was above the European mean (0.035), in 11th place. However, national insurance contributions worsened income distribution in Spain (-0.003), the only negative index in Europe. Consequently, Spain was situated in last place, well behind the European mean (0.011).

// In the case of Spain, particularly serious problems were identified in its policies relating to national insurance contributions and to social exclusion, with reforms being proposed in both areas. To analyse the effects of potential reforms, in the case of national insurance contributions, the Belgian system was adopted. In the case of minimum incomes, the proposal aimed to ensure the effective application of existing regulation.

// The simulated reforms have a significant cost, but they generate a very substantial impact on the redistributive capacity of the Spanish tax and benefits system. With regard to the redistributive effect of national insurance contributions and social exclusion policies, the Spanish welfare state would be better situated within the European environment after these reforms.

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