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**Article**

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# How Did the Great Recession Affect Income Inequality in Spain?

by Pierre Blavier

## Introduction

One of the striking features of the Great Recession of 2008<sup>1</sup> has been the great increase in unemployment in some Southern European countries, including Greece and Italy – and particularly in Spain, where the unemployment rate, defined as the percentage of unemployed people in the active population (employed and unemployed), skyrocketed from 8% in 2008 to 25% in 2014, before dropping slightly to 22% in 2015 (Figure 1). This significant increase is found regardless of the definition of unemployment used (self-declaration or the ILO's – International Labour Organization's – definition<sup>2</sup>). The number of Spanish unemployed registered at the Employment Office rose from 2 million to 6 million between 2008 and 2014, whereas the population, at around 46 million, remained more or less constant. This short-term development is part of a long-term trend of increasing unemployment since the early 1970s in Spain and more broadly in other European countries.

Figure 1 also shows that high unemployment is not a new phenomenon in Spain, where it was above 20% in the mid-1980s (1984) and 1990s (1994). Yet this is the first time that unemployment has increased so dramatically, has exceeded 25%, and has stagnated at this level for years (2008–2015). It is also the first time that it applies to an activity rate of 75%, with the unemployed peaking at 20% of the whole working-age population in 2014, whereas the previous maximum, in 1994, was about 15%. This pattern clearly breaks the convergence trend of the Spanish economy that had prevailed until then. It also raises questions about the long-term sustainability of this situation in re-

gard to the pension system, unemployment benefits, the fertility rate, and inequality.

Indeed, this phenomenon raises questions about the impact of such a sudden and lasting increase in unemployment on income inequality. When Thomas Piketty came to Spain in January 2015, he said “The great source of inequality in Europe is unemployment,” and he recommended looking at the bottom of the income distribution.<sup>3</sup> Intuitively, increasing unemployment is likely to be accompanied by increasing income inequality, although other mechanisms may mitigate this effect. For example, capital income may decrease in times of crisis, which should moderate the rise of inequality.

The actual effect of increasing unemployment on income inequality remains open in the literature. For example, Aaberge et al. (2000) found a striking disconnect between the surge in unemployment and aggregate inequality indicators in Scandinavian countries in the early 1990s. Other authors suggest that inequality and recessions are generally correlated (Heathcote et al. 2010; Krueger et al. 2010). Regarding the Great Recession of 2008, some empirical studies (see Giannitsis and Zografakis 2015 for Greece; Grusky et al. 2011 for the US) have indicated that inequality has indeed increased, although not as much as could have been expected.

Ferrer-i-Carbonnel et al. (2013) have shown that before the Great Recession, Spain was no exception to this empirical rule of thumb, as inequality did indeed increase during the recession of the early 1990s. Nevertheless, as Pijoan-Mas and Sánchez-Marcos (2010) have argued, “inequality in individual net labor earnings and household net disposable income [in Spain] has decreased” from 1985 to 2000. In their extension of this period to the beginning of the Great Recession (2010), Ferrer-i-Carbonnel et al. (2013) came to the same conclusion. This trend was mainly due to a rather surprising decrease in the tertiary education premium (Felgueroso et al. 2016), decreasing unemployment since the begin-

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ning of the 1990s, and the development of the welfare state since the 1980s (Moreno 2006; Guillen and Pavoletti 2015; Palomera 2015), with improvements in retirement pensions (Natalid and Stamati 2014), for example, and in unemployment and layoff benefits (Gil Martín 2002). Otherwise, few studies exist for the most recent period and for the Great Recession. Apart from a recent

study by Goerlich (2016), the case of Spain is often left aside (Jenkins et al. 2013; Gornick and Jantti 2013; Kollmeyer 2013), even though the country remains one of the most unequal in Europe (see the OECD Income Distribution Database<sup>4</sup>).

This paper presents some empirical evidence to fill this gap. How has inequality evolved in Spain during the Great Recession? What mechanisms and hypotheses can explain this development?

To answer these questions, we investigate the development of income inequality in Spain in recent years in the context of the past few decades, using indicators reflecting both objective income inequality and households' subjective declarations. We note a worsening of income inequality during the Great Recession, but the overall effect is rather limited in historical perspective and in comparison with the increase in unemployment. After establishing this puzzling result, we conclude by discussing mechanisms that are likely to explain it.

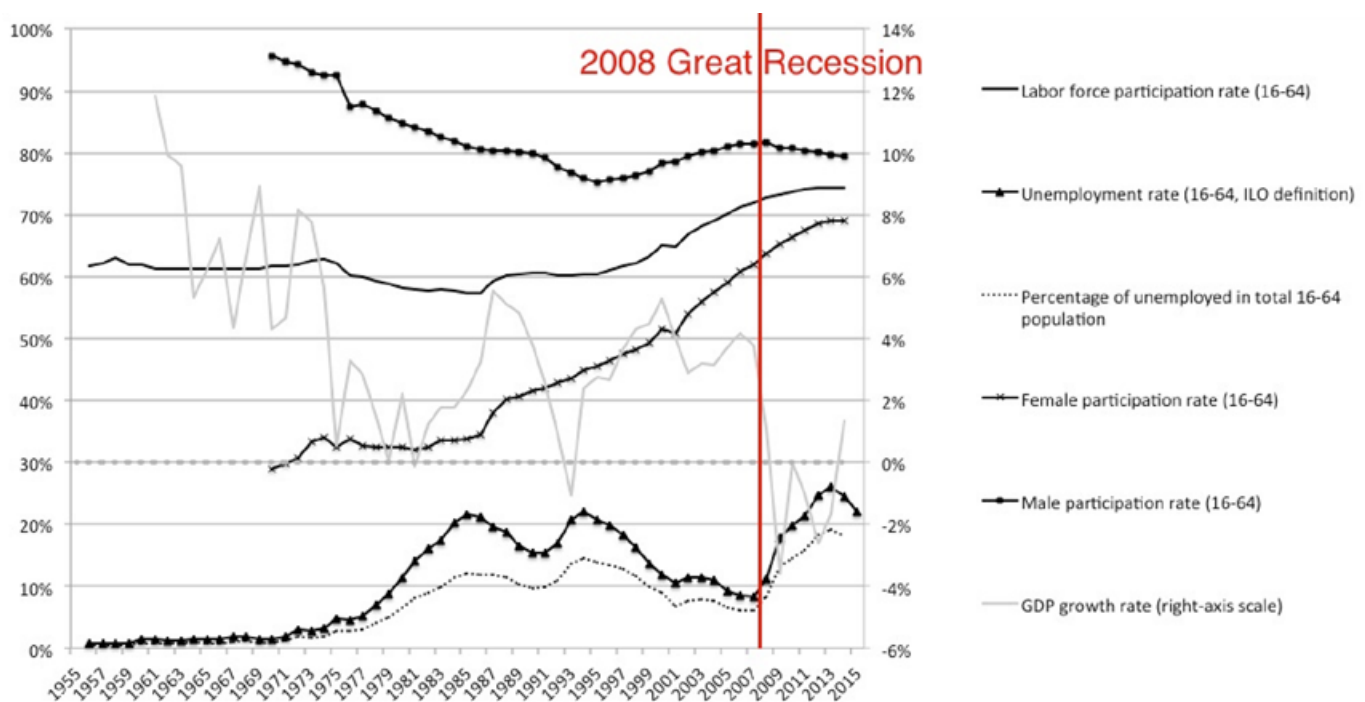
Our analysis is based on standard surveys of living conditions, namely the European Union Statistics on Income and Living Conditions (EU-SILC, 2004–2014) and the earlier European Community Household Panel surveys (ECHP, 1994–2001),<sup>5</sup> which are comprehensive annual micro-level datasets of income and living conditions at the individual and household level. Capital income is usually subject to a downward bias in such data,

but here the top income revenues do not seem to be underestimated significantly: the top 1% of households concentrate 7% of total income, which is in the same order of magnitude as the figure computed in the World Income Database based on Spanish national accounts.<sup>6</sup> Wealth effects regarding housing prices are not considered here.

## Looking at the facts: Standard aggregate indicators depict a real but moderate increase in income inequality

Spanish inequality has generated a limited amount of literature. For the past, this dearth of research seems to be mainly due to a lack of empirical data, as almost no data existed before 1985 (Pijoan-Mas and Sánchez-Marcos 2010; Ferrer-i-Carbonnel et al. 2013).<sup>7</sup> Nonetheless, this trend continues for the years since then, even though we now have data for them (Jenkins et al. 2013; Gornick and Jantti 2013).

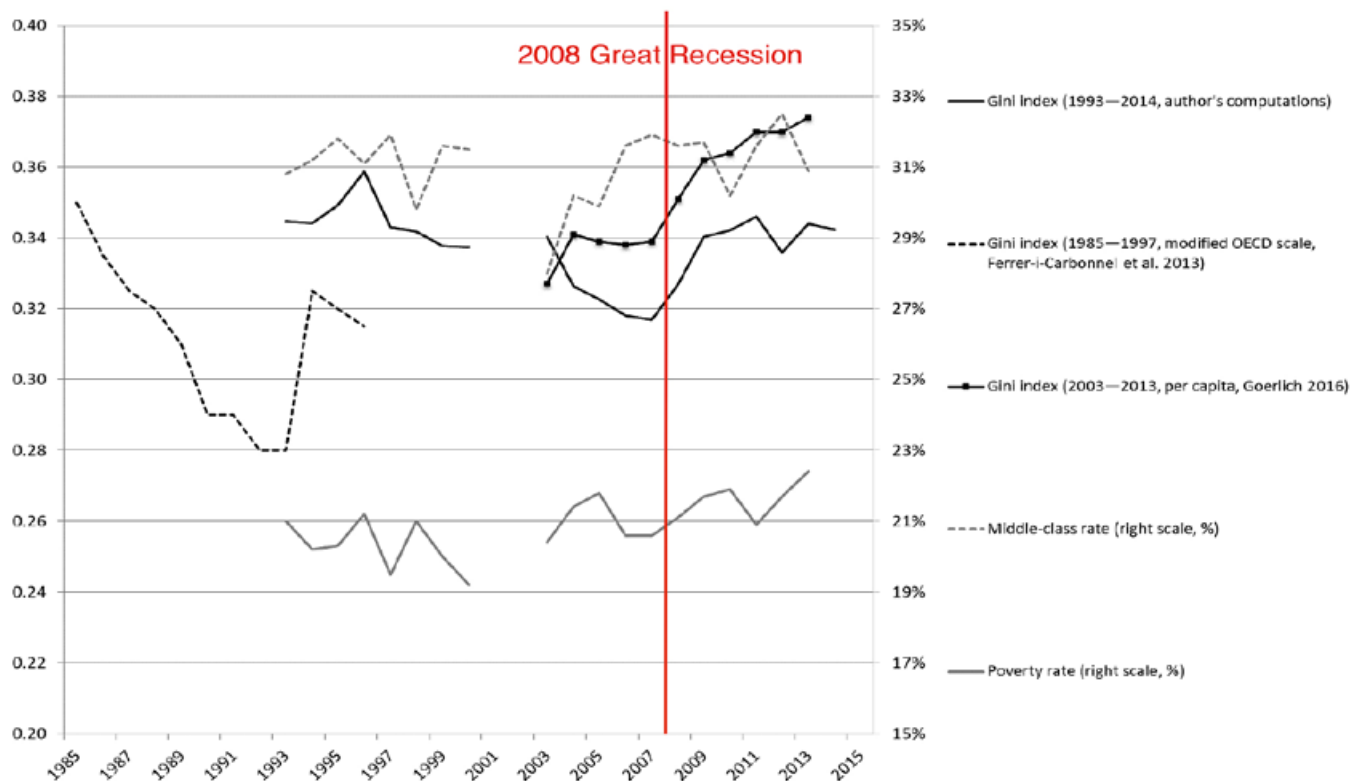
Some results regarding historical trends have been established, however. Concerning wealth distribution, Alvaredo (2008, 18–106) has shown that, contrary to what is commonly thought, the income share of the top decile decreased during the dictatorship. It has in-



**Figure 1.** Harmonized development of growth and labor figures in Spain, 1956–2014

Source: OECD data, corrected for definitional changes.

Note: Real GDP growth is in gray and refers to the right vertical axis. All the other curves (in black) concern the labor market and refer to the left vertical axis. The activity rate is the percentage of the working-age population (15 to 64 years old, by international convention) that is active, either employed or unemployed. The unemployment rate is the percentage of unemployed individuals in the active population.



**Figure 2.** The development of different inequality indexes using different calculations, 1985–2014

Source: European Union Statistics on Income and Living Conditions (EU-SILC, 2004–2014) and European Community Household Panel surveys (ECHP, 1994–2001).

Note: The middle-class and poverty rates (in gray) refer to the right axis, and all other Gini indexes (in black) to the left one. For 2014, the Spanish Gini coefficient is 0.34 (modified OECD scale computed from household data). The 1985–1996 series corresponds to the calculations presented by Ferrer-i-Carbonnel et al. (2013) with modified OECD scale and consumption survey data. The discrepancy has already been noted by Pijoan-Mas and Sánchez-Marcos (2010) and Ferrer-i-Carbonnel et al. (2013, 14). The third measure is presented by Goerlich (2016, 53) at the individual level (and with a nominal deflator, but whose effect remains marginal since the inflation rate is very low), which explains why he finds a higher Gini index. All values are in real (constant) terms, indexed to the OECD Consumer Price Index (CPI) with 2010 as reference.

creased since the 1980s, following the same trend as in many other European countries. Alvaredo notes that the housing bubble may have limited this trend, as it benefited the middle class most.

One specific aspect of the situation in Spain is the sharp decline in the education premium since the beginning of the 1990s. Felgueroso et al. (2016) and Bernardi (2012) test various hypotheses for the correlation between education and earning power, but have only partly succeeded in explaining it. This development contrasts greatly with what has been noted, for example, in the United States, where education inequality is often cited as one reason for the current growth of inequality (Autor 2014). The situation in the United States is attributed to a lack of college graduates who are adequately employed, which fuels fierce competition to hire them and thus increases their wages (Hidalgo 2010). This explanation does not hold in Spain (or other countries, including France), where tertiary education has increased significantly since the 1980s.

Another specific aspect we observe is that Spain, like other Southern European countries that experienced

dictatorships and until recently were very rural (Greece, Portugal), is characterized by an underdeveloped welfare system in comparison with other European countries. This causes Spain to be one of the most unequal countries in Europe, with a very high Gini index, for example.

At first sight, it seems obvious that income inequality in Spain has increased during the Great Recession. We use the Gini index to investigate this view because it is a standard indicator of inequality, easy to compute, well known, and quite intuitive, and because it encompasses the whole distribution. The Theil index, which shares these characteristics with the Gini (with the exception that it may be less intuitive),<sup>8</sup> yields similar results. Below, we use income deciles and ventiles to zoom in on specific aspects of income distribution in Spain, particularly at the bottom.

If we apply the Gini index to per capita disposable income,<sup>9</sup> we find that this income has indeed increased significantly from 2008 to 2012 (Figure 2), a period during which there were two waves of increased unemployment in Spain (from 11% to 18% in 2008–2009 and from 20% to 26% in 2011–2012<sup>10</sup>). This trend is consistent

with the official figures of Spain's National Statistics Institute (Instituto Nacional de Estadística, INE)<sup>11</sup> as well as a recent report by Goerlich (2016, 24). This consistency is to be expected since both of these sources use the same data as we do (EU-SILC).

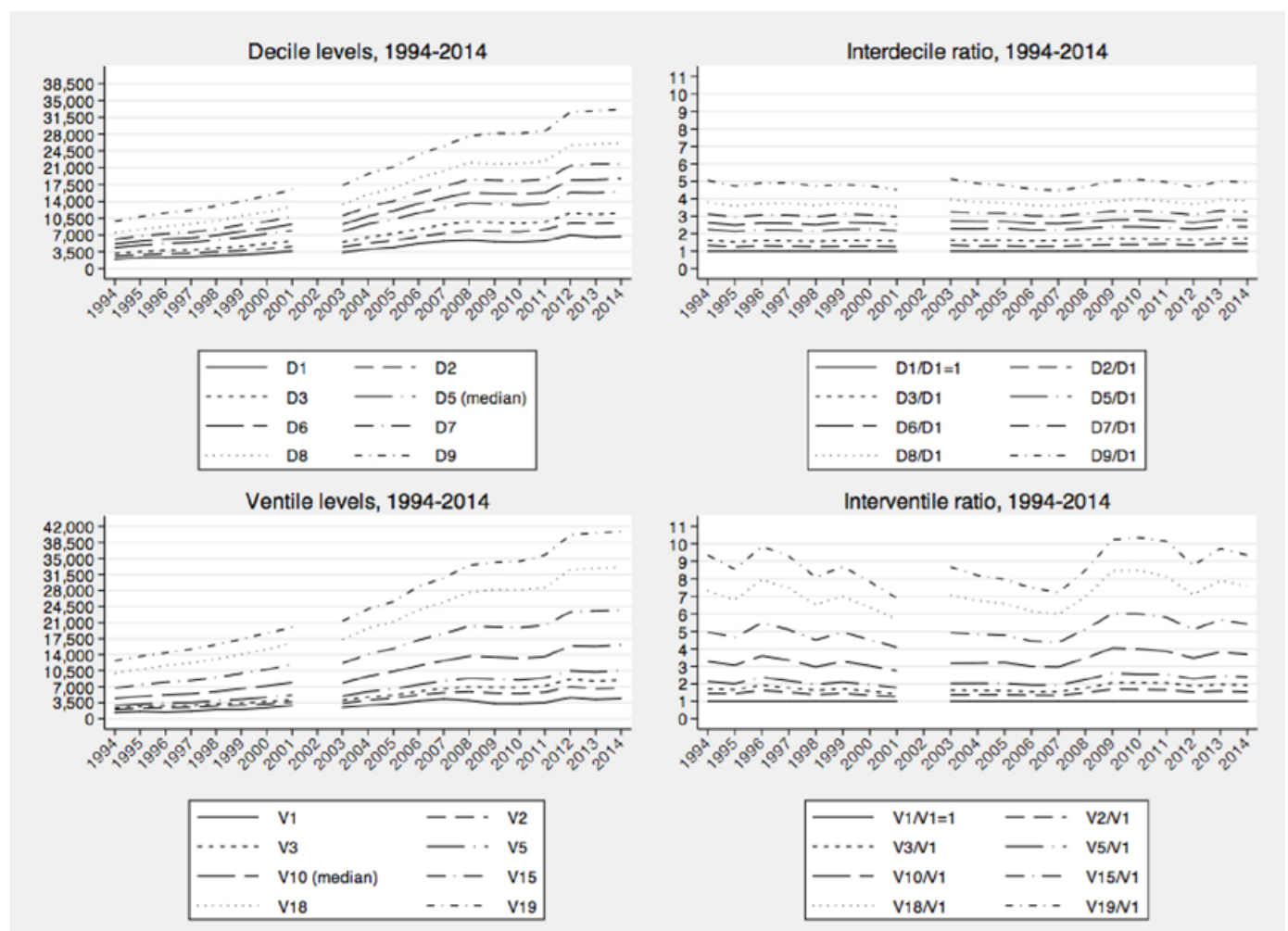
However, we would like to show that this observation is not so trivial, for several reasons. First, the fluctuations of the Gini index depend on numerous parameters:

1. The dataset used and the income sources it takes into account. Figure 2 shows that the Gini index may change depending on which dataset is used.
2. The scale of equivalence used: the square root of household members, the OECD scale, the OECD modified scale,<sup>12</sup> or no equivalence weights, i.e. per capita (each household member counts for one).
3. The use or non-use of the survey weights.
4. The statistical unit: household or individual.
5. The range/scope of the population (above 18 years old or not).

6. The use of a deflator to take into account the regional price index or calculation in nominal terms, although this parameter has little effect (Goerlich 2016).

The differences in these parameters explain why varying Gini index levels are found in the literature: it is common to find variations between different estimates, as can be seen in Figure 2. This suggests that using the percent changes of the Gini index as the result variable is not very reliable. It blurs the observation of inequality and makes it difficult to know what we are talking about, all the more so because the conventions employed are rarely specified. This basically suggests that more attention should be paid to the statistical source employed.<sup>13</sup>

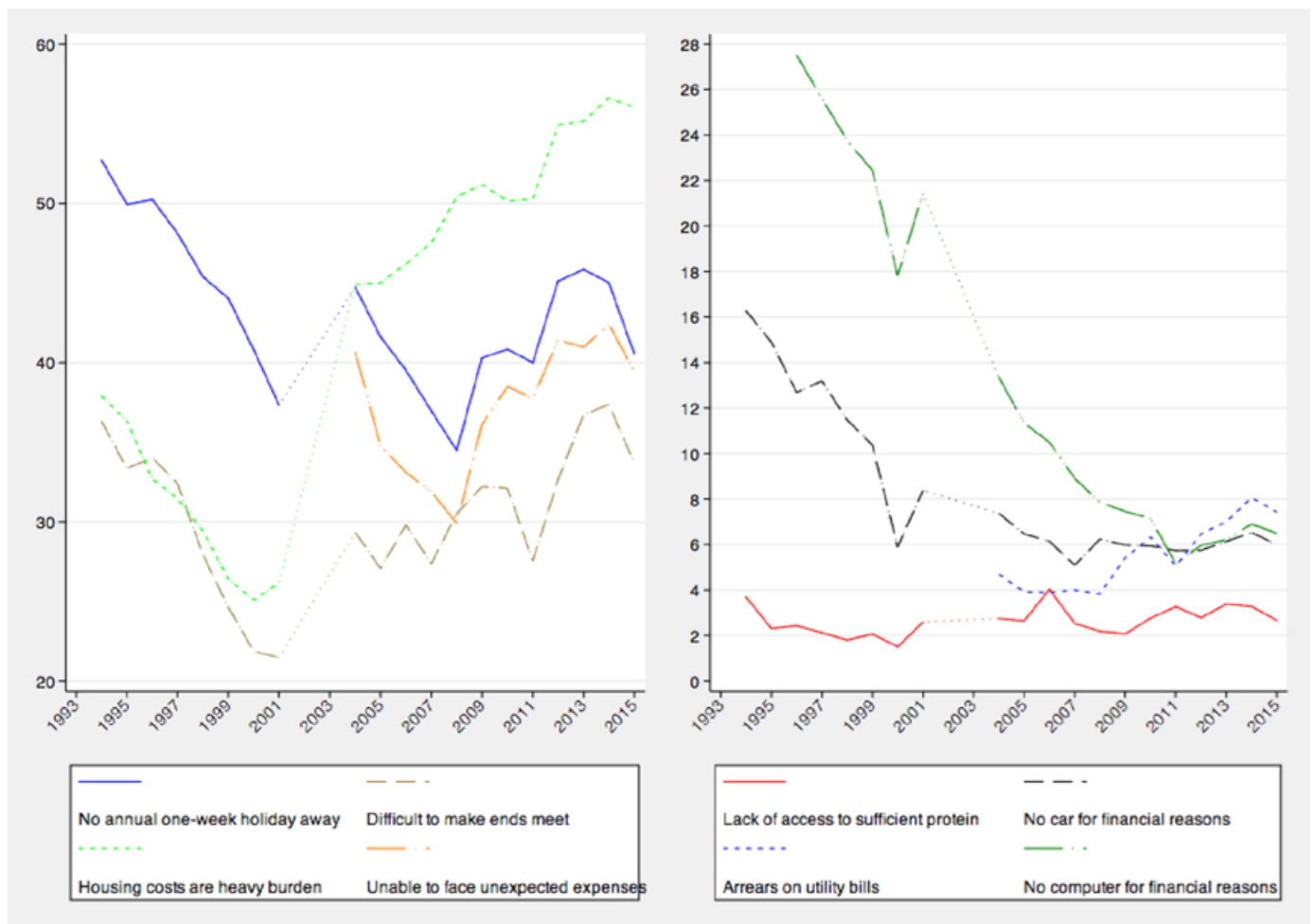
A second point concerns the scope of time taken into account. Indeed, we have seen that inequality is once more on the rise, after the opposite trend had prevailed since the 1980s (Ferrer-i-Carbonnel et al. 2013; Alvaredo and Saez 2009; Pijoan-Mas and Sánchez-Marcos 2010; Bonhomme and Hospido 2012). But the change is hardly major, and inequality is not much great-



**Figure 3.** Real annual disposable income per consumption unit in Spain, 1994–2014: Development of interdecile and interventile levels and ratios  
Source: ECHP, EU-SILC 1994–2014.

Note: In 2013 in Spain, the real annually disposable income per consumption unit (square root of the number of members in the household) of the tenth decile (D9) is 31,500 euros. This amounts to five times that of the first decile (D9/D1).<sup>14</sup>





**Figure 4.** Economic hardships in Spain, 1994–2014 (in percent of households)

Source: ECHP & EU-SILC data.

Field: All households in the survey.

Note: In 1994, 52% of Spanish households could not pay for one week of vacation away per year. The jump between 2001 and 2004 is not interpretable because it is due to a change of datasets.

er than it has been in the past, as can be seen in Figure 2. It is always problematic to determine the extent to which a given change in inequality should be considered important, but in this case it is rather clear that income inequality has hardly responded to the explosion in unemployment (from 8% in 2007 to over 20% until 2016) experienced by Spain during the Great Recession.

Third, it should be noticed that the same trend is observed if other indexes are considered. Figure 2 reports the development of three standard inequality indicators for disposable income from 1994 to 2014: the Gini index (left scale); the poverty rate (60% of disposable income median); and the middle class, defined by Pressman (2007) as households receiving between 75% and 125% of the median income. Pressman's hypothesis of a growing destabilization of the middle class during recessions is not supported by the data. Nominal median income has stagnated but not decreased, so the lack of change in the poverty rate cannot be explained by its fluctuations, as some have argued.

## Similar pattern with decile analysis

Another explanation for this surprising result may lie in the fact that the previous indicators are very aggregate ones, which may make specific trends within the income distribution, as well as effects restricted to some parts of it, invisible. To tackle this problem, we analyze the development of nominal disposable income deciles, ordered from the poorest (first decile) to the richest (last decile). This approach has clear limits (Piketty 2014, 266–68): deciles with very low numbers of observations are unreliable (e.g. capital income for the poorest deciles), and by definition deciles do not zoom in on specific parts of the income distribution (e.g. the top 1%). But here it is appropriate because we are not focusing on the extremes of the distribution (top or bottom 1%) and disposable income is consistent across the distribution even though the income sources vary (no large part of the distribu-

tion has zero disposable income, as can be the case for specific types of income derived from capital). Results are presented in Figure 3.

This approach results in remarkable stability between deciles. For example, as depicted by the top right graph in Figure 3, the ratio between D9 and D1 remains around 5 for the whole period. This means that all deciles have grown at an approximately similar rate, indicating that inequality remained constant if considered in a multiplicative way. To see any decrease in inequality, one has to look at the lowest ventiles (bottom two graphs of Figure 3): only the first ventile exhibits a significant decrease, thus triggering a clear rising interventile ratio with the top part of the distribution (bottom left graph of Figure 3) from 7 in 2008 to more than 10 in 2010.

Yet very different conclusions can be drawn if we consider interdecile income differences: in 1994, the difference between the ninth decile and the first was  $D9-D1=15,000-3,000=12,000$  euros (per consumption unit), whereas in 2013 it was  $30,000-6,000=24,000$  euros. Hence very different results are obtained depending on whether we consider inequality in terms of ratio or difference. To the best of our knowledge (Combessie 2011), there is no clear-cut reason to use one over the other, although nowadays the multiplicative method is more commonly used. Furthermore, it is also surprising to note that incomes have barely dropped at all. Indeed, incomes have decreased only slightly for the lowest deciles or ventiles, but these decreases can be considered very limited if viewed in the long run. Goerlich (2016, 29) also finds mean fluctuations by quintiles over different periods (2003–2007 and 2008–2013). He finds a decrease in incomes of -7% for the lowest quintile (0–20%) in 2008–2013, which is not very much of a difference compared with the trend in the long run. It seems appropriate, therefore, to speak of stagnation in the lowest quintile.

This result stands in sharp contrast to the trend in unemployment. It can easily be shown that unemployment has been concentrated in low-income groups. Unemployment benefits may also be at stake: their redistributive effect depends on the replacement rate and the share of the unemployed covered by the system. Both have been modified during the Great Recession. The replacement scheme has been lowered by between 10% and 20% by two austerity labor reform laws (2010, 2012). The cover rate has progressively declined, from more than 60% in 2011 to 50% in 2014, according to the official data of Spain's National Statistics Institute.

Reductions in working hours or wages have not played a great role in income developments. Only a small share of workers has been affected by such reductions, and the reductions for those who have been affect-

ed – such as the civil servants, who lost an extra month of salary beginning in 2012, whose wages were frozen, and who had a wage drop of 5% in 2010 due to the Zapatero reform – have not been substantial. Nor have there been any significant developments in wage inequalities.

## A contrasting picture with economic hardship indicators

Some standard hardship indicators suggest that the Great Recession marks a clear turning point in terms of economic hardship, as can be seen in Figure 4.

The curves in Figure 4 are U-shaped: a decrease in hardships after the recession at the beginning of the 1990s, relative stagnation, and then a worsening since 2008. For example, difficulty facing unexpected expenses rose from 30% to more than 40%. In keeping with the housing bubble, housing indicators have increased the most. For example, arrears on utility bills increased from 4% to 8% in 2010. Particularly impressive is the upsurge in households that consider their housing costs a “heavy burden”: the percentage of households in this situation was already high before 2008 (about 45% in 2004), but increased almost continuously to over 55%, whereas it had decreased a great deal in the 1990s. This development suggests how important the housing component is in household budgets. The trends for other items such as a lack of access to sufficient protein and the inability to afford a car or computer are much less pronounced, partly as a result of the decreasing cost of these items over the last few decades.

Overall, the impact of the Great Recession is real, but it has still not brought Spain back to the levels at the beginning of the 1990s. And there is a sharp contrast between the trend in terms of hardship indicators (Figure 4) and the development of inequality presented above. How can this contrast be explained? Three hypotheses can be proposed. First, it can be attributed to the decline in income at the bottom of the distribution, as moderate as that might seem: in relative terms the decline for the bottom ventile is more important than for other ventiles. Second, it can be the result of declining income trajectories, which have increased considerably with the Great Recession as a result of unemployment. Finally, we might be observing a phenomenon Gollac described in another context (Gollac 1997). He noticed a sharp decline in how some professions, such as nursing, assessed their working conditions between surveys conducted in 1986 and in 1991. While no objective change in working conditions could account for this decline, impor-

tant social mobilization in those sectors may have led workers to realize how poor their working conditions were. In other words, the meaning of a questionnaire may depend heavily on the context and the state of the world observed through the survey, and not only on what it is expected to measure objectively. In our case, the hardship indicators may also reflect the politicization of the issue of living standards in Spain, in keeping with the framing promoted by the Platform for People Affected by Mortgages (PAH, *Plataforma de Afectados por la Hipoteca*) and other militant groups (including Podemos and various organizations of the unemployed): the Great Recession has not only affected living standards in Spain, but also the way the Spanish population perceives them. All these explanations are likely to be part of the answer and need further research.

## Synthesis: Various hypotheses

Different mechanisms may be responsible for the paradoxical development presented here.<sup>15</sup> First, a decrease in employment earnings can be compensated for by alternative sources of income, such as benefits deriving from social policy (automatic sta-

bilizers), returns on capital, or familial solidarity. Secondly, behavioral changes can play a role: people adapt their behavior to the economic context. This is especially true for young people, who may remain in their parents' home longer or study longer; for spouses, who may enter the labor market to compensate for their partner's lost job (added worker effect); and older unemployed, who may retire earlier than expected. Finally, it may be that those most affected by the Great Recession have emigrated, leading to a change in the census composition and thus to observational fallacies. Two different kinds of people are likely to have chosen this exit option to cope with the Great Recession: immigrants and unemployed Spanish youth. This possibility would be consistent with the stagnation of the total population in Spain, which has remained almost constant at 46 million since 2009.<sup>16</sup>

Finally, here we have considered only the case of Spain. In further research, it would be fruitful to compare developments in Spain with those in the Southern European countries hit hardest by the Great Recession (Greece, Italy, Portugal), and with those in the Northern part of the Continent. The distance between the Northern countries and a country like Spain has probably grown since 2008.

## Acknowledgements

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## Endnotes

- 1 Referred to here as the Great Recession.
- 2 According to the ILO's 1982 definition of unemployment, unemployed persons are between 16 and 64 years of age and meet three criteria: they have not worked in the previous week; they are available to accept a job within the next two weeks; and they have actively looked for a job in the last month.
- 3 Spanish national newspaper *El País*, January 11, 2015.
- 4 <http://www.oecd.org/social/income-distribution-database.html>
- 5 This survey does not offer sufficient precision regarding income, but it inspired the EU-SILC and yields coherent results.
- 6 As explained in the methodological note found at <http://wid.world/>.
- 7 Some data does exist, but it is either hardly reliable (consumption surveys) or do not document incomes (e.g. the Spanish and European Labor Force Survey, LFS, that began in 1976).
- 8 The Theil index can also be broken down into various parts, but based on groups and not on income sources, unlike the Gini index.
- 9 Household disposable income consists mainly of the wages of all household members, self-employed and capital incomes, and inter-household and welfare transfers including unemployment benefits and retirement pensions minus social insurance contributions and taxes on income and wealth.
- 10 Source: Encuesta de la Población Activa (EPA) Survey, Instituto Nacional de la Estadística (National Statistics Institute of Spain).
- 11 See <http://www.ine.es/jaxiT3/Tabla.htm?t=9966>.
- 12 The OECD modified scale assigns a value of 1 to the first household member, 0.5 to each additional adult, and 0.3 to each child.
- 13 Piketty's success is partly explained by the carefulness of his data and the fact that he makes the data he uses publicly available.
- 14 Taking the ratio respective to the median gives same results.
- 15 These mechanisms are tested empirically in my doctoral thesis.
- 16 Source: Spanish census. Obviously this trend is also due to other factors, including aging.



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