PAPER

**Title: RICH URBANITES AND POOR VILLAGERS?:
THE EFFECT OF THE URBAN-RURAL GAP ON INCOME DISTRIBUTION**

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Subject area: *Rural studies; regional studies; economic geography; inequality.*

Abstract: This paper analyzes the existence of an urban-rural gap in per capita income. To what extent does the degree of urbanization (urban, intermediate, or rural) of the area where an individual lives affect their income in Spain. I use data from the Living Conditions Survey and the Household Budget Survey in 2020. I estimate a quantile regression to analyze the urban-intermediate and urban-rural gaps in the distribution of log market income and log final income. The regression includes personal characteristics as controls and region fixed effects that ensure that the gaps are not simply driven by regional differences. Results show that the effect on market income of living in a rural area compared with an urban area reduces income by almost 10%. This urban-rural gap is reduced to almost 7% in final income, this is, after fiscal redistribution is accomplished by the state. If we look at the quantiles of the distribution of income, the higher the quantile, the more significant the effect of the urban-rural gap and vice versa. There also exists a gap between the urban and the intermediate areas, but the effect on income is lower (although less reduced by redistribution). Running the same regression for each region, we find that the urban-intermediate and urban-rural gaps are very heterogeneous depending on the region. These findings suggest that in order to reduce inequalities, fiscal policies should take into account not only the income differences, but also the degree of urbanization of the area where the individual lives.

Keywords: *urban area, rural area, gap, income, quantile.*
JEL codes:

1. INTRODUCTION

The urban-rural divide is growing in our societies in recent times (Mettler & Brown, 2022). This is creating threats to the principle of equality among citizens and it is endangering even our democratic institutions (Wuthnow, 2018). Citizens of the same country feel that their realities are totally different depending on if they live in a urban or rural area. Low state investments, labor opportunities, access to services, culture or technology are some of the areas that differ in the rural areas suffer in comparison with urban areas. This creates sometimes discontent, resentment and revenge feelings in rural areas (Dijkstra, et al., 2020). Exploring and measuring the urban-rural gaps on different aspects can be a way of reducing inequalities, strengthen social cohesion and democratic institutions.

This paper studies the urban-rural gap as a determinant of personal income in Spain. I focus in the differences in welfare, measured by two different variables of per capita income: market income and final income. I use data from the Living Conditions Survey and the Household Budget Survey of the year 2020 (collected previously to the start of the COVID-19 pandemic). Merging both databases, I create the income indicators for each individual and I select those variables that are recognized in previous literature as income determinants. Furthermore, I also sort out my variable of interest which is if the individual lives in a urban, intermediate or rural area.

After doing a general OLS regression to have an overview of the urban-rural gap effect on income, I use the quantile regressions technique to differentiate the urban-rural gap effect across all the income distribution and to see how the gap varies for the income of those who are richer or poorer. After that, I do the previous regression for each region in Spain. This allows for inter-regional comparisons of the urban-rural gap. Results show that there is a significant urban-rural gap on income. This is, the same individual, with the same characteristics would have a penalty on his/her income if he lives in a rural environment compared to a urban one. Specifically, the gap size is 10% of individual's market income on average. The gap is reduced to 7% when the process of redistribution is applied and we compare final incomes. There is also a urban-intermediate gap, comparing urban areas with intermediate areas, but the size is smaller than our gap of interest. Moreover, the higher the income, the larger the urban-rural gap. From no significant difference for the 5th quantile, to a gap of 13% for market income and 9% for final income in the 95th quantile. Furthermore, there is a large

heterogeneity of the gap among regions. There are regions where the gap near to 0, or even the case of a positive gap for Balearic islands (meaning higher income if individuals live in rural areas), but there are also regions, like Castilla-La Mancha where the gap for market income is larger than 25%.

This results have implications on individual's decisions and can explain, for example, migration decisions from rural to urban areas. In order to reduce the problem of depopulation in some areas, policies should reduce this gap to reduce the migration flows that transfer individuals from rural to urban areas. Also in order to guarantee equality among citizens in countries, the urban-rural gap should be reduced through public policies. Also, the fact that the gap is heterogenous among regions makes us think on the importance of applying region-based policies that can reduce the gap where it has a larger size. One direct fiscal policy implication would be that taxes and transfers both have a territorial component that favors individuals in rural areas with respect to individuals in urban areas. This would reduce the urban-rural gap, promote equality among citizens and lower migration rates from the rural to the urban areas.

Figure 1. Urban-rural gap on income by quantile (in €)
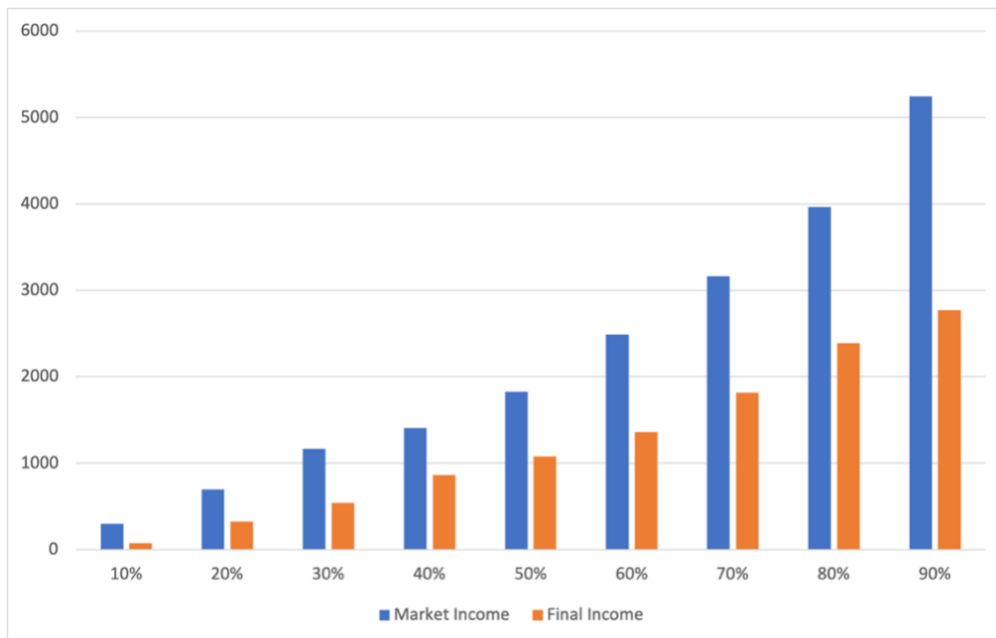
Source: Own elaboration using INE data

There is existing evidence for other countries, pointing at how big or small is the effect of the urban-rural gap in determining income. China is one of the most striking examples with more than 25% of income differences among individuals being explained by the urban-rural gap

(Sicular et al., 2007). In other countries as Greece (Tsakloglou, 1993), Indonesia (Akita et al., 1999) or the Philippines (Balisacan & Fuwa, 2004), the percentage is lower although we observe striking differences between countries (Shorrocks & Guanghua, 2005). However, the case of Spain remains unstudied. This case is especially interesting due to the particularity that Spain is the country with the lowest density of settlements across Europe (Gutierrez et al., 2020). This makes us think that the urban-rural gap implications in Spain may be broader than in other countries.

Subtracting the average income per capita for rural areas to the average income per capita for urban areas in each decile of income, will result in the average urban-rural gap in euros for the different income levels. This is what figure 1 shows. We can observe how the redistributive process helps to reduce the gap when we jump from market income to final income. But it is also clear that the gap still exists after the redistributive process. It can be observed that the gap increases with the deciles. It can also be noticed that the size in the reduction of the urban-rural gap that the redistribution process operates through the fiscal system also increases with the deciles.

Figure 2. Median urban-rural gap on market and final income (in €)
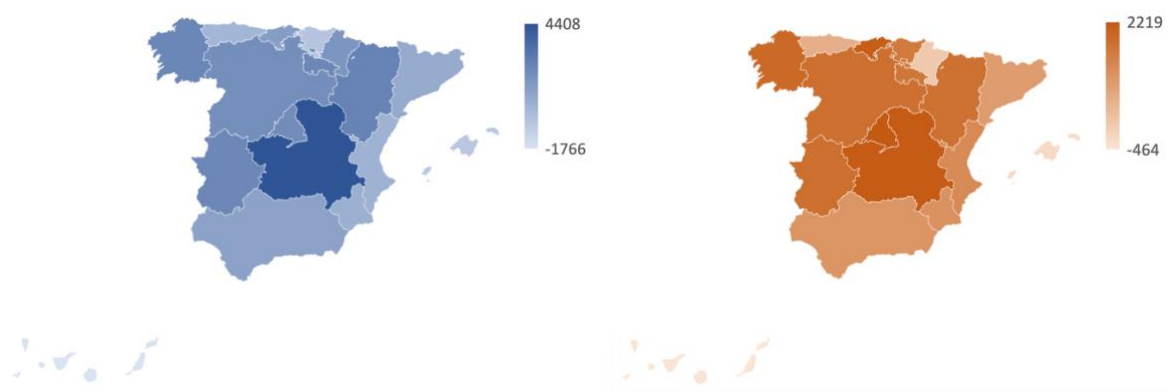
Source: Own elaboration using INE data

Subtracting the median rural income in a region to the median urban income in the same region gives us a regional overview on the absolute urban-rural gap. This is summarized in figure 2, where we can see the gap for market income on the left, and the gap for final income on the right (expressed in €). We can observe communities with large urban-rural gaps, but also some communities with very low or even negative gaps. We also notice that after the process of

redistribution, some regions continue to have very large gaps (e.g. Castilla-La Mancha), some reduce their gaps relative to other regions (e.g. Basque Country), some regions increase their gaps relative to other regions (e.g. Madrid or Cantabria), and some regions continue to have very low gaps (e.g. Canary and Balearic Islands).

This paper is organized as follows: After this introduction, a brief review of the literature on the topic is done. Subsequently, the paper explains the data and methodology used. Later, a general overview of the data distribution can be seen in the section devoted to summary statistics. Afterwards, the paper explains the regressions used and the results obtained. In the last section, the paper concludes summarizing the paper, giving some policy recommendations and establishing open areas for future research.

2. LITERATURE REVIEW

This article draws on a rich literature in a number of areas. First and foremost, the study of how geography affect to economic variables. In the 2000s, this area of research experimented an expansion and new focus due to the emergence of the New Economic Geography (NEG) (Krugman, 1999; Fujita et al., 1999; Henderson et al., 2001; Ottaviano et al., 2002; Combes et al., 2008). NEG models provide a framework to analyze how economic activity is localized in some places or others, and how this changes with time due to the geographical location of variables such as technology, knowledge, transport infrastructure or capital accumulation. In fact, NEG studies have shown the strength of economic activity concentration in those places where the starting level of economic activity was already high.

One of the many divides that economic geography has studied, is the urban-rural gap. The urban-rural gap is an old topic in the economic geography literature (Dewey, 1960; Benet, 1963; Pahl, 1966). Traditional literature about the urban-rural gap, explained that urban environments were the ones that lead knowledge, innovation and economic growth (Duranton & Puga, 2004; Glaeser, 2011; Combes et al., 2012). This stream of research was even supported by the view of International Organizations (World Bank, 2009; World Economic Forum, 2012). However, more recent research has pointed out that "there is no law that makes big cities always more dynamic. Gambling on large agglomerations as winning horses is not always a sure bet and is now becoming more perilous than ever" (Rodriguez-Pose, 2018, p.206). As a

consequence, new research is showing the necessity to close the urban-rural gap, especially when it comes to income differences.

It is precisely Rodriguez-Pose (2018) who revived the topic of the gap between the dynamic and the stagnated areas in the research agenda by introducing new perspectives on it. Although there is not a complete identification of dynamic regions with urban ones, and of stagnated regions with rural ones, it is also true that the dynamic regions are always big urban environments while the rural areas are generally stagnated. It is then clear that the widening of the urban-rural gap globally has come hand-in-hand with economic development. This has had side effects as a social discontent in those "lagged behind areas". Studying the urban-rural gap can shed some light on what policies can be implemented to reduce this territorial inequality.

Furthermore, this article also constructs on the rich literature of income inequality. This area of research is attracting the attention of economics research in recent times. Recent studies have shown an increase in income inequality (Piketty, 2014; Milanovic, 2012; Stiglitz, 2013). For the case of Spain, similar conclusions have been raised (Anghel, et al., 2018; Prados de la Escosura, 2008). Receiving rents from labor or capital, being male or female, or the sector of activity of the worker, are among the more important determinants of individual's per capita income in these studies. However, the role of living in a urban or rural area remains unstudied as an income determinant for a developed economy.

Another area of literature on which this paper relies is the literature on fiscal redistribution. Efficient fiscal redistributive systems help to reduce income inequality without damaging the efficiency of the system. However, inefficient fiscal redistributive systems can also increase inequality and widen the social gaps in a country (Lustig, 2017). Understanding how efficient or inefficient fiscal redistributive systems are, can make a difference in inequality reduction without affecting to other economic factors. Furthermore, most on the modern ideas on how to reduce the problem of income inequality have relied on one way or another on different reforms of the fiscal redistributive system (Atkinson, 2015; Milanovic, 2016; Blanchard & Rodrik, 2021). Similarly, conclusions have been reflected in the literature for Spain (Cantó, 2013; Ayala & Jurado, 2011).

This paper contributes to the existing literature by first, stating if there exists an urban-rural gap in Spain and what is its size. Second, the paper answers to whether this Spanish urban-

rural gap is also translated to the income differences of the individuals. This is, to what extent this gap is a significant determinant of income and thus can explain part of the interpersonal income inequality in Spain. Last, this paper contributes by answering if policy makers should take the urban-rural gap as a substantial problem that they should approach, and if so, orientating which factors should public policies take into account in order to approach the reduction of the urban-rural gap.

3. METHODOLOGY

In this section I present, first, the data that I am using in the paper and where it comes from. Subsequently, I give a definition of the two income concepts that will be used as dependent variables in our regressions. Last, I will explain the definition of urban, intermediate and rural areas, that I use in the paper as our variable of interest.

3.1 Data

I use two data sources for this analysis. The first one is the Living Conditions Survey (ECV) which is an annual survey that contains data for around 13,000 households and 35,000 people in Spain. It is done by the Spanish National Statistical Institute (INE). It provides data to analyze the income distribution and social exclusion dimensions among others. The second data source is the Household Budget Survey (EPF) gives annual information on the nature and destination of consumption expenses on a range of features relating to household living conditions. Approximately, 24,000 households are interviewed by the Spanish National Statistical Institute. Both surveys are merged to have a unique database with detailed information on a variety of topics for each individual.

This paper constructs a point-in-time estimation. This is, both the ECV and EPF are from the year 2020, they do not include a time series. As a consequence, this analysis does not try to do a dynamic estimation for several years, but rather, a more exhaustive estimation for one specific year.

3.2 Definitions

The dependent variables in this paper are market income and final income both in per capita terms. The income concepts are defined and calculated in accordance to the CEQ methodology (Lustig, 2018). For our specific case of Spain, this variables have been previously calculated

and analyzed through this methodology (Gómez-Bengoechea & Quan, 2020). In order to calculate the two concepts, the ECV and the EPF are combined. Once this is done, I construct the two previous income per capita concepts for each individual by aggregating or subtracting concepts as shown in figure 3.

Figure 3
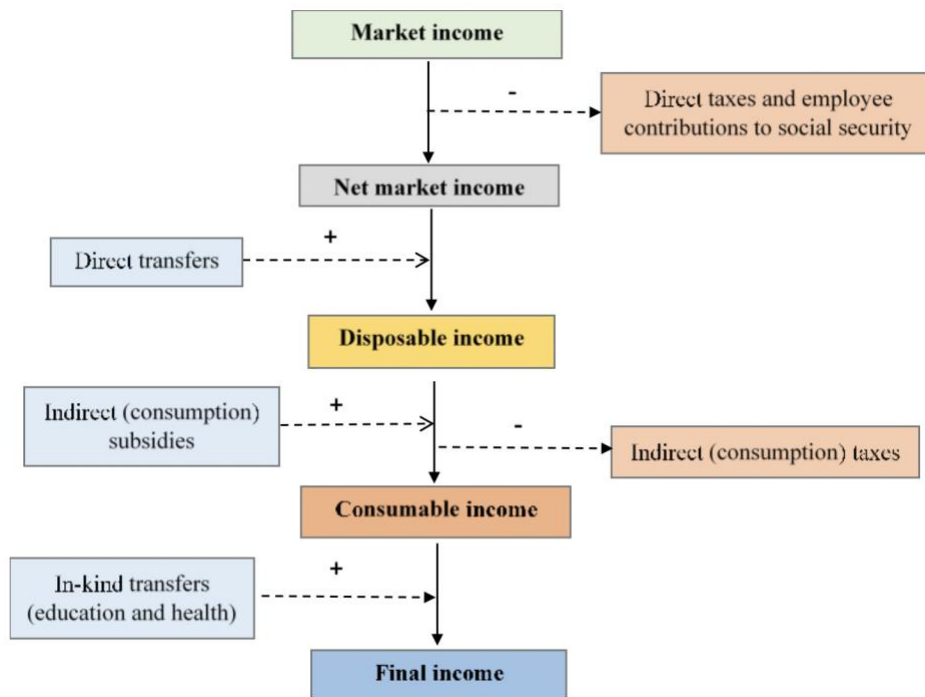
Source: (Lustig, 2018)

On the one hand, market income per capita is the amount of money earned by an individual before paying taxes and receiving transfers. This income concept could be split into wages, income from capital, private transfers and own production. On the other hand, final income per capita is the amount of money earned by an individual after paying taxes and receiving transfers. The taxes paid by the individual during the process of income redistribution that results in the transformation of one income into another can be divided between direct taxes (income taxes and social security contributions) and indirect taxes (VAT, excise taxes, etc.). The transfers or subsidies received by the individual in the income redistribution process can be direct (cash and near cash transfers), indirect (energy subsidies, food subsidies, etc.) or in-kind (monetary value of public education, public health services and other public services). Depending on the market income earned and the strength of the redistributive component of

the fiscal system, an individual could end up with a higher or lower final income compared to his market income.

The key variable of interest is individual-location's degree of urbanization. This variable would be divided between urban areas, intermediate areas and rural areas. Figure 4 shows the map of Spain divided in between three areas, indicating also regional borders. The degree of urbanization is based on the statistics for Local Administrative Units (LAUs) developed by the Eurostat. LAUs are the local administrative divisions that are immediately below the province in the raking (municipalities in the case of Spain).

Figure 4. Urban, intermediate and rural map of Spain
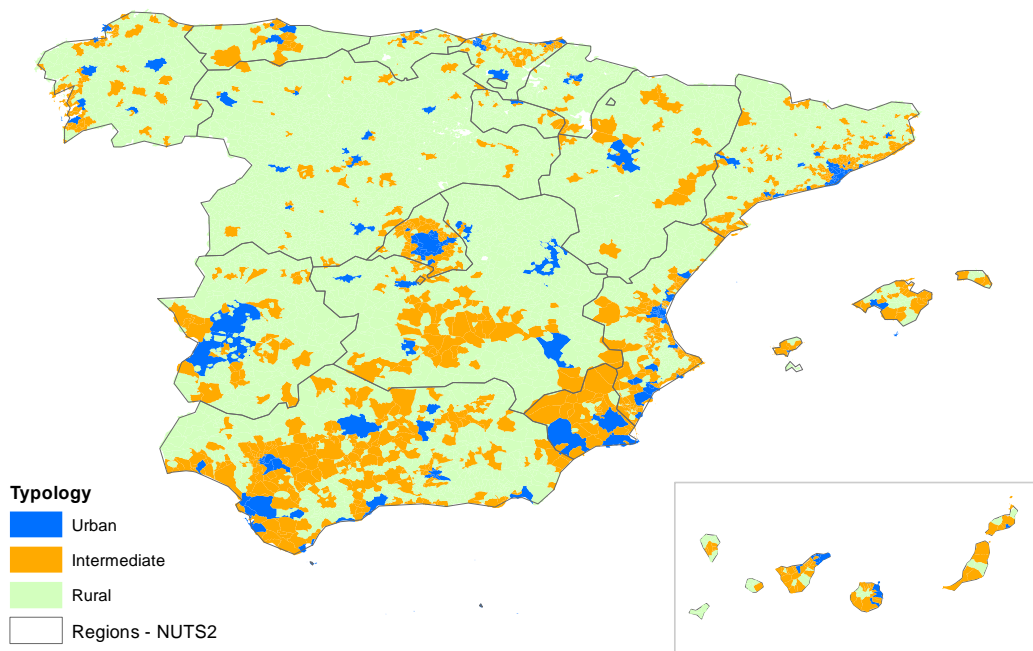
Source: Own elaboration with Eurostat data

The methodology followed for assigning a degree of urbanization for each LAU is, first, the division of the municipality in 1 km^2 grid cells. After that, the grid cells in that space are grouped and organized into three categories: urban centers, urban clusters, and rural grid cells. Urban centers are defined as a groups of non-diagonal contiguous grid cells of 1 km^2 that have more than 50.000 inhabitants in total and an overall density of at least 1500 inhabitants per km^2. Urban clusters are defined as a groups of diagonal contiguous grid cells of 1 km^2 that have more than 5.000 inhabitants in total and an overall density of at least 300 inhabitants per km^2.

Rural grid cells are all the grid cells in a municipality that they are not part of an urban center or cluster. Finally, having the territory of a LAU divided into different groups of grid cells, the whole LAU is defined as an urban, intermediate, or rural area. Urban areas correspond to municipalities with grid cells where at least 50% of the population lives in urban centers. Intermediate areas are municipalities where at least 50% of the population living in urban clusters. Rural areas consist on municipalities with grid cells that have at least 50% of the population living in rural grid cells.

3.3 Regressions

As a general regression for the model, I run an Ordinary Least Squares that is used as a baseline exercise for comparison. For the comparison by quantiles and, in the line of (Nguyen et al., 2007), I use the quantile regression estimation method to assess changes in individual's income due to different degrees of urbanization along the complete individual's income distribution. Moreover, I also run OLS regressions for each region in order to do regional comparisons. The benchmark Ordinary Least Squares regression for individual i is expressed in equation (1) as follows:

$$y_i = \alpha_i + \beta x_i + \delta u_i + \gamma s_i + \epsilon_i$$

$$(1)$$

Where y_i is either the log market income or log final income of individual i. In the right-hand side of the equation, α_i is the regression intercept for individual i, x_i are the control variables for individual i: age, gender, level of schooling, employment status, household size, and sector of activity, u_i is the variable that indicates if the individual i lives in an urban, intermediate or rural area, s_i is the spatial fixed effects controlling for regional unobservable characteristics for region of individual i, and ϵ_i is the residual for individual i. When the OLS regression is run by region, I eliminate from the equation variable s_i, since one regression is run for each of the regions that compose that variable. The rest of the equation is exactly the same.

The quantile specification for individual i is expressed in equation (2) as follows:

$$Q_\phi[y_i|x_i, u_i, s_i] = \alpha_i^\phi + \beta x_i^\phi + \delta u_i^\phi + \gamma s_i^\phi + \epsilon_i^\phi$$

$$(2)$$

Where $Q_{\emptyset}$ is the $\emptyset^{\text{th}}$ conditional quantile of y_i, and y_i is either the log market income or log final income of individual i. In the right-hand side of the equation, $\propto_i^{\emptyset}$ is the regression intercept for individual i at quantile $\emptyset$, $x_i^{\emptyset}$ are the control variables for individual i at quantile $\emptyset$: age, gender, level of schooling, employment status, household size, and sector of activity, $u_i^{\emptyset}$ is the variable that indicates if the individual i at quantile $\emptyset$ lives in an urban, intermediate or rural area, $s_i^{\emptyset}$ is the spatial fixed effects controlling for regional unobservable characteristics for region of individual i at quantile $\emptyset$, and $\in_i^{\emptyset}$ is the residual for individual i at quantile $\emptyset$.

Our coefficient of interest, δ, measures the urban-intermediate and urban-rural gap on income. Specifically, it measures the effect on income of living in an intermediate or rural area with respect to living in an urban area. Since variable u measures if the individual lives in an urban, intermediate or rural area, the model excludes when the individual lives in an urban area to avoid collinearity. This exclusion generates that the interpretation of coefficient δ is the effect of living in an intermediate or rural area, with respect to the excluded degree of urbanization variable (urban area in our case). That is what we can find in the results section that shows the urban-intermediate and the urban-rural gap results for every regression.

The age variable simply takes the numerical age of the individual. The gender variable takes value 1 if the individual is female and 0 otherwise. The level of schooling variable compares individuals that have secondary and tertiary education with those that have primary education. The variable for household size compares individuals that live alone with individuals in whose household they live two, three, four, or five or more individuals. The control for sector of activity compares working in the secondary, tertiary or public sectors with respect to working in the primary sector. The control variables are in line with the literature for the determinants of income per capita (Huber & Stephens, 2014).

Literature has documented that the age of an individual has a positive non-linear effect on personal income (Murphy & Welch, 1992). It is positive since the higher is individual's experience in the labor market, the higher is his/her salary. But is also non-linear since at the point of retirement there is a drop in personal income. At the same time, for people of the same age there is a wage gap explained by the level of education attained (Murphy & Welch, 1992). Furthermore, the so-called "gender gap" implies that women have lower personal incomes than men (O'Neill, 2003). Additionally, household size matters for personal income, since large

families have to maintain more children with the same salary (Atkinson, 1992). Also, the different sectors of activity offer very different wages even for people with similar characteristics (Kenessey, 1987). Part of the explanation deals in the different productivities of sectors of activity

In addition, spatial fixed effects for region are crucial in setting individuals' income. Regional variables have been used traditionally in economic geography literature. This has shown that across countries, the different regions in a country offer very different wages even for people with similar characteristics (Tirado et al., 2016). In the regression, a dummy for each Spanish region is introduced. To avoid collinearity in the model, one of the dummies should be excluded from the model. This would mean that the region variables would capture the income difference between each specific region and the excluded variable region. I our case we will exclude from the regression the variable for the region of Madrid. Thus, each region coefficient captures the difference on income between each one of the other sixteen Spanish regions and the region of Madrid. This baseline comparation has its justification in the fact that Madrid is the region with a higher market and final incomes per capita.

It is important to notice that without the region fixed effect, the urban-rural gap coefficient that we are studying would be larger since this regional variable is avoiding that unobservable regional characteristics end up biassing the urban-rural gap coefficient (and the rest of coefficients). This is, some regions are more urban than others in terms of their geographical area, but this effect is captured by the fixed effect and not by the urban-intermediate-rural variable. This fact makes our numerical calculus conservative in the sense that we expect the effect to be larger than what the regression reflects. But the fixed effect is at the same time necessary to understand that we are not biassing the regressions with regional components.

4. RESULTS

Having a clear overview of the data, definitions and regressions that are applied in this paper, in this section I show the results obtained and the interpretation that can be derived from them. The section is organized in three sections: First we have an empirical analysis, then we have the results from the quantile regression, and third we have the results from the OLS regressions by region.

4.1 Empirical Analysis

As we can observe in table 1, we have 10,578 observations for rural areas, 9,138 for intermediate areas and 18,293 for urban areas. Absolute variables are measured in euros. Patterns are replicated in the two income concepts analyzed; Individuals living in rural areas have on average a lower income and individuals living in urban areas have on average a higher income. With respect to the standard deviation, it is always higher in urban areas and lower in rural areas. Inequality (measured by the Gini coefficient) slightly differs from the pattern. It is higher in the urban areas and lower in the intermediate areas for market income, and very similar for rural and intermediate areas in final income (but both lower than the inequality in urban areas).

Table 1. Summary statistics of Market and Final incomes

Type of income	Degree of urbanization	Obs.	Mean	Std. Dev.	Gini Coef.
Market income	Rural	10,578	7.020,80	6.506,13	0.43
	Intermediate	9.138	8.811,97	7.278,10	0.41
	Urban	18.293	9.736,86	8.759,44	0.44
Final income	Rural	10,578	8.179,84	4.113.44	0.25
	Intermediate	9.138	8.972,99	4.703,53	0.25
	Urban	18.293	9.861,08	5.527,63	0.29

Market income is more unequal than final income taking into account the degree of urbanization. As market income is transformed into final income, inequality is reduced by 0.18 points for rural areas, by 0.16 for intermediate areas and by 0.15 for urban areas. This Gini coefficient reduction captures the size and effect of redistribution caused by the fiscal system. The percentage of individuals below the poverty line (60% of the median income) is of 17.08% in the urban areas, 17.50% for intermediate areas and 22.62% in the rural areas. This demonstrates a clear difference between areas, with a similar figure for urban and intermediate areas, but an increase of more than 5% from urban or intermediate to rural areas.

Apart from the territorial differences in terms of degree of urbanization, regional differences are well established in the literature of economic geography as determinants of income. If this two categories of regions and degree of urbanization are combined, we can observe interesting results. The figure in annex 5 shows the median market and final incomes for each region in urban, intermediate and rural areas. We can observe some regions that do not change a lot

across the maps (e.g. Andalucía), but we can also find substantial changes in other regions. For example, Castilla-La Mancha has a high median market income in urban areas that after the redistribution is becomes relatively lower. Aragón has quite the opposite trajectory. In terms of intermediate areas, Castilla y León, Galicia and Asturias increase relatively from market to final income. Rural income maps show less strong differences between market income and final income figures.

4.2 Quantile regression

Annex 1 shows the results using market income as dependent variable, and annex 2 shows the results having final income as dependent variable. The first column of each annex shows the OLS regression, while from the second onwards, columns show the quantile regressions for the 5th, 25th, 50th, 75th, and 95th quantiles. In general, all the variables are significant. In table 2, we can see a summary of our variable of interest (intermediate and rural area, with respect to urban area).

Table 2. Quantile estimation for different type of individuals' income

	(1) OLS	(2) 5th percentile	(3) 25th percentile	(4) 50th percentile	(5) 75th percentile	(6) 95th percentile
	Log market income pc	Log market income pc	Log market income pc	Log market income pc	Log market income pc	Log market income pc
Urban-intermediate gap	-0.0332**	-0.0235	-0.0282	-0.0338**	-0.0450***	-0.0925***
	(-2.75)	(-0.65)	(-1.82)	(-2.61)	(-3.58)	(-3.81)
Urban-rural gap	-0.0966***	-0.0602	-0.0850***	-0.113***	-0.131***	-0.132***
	(-7.60)	(-1.58)	(-5.22)	(-8.25)	(-9.89)	(-5.17)
	Log final income pc	Log final income pc	Log final income pc	Log final income pc	Log final income pc	Log final income pc
Urban-intermediate gap	-0.0438***	-0.0079	-0.0269**	-0.0457***	-0.0457***	-0.0908***
	(-5.96)	(-0.45)	(-2.95)	(-5.85)	(-4.89)	(-4.88)
Urban-rural gap	-0.0695***	-0.0305	-0.0505***	-0.0678***	-0.0828***	-0.0883***
	(-8.96)	(-1.66)	(-5.25)	(-8.23)	(-8.41)	(-4.50)

As observed in the table 2, living in an intermediate or rural area with respect to a urban area has a significative effect on market and final income, except for the lowest quantile. The poorest individuals earn the same in urban, intermediate or rural areas because there is a lower bound which is equal for everyone: unemployment benefits or basic income transfers. This

would explain why we don't observe an urban-rural gap for the 5th percentile (regression 2). However, for the quantiles above the 5th (regressions 3 to 6 in table 2), the urban-rural gap becomes stronger and significant (with the only exception of intermediate areas in regression 3).

On average, the market income of the individuals would be 3.32% lower in intermediate areas than in urban areas, and 9.66% in rural areas compared to urban areas. If we look at the final income, we see that the urban-intermediate gap increases to 4.38% and the urban-rural gap is reduced to 6.95%. Thus, the process of fiscal redistribution increases the urban-intermediate gap and reduces the urban-rural gap, being this last gap still larger.

The negative effect on income of living in a rural area is always greater than the one of intermediate areas, except for regression (12) in the annex where the effect is similar in intermediate and rural areas. This supports the hypothesis that the more urbanized a municipality is, the larger the individuals' income . On the other hand, the more rural a municipality is, the lower the income of individuals ceteris paribus. The urban-rural gap on income cannot be seen as the gap between two realities, but as a gap that affects a continuum of areas that are between the pure urban and the pure rural.

Figure 5. Gaps on market income (MI) and final income (FI) by quantile
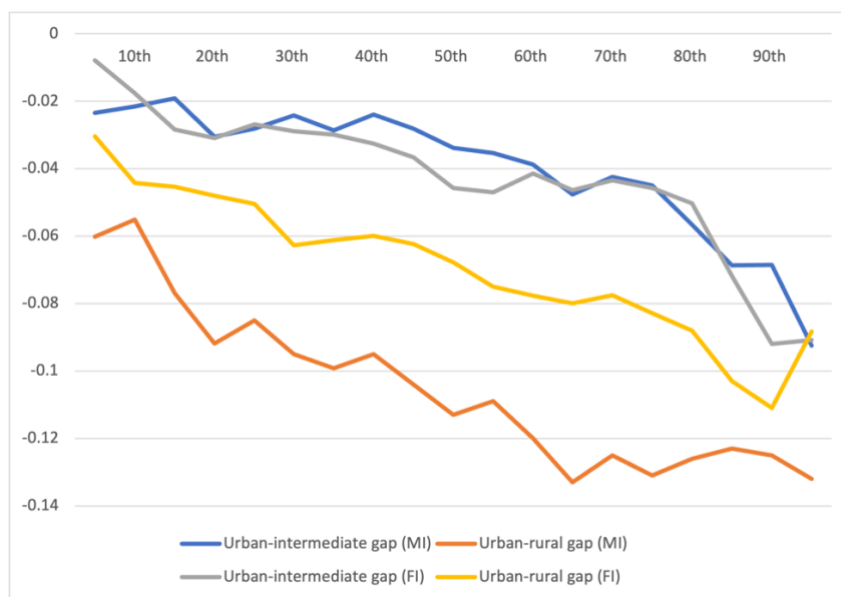
Source: Own elaboration

The effect of the gap that we are analyzing is in general greater, the higher the percentile. This applies to all the regressions regardless of the income's definition that I am using as dependent variable. We can conclude that the gap of our interest is larger for richer people. Thus, living in a rural (or intermediate) area would not be that harmful in terms of income for low income workers, while it would constitute a big penalty for those on the highest places of the income distribution.

As we can observe in figure 5, the urban-intermediate gap starts being of 2.35% for market income and of 0.79% for final income if we look at the 5th quantile. However, when we look at the 95th quantile of the income distribution we find that the gap is of 9.25% for market income and 9.08% for final income. The difference in gap between the poorer individuals and the richer ones is of around 7% for market income and 8.3% for final income. With respect to the urban-rural gap, it is of 6.02% for market income and of 3.05% for final income when we look at the 5th quantile of the distribution. Nevertheless, those individuals in the 95th quantile of income bear an urban-rural gap of 13.2% for market income and 8.83% for final income. This makes a difference between the urban-rural gap endured by the richest and by the poorest individuals of around 7.2% for market income and of 5.8% for final income.

The negative effect on income of living in a rural area with respect to an urban area is reduced when we change the dependent variable from market income to final income. We can conclude that the process of redistribution of the state through taxes and transfers has an effect in reducing the urban-rural gap. The reduction of the gap is also bigger, the greater the percentile. However, this is not the case for intermediate areas as it can be seen in figure 6. The redistribution process barely affects the urban-intermediate gap.

4.3 OLS regressions by region

Is the urban-rural gap on income homogeneous for the case of Spain? Or do we have regional disparities in the size of the gaps? To deepen into the analysis of gaps, it is also interesting to check if there are regional differences in the urban-intermediate and urban-rural gaps. This can be done by running OLS regressions for each region with the specification of equation 1 (except for the region variable, that now cannot be included). Annexes 3 and 4 contain the results for the seventeen OLS regressions (one for each region), for market income and final income

respectively. In table 3 we can observe the coefficients of our variable of interest for 10 out of the 17 regions. This selection includes all the regions that have important results to show.

Table 3. OLS regression results of the variable of interest by region*

	Andalucía	Aragón	Asturias	Balearic islands	Canary islands	Cantabria	Cataluña	Madrid	Castilla-La Mancha	Navarra
	Log market income	Log market income	Log market income	Log market income	Log market income	Log market income	Log market income	Log market income	Log market income	Log market income
Urban-intermediate gap	0.0270	-0.164*	-0.0859	0.154*	0.0138	0.0740	-0.0374	-0.0415	-0.227**	-0.140*
	(0.68)	(-2.44)	(-0.96)	(2.07)	(0.21)	(1.15)	(-1.39)	(-1.19)	(-3.03)	(-2.01)
Urban-rural gap	-0.183***	-0.140**	-0.0191	0.125	-0.0438	-0.172*	-0.00067	-0.145*	-0.264***	-0.0027
	(-5.05)	(-2.77)	(-0.25)	(1.89)	(-0.52)	(-2.15)	(-0.02)	(-2.30)	(-5.42)	(-0.04)
	Log final income	Log final income	Log final income	Log final income	Log final income	Log final income	Log final income	Log final income	Log final income	Log final income
Urban-intermediate gap	-0.0402	-0.109**	0.0576	0.0563	-0.0372	-0.0547	-0.0279	-0.0432	-0.181***	-0.0499
	(-1.61)	(-2.79)	(1.16)	(1.27)	(-0.95)	(-1.32)	(-1.75)	(-1.77)	(-4.23)	(-1.11)
Urban-rural gap	-0.082***	-0.096**	-0.0419	0.0324	-0.0597	-0.142**	-0.0332	-0.17***	-0.157***	0.0167
	(-3.62)	(-3.26)	(-0.97)	(0.82)	(-1.17)	(-2.76)	(-1.60)	(-3.91)	(-5.65)	(0.41)

*Selection of regions that are important for the explanation, the rest of the regions and variables can be consulted in annexes 3 and 4. For the sake of a clean page design, we cannot include the 17 columns for each region.

Having a close look at the regressions in table 3 we observe the enormous variability that we have between regions for the urban-intermediate and urban-rural gaps. For market income, we observe that four regions have a positive urban-intermediate gaps, meaning that in those regions the effect of living in an intermediate area is positive with respect to living in an urban area. The effect is especially high in the islands (both Canary and Balearic) being around 14-15%, but is also positive in Cantabria and Andalucía. However, in regions like Aragón or Castilla-La Mancha, the same gap has a negative effect on income of 16% and 23% respectively. If we look at the urban-rural gap for market income, we observe that the effect of this gap in Balearic Islands, Cataluña and Navarra is null, but at the same time in Cantabria and Andalucía we observe a negative effect of 17% and 18% on income respectively.

When we observe the results for final income we see that some results change, meaning that the process of redistribution through taxes and transfers reduces more the gaps in some regions than in others. After redistribution, the urban-intermediate gap is only positive in two regions: Balearic islands and Asturias. At the same time, the negative size of the effect on income

continues to be larger in Aragón and Castilla-La Mancha with 11% and 18% respectively (both they reduce the gap by around 5%).

With respect to the urban-rural gap for final income, we see positive gaps in the Balearic islands and in Navarra, being this two communities the only ones where living there in rural areas would be beneficial for the income of individuals with respect to those that live in urban areas. However, in Cantabria, Madrid and Castilla-La Mancha the effect is negative and greater than 14%. It may be easy to understand the case of Madrid, since the community may not have rural areas than are poorer than the average in Spain, but since the gap is a comparison with urban environments and the richest individuals in Spain are concentrated in Madrid, the gap is biased. In opposition, Cantabria and Castilla-La Mancha do not seem to have this bias and the gap is big because of having relatively rich individuals in urban areas and relatively poor individuals in rural areas.

Table 4. Matrix of urban-rural gap coefficient differences between regions (in %)*

	Andalucía	Aragón	Asturias	Balearic islands	Canary islands	Cantabria	Cataluña	Extremadura	Galicia	Castilla y León	Madrid	Castilla-La Mancha	Murcia	Navarra	La Rioja	Com. Valenciana	País Vasco
Andalucía		-4.3	-16.4	-30.8	-13.9	-1.1	-18.2	-0.8	-2.3	-11.3	-3.8	8.1	-6.4	-18.0	-17.6	-12.7	-14.5
Aragón			-12.1	-26.5	-9.6	3.2	-13.9	3.5	2.0	-7.0	0.5	12.4	-2.1	-13.7	-13.3	-8.4	-10.2
Asturias				-14.4	2.5	15.3	-1.8	15.6	14.1	5.1	12.6	24.5	10.0	-1.6	-1.2	3.7	1.9
Balearic islands					16.9	29.7	12.6	30.0	28.5	19.5	27.0	38.9	24.4	12.8	13.2	18.1	16.3
Canary islands						12.8	-4.3	13.1	11.6	2.7	10.1	22.0	7.5	-4.1	-3.7	1.2	-0.6
Cantabria							-17.1	0.3	-1.2	-10.2	-2.7	9.2	-5.3	-16.9	-16.5	-11.6	-13.4
Cataluña								17.4	15.9	7.0	14.4	26.3	11.8	0.2	0.6	5.5	3.7
Extremadura									-1.5	-10.5	-3.0	8.9	-5.6	-17.2	-16.8	-11.9	-13.7
Galicia										-9.0	-1.5	10.4	-4.1	-15.3	-10.4	-10.4	-12.2
Castilla y León											7.5	19.4	4.9	-6.8	-6.4	-1.5	-3.3
Madrid												11.9	-2.6	-14.2	-13.8	-8.9	-10.7
Castilla-La Mancha													-14.5	-26.1	-25.7	-20.8	-22.6
Murcia														-11.6	-11.2	-6.3	-8.1
Navarra															0.4	5.3	3.5
La Rioja																4.9	3.1
Com. Valenciana																	-1.8
País Vasco																	

*Calculations done for market income

Source: Own elaboration

In order to take a closer look to the urban-rural gap differences, table 4 shows the difference between the coefficients that reflect the urban-rural gap for the different regions. The coefficient for the urban-rural gap of the region with the name in the column of regions is subtracted to the coefficient for the urban-rural gap of the region in the row. In some cases, we see huge gap differences, like the one between the Balearic Islands and Castilla-La Mancha with 38.9% of the market income. Despite the fact that we can also observe some regions where the differences in gap are below 10%, a general view reflects that the urban-rural gap is very heterogeneous among regions in Spain.

We can conclude that within Spain we have a large heterogeneity in the size of the urban-rural gap on income. Although the urban-rural gap that we have analyzed through the paper exists and affects individual's income, their intensity differs a lot depending on the region. For example, we can compare the case of the Balearic islands with the case of Castilla-La Mancha. While the first one has positive and large urban-intermediate and urban-rural gaps both for market income and for final income, the later has negative urban-intermediate and urban-rural gaps that are over 22% for market income and over 15% for final income. This exemplifies that in regions like the Balearic islands, an individual would be benefited in terms of income by moving from an urban area to an intermediate or rural area, ceteris paribus. Quite the opposite, the burden in terms of income gap that individuals support in regions like Castilla-La Mancha generates huge territorial inequalities even within the same region.

5. CONCLUSION

This paper shows that it exists an urban-rural gap for income per capita in Spain, of around 10% for market income and 7% for final income. This means that after taking into account the personal characteristics that affect income per capita (i.e. age, gender, level of education, employment status, and sector of activity), the fact that an individual lives in a urban, intermediate or rural area has a significant effect on the income per capita that the individual finally earns (both before and after paying taxes and transfers). The effect remains even after controlling by other geographical variables like region of residence. Furthermore, the gap still exists, but it is reduced if we compare intermediate areas with urban areas.

The urban-rural gap is reduced thanks to the redistributive process. The gap is much larger before individuals pay taxes and receive benefits than after doing that. In that sense, we can say that the redistributive process is reducing in general the gaps, but that at the same time there is still a considerable gap after this process is overtaken. Thus, the redistributive process is important to close the gap, but still has room for being more ambitious in this reduction.

This urban-rural gap is larger, the higher it is the income quantile. As a consequence, rich individuals are more affected by this gap than poorer ones. Individuals in the 5th quantile of the income distribution do not show a significant urban-rural gap affecting their incomes. However, as soon as we look at quantiles over the 5th quantile of the distribution we start to see

an urban-rural gap that is significant and grows with income. For the 95th quantile, the urban-rural gap on market income is of 13.2%, more than 3 percentage points higher than the average.

However, it is also true that the urban-rural gap has a great heterogeneity between regions. With the exception of two regions that have a positive urban-rural gap, all the regions have a negative effect. But the negative size of the effect varies among regions from being almost null to supposing one fourth of an individual's market income or near to one fifth of the individual's final income. In this cases, the effect is huge and thus constitute a key element of income inequality between individuals.

As policy implications, this paper suggests that reducing the urban-rural gap is a key aspect in order to reduce income inequality in general. The redistributive process is working, but it can work better if the size of the redistribution increases (by increasing taxes and transfers), or if the transfers and/or tax reductions are targeted to those individuals living in rural areas. Thus, policies should include a territorial component that applies a positive discrimination to those living in rural areas. Furthermore, this policies would work better if they are region-specific. This is, depending on how big or small is the gap in a specific region, the state would have to adapt his fiscal effort to solve the problem.

This paper opens areas of future research on how the gaps analyzed affect to multiple other factors. An example would be how this gaps influence in the individual's decision to emigrate from rural to urban areas. Very connected to this, it can also be studied how this gaps can explain the problem of depopulation in some territories. Last, it opens the research area of productivity as way of explaining why incomes differ with the degree of urbanization.

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ANNEX 1

	(1) OLS Log market income	(2) 5th percentile Log market income	(3) 25th percentile Log market income	(4) 50th percentile Log market income	(5) 75th percentile Log market income	(6) 95th percentile Log market income
Age	0.00816*** (-17.36)	0.0111*** (-7.9)	0.00805*** (-13.35)	0.00755*** (-14.94)	0.00825*** (-16.86)	0.00801*** (-8.47)
Gender	-0.0351*** (-3.39)	-0.0474 (-1.53)	-0.0173 (-1.30)	-0.0406*** (-3.65)	-0.0406*** (-3.77)	-0.0557** (-2.68)
Urban-intermediate gap	-0.0332** (-2.75)	-0.0235 (-0.65)	-0.0282 (-1.82)	-0.0338** (-2.61)	-0.0450*** (-3.58)	-0.0925*** (-3.81)
Urban-rural gap	-0.0966*** (-7.60)	-0.0602 (-1.58)	-0.0850*** (-5.22)	-0.113*** (-8.25)	-0.131*** (-9.89)	-0.132*** (-5.17)
Secondary education	0.229*** (-10.57)	0.240*** (-3.69)	0.234*** (-8.43)	0.244*** (-10.51)	0.228*** (-10.09)	0.178*** (-4.08)
Tertiary education	0.574*** (-25.72)	0.617*** (-9.23)	0.562*** (-19.66)	0.580*** (-24.2)	0.577*** (-24.85)	0.541*** (-12.06)
Household size (2)	-0.225*** (-11.65)	-0.250*** (-4.32)	-0.300*** (-12.12)	-0.229*** (-11.06)	-0.221*** (-11.01)	-0.187*** (-4.82)

Household size (3)	-0.506***	-0.441***	-0.553***	-0.527***	-0.534***	-0.543***
	(-27.02)	(-7.85)	(-23.04)	(-26.21)	(-27.38)	(-14.42)
Household size (4)	-0.599***	-0.461***	-0.628***	-0.641***	-0.665***	-0.657***
	(-32.21)	(-8.27)	(-26.36)	(-32.10)	(-34.38)	(-17.59)
Household size (5)	-0.871***	-0.906***	-0.933***	-0.867***	-0.854***	-0.872***
	(-37.57)	(-13.04)	(-31.41)	(-34.84)	(-35.40)	(-18.70)
Part-time worker	-0.334***	-0.577***	-0.399***	-0.281***	-0.225***	-0.201***
	(-21.42)	(-12.35)	(-20.02)	(-16.81)	(-13.86)	(-6.42)
Full-time autonomus	-0.208***	-0.466***	-0.300***	-0.199***	-0.0802***	0.0875**
	(-14.39)	(-10.79)	(-16.23)	(-12.87)	(-5.34)	-3.01
Part-time autonomus	-0.368***	-0.854***	-0.523***	-0.271***	-0.201**	-0.036
	(-6.13)	(-4.74)	(-6.79)	(-4.21)	(-3.21)	(-0.30)
Secondary sector	0.191***	0.293***	0.246***	0.205***	0.196***	0.152**
	(-7.49)	(-3.84)	(-7.55)	(-7.5)	(-7.4)	(-2.97)
Tertiary sector	0.164***	0.213**	0.211***	0.175***	0.159***	0.172***
	(-6.66)	(-2.87)	(-6.67)	(-6.6)	(-6.19)	(-3.47)
Public administration	0.282***	0.378***	0.347***	0.302***	0.254***	0.228***
	(-10.78)	(-4.83)	(-10.36)	(-10.76)	(-9.32)	(-4.35)

Andalucía	-0.277***	-0.254***	-0.296***	-0.229***	-0.256***	-0.313***
	(-13.07)	(-4.00)	(-10.89)	(-10.08)	(-11.61)	(-7.35)
Aragón	-0.041	-0.00814	-0.0515	-0.0049	-0.0624*	-0.124*
	(-1.54)	(-0.10)	(-1.51)	(-0.17)	(-2.25)	(-2.31)
Asturias	-0.217***	-0.295**	-0.254***	-0.179***	-0.186***	-0.127
	(-6.68)	(-3.03)	(-6.09)	(-5.14)	(-5.49)	(-1.95)
Balearic islands	-0.0851**	-0.0572	-0.0885*	-0.0486	-0.0596	-0.116
	(-2.68)	(-0.60)	(-2.18)	(-1.43)	(-1.80)	(-1.82)
Canary islands	-0.286***	-0.565***	-0.264***	-0.220***	-0.252***	-0.345***
	(-9.15)	(-6.02)	(-6.58)	(-6.54)	(-7.75)	(-5.48)
Cantabria	-0.262***	-0.363***	-0.266***	-0.249***	-0.243***	-0.174**
	(-8.82)	(-4.08)	(-7.00)	(-7.82)	(-7.87)	(-2.92)
Cataluña	-0.0158	-0.0321	-0.0132	0.0195	-0.0129	-0.0373
	(-0.88)	(-0.60)	(-0.57)	-1.02	(-0.69)	(-1.04)
Extremadura	-0.423***	-0.592***	-0.421***	-0.364***	-0.368***	-0.499***
	(-14.54)	(-6.79)	(-11.29)	(-11.66)	(-12.14)	(-8.52)
Galicia	-0.179***	-0.163*	-0.159***	-0.141***	-0.204***	-0.257***
	(-7.38)	(-2.24)	(-5.10)	(-5.39)	(-8.05)	(-5.27)

Castilla y León	-0.151***	-0.146*	-0.109***	-0.119***	-0.157***	-0.219***
	(-6.40)	(-2.07)	(-3.62)	(-4.72)	(-6.40)	(-4.62)
Castilla-La Mancha	-0.201***	-0.273***	-0.175***	-0.174***	-0.216***	-0.261***
	(-7.49)	(-3.40)	(-5.09)	(-6.03)	(-7.74)	(-4.83)
Murcia	-0.246***	-0.301***	-0.253***	-0.205***	-0.243***	-0.242***
	(-8.55)	(-3.49)	(-6.86)	(-6.65)	(-8.12)	(-4.19)
Navarra	0.114***	0.232*	0.136**	0.131***	0.0405	-0.00537
	(-3.46)	(-2.34)	(-3.21)	(-3.71)	(-1.18)	(-0.08)
La Rioja	-0.0698*	-0.0219	-0.0363	-0.048	-0.110***	-0.180**
	(-2.37)	(-0.25)	(-0.96)	(-1.52)	(-3.58)	(-3.04)
Com. Valenciana	-0.200***	-0.173*	-0.160***	-0.179***	-0.210***	-0.281***
	(-8.63)	(-2.49)	(-5.37)	(-7.18)	(-8.69)	(-6.03)
País Vasco	-0.0333	0.037	0.0141	0.0171	-0.0576*	-0.129*
	(-1.25)	(-0.46)	(-0.41)	(-0.6)	(-2.08)	(-2.42)
Constant	8.965***	7.799***	8.659***	9.004***	9.348***	9.870***
	(-202.32)	(-58.73)	(-152.53)	(-189.25)	(-202.62)	(-110.77)
N	14248	14248	14248	14248	14248	14248

ANNEX 2

	(7) OLS	(8) 5th percentile	(9) 25th percentile	(10) 50th percentile	(11) 75th percentile	(12) 95th percentile
	Log final income	Log final income	Log final income	Log final income	Log final income	Log final income
Age	0.00434***	0.00579***	0.00444***	0.00415***	0.00368***	0.00322***
	(15.15)	(8.53)	(12.50)	(13.63)	(10.10)	(4.43)
Gender	0.00916	0.0546***	0.0227**	0.0120	0.000208	-0.0242
	(1.45)	(3.66)	(2.89)	(1.78)	(0.03)	(-1.51)
Urban-intermediate gap	-0.0438***	-0.00790	-0.0269**	-0.0457***	-0.0457***	-0.0908***
	(-5.96)	(-0.45)	(-2.95)	(-5.85)	(-4.89)	(-4.88)
Urban-rural gap	-0.0695***	-0.0305	-0.0505***	-0.0678***	-0.0828***	-0.0883***
	(-8.96)	(-1.66)	(-5.25)	(-8.23)	(-8.41)	(-4.50)
Secondary education	0.0978***	0.127***	0.0996***	0.0854***	0.0697***	0.102**
	(7.42)	(4.07)	(6.09)	(6.09)	(4.16)	(3.06)
Tertiary education	0.293***	0.290***	0.275***	0.270***	0.267***	0.349***
	(21.58)	(9.02)	(16.31)	(18.71)	(15.46)	(10.14)
Household size (2)	-0.210***	-0.391***	-0.237***	-0.202***	-0.175***	-0.184***
	(-17.91)	(-14.07)	(-16.26)	(-16.21)	(-11.77)	(-6.20)
Household size (3)	-0.378***	-0.416***	-0.437***	-0.385***	-0.366***	-0.353***
	(-33.22)	(-15.43)	(-30.92)	(-31.76)	(-25.31)	(-12.25)

Household size (4)	-0.473***	-0.448***	-0.508***	-0.491***	-0.466***	-0.519***
	(-41.84)	(-16.75)	(-36.21)	(-40.88)	(-32.50)	(-18.14)
Household size (5)	-0.496***	-0.462***	-0.533***	-0.505***	-0.490***	-0.536***
	(-35.16)	(-13.83)	(-30.48)	(-33.69)	(-27.37)	(-15.02)
Part-time worker	-0.146***	-0.161***	-0.146***	-0.136***	-0.147***	-0.0904***
	(-15.36)	(-7.16)	(-12.36)	(-13.49)	(-12.19)	(-3.76)
Full-time autonomus	-0.0455***	-0.102***	-0.0660***	-0.0448***	-0.0157	0.0206
	(-5.18)	(-4.92)	(-6.05)	(-4.80)	(-1.41)	(0.93)
Part-time autonomus	-0.110**	-0.333***	-0.160***	-0.0887*	-0.0531	0.0250
	(-3.01)	(-3.84)	(-3.52)	(-2.28)	(-1.14)	(0.27)
Secondary sector	0.131***	0.190***	0.152***	0.136***	0.113***	0.0928*
	(8.44)	(5.17)	(7.92)	(8.24)	(5.75)	(2.36)
Tertiary sector	0.130***	0.146***	0.147***	0.127***	0.123***	0.114**
	(8.64)	(4.09)	(7.88)	(7.94)	(6.45)	(2.98)
Public sector	0.212***	0.236***	0.240***	0.216***	0.202***	0.174***
	(13.31)	(6.26)	(12.14)	(12.72)	(9.97)	(4.32)
Andalucía	-0.194***	-0.0996**	-0.136***	-0.175***	-0.221***	-0.332***
	(-15.05)	(-3.26)	(-8.47)	(-12.73)	(-13.49)	(-10.17)

Aragón	0.0204	0.143***	0.0862***	0.0472**	-0.0101	-0.204***
	(1.25)	(3.71)	(4.27)	(2.73)	(-0.49)	(-4.95)
Asturias	-0.0808***	-0.0280	-0.0163	-0.0474*	-0.0885***	-0.247***
	(-4.08)	(-0.60)	(-0.66)	(-2.25)	(-3.52)	(-4.94)
Balearic islands	0.00697	0.0746	0.0425	0.00786	-0.0317	-0.119*
	(0.36)	(1.63)	(1.77)	(0.38)	(-1.29)	(-2.43)
Canary islands	-0.136***	-0.111*	-0.0451	-0.112***	-0.160***	-0.319***
	(-7.10)	(-2.45)	(-1.90)	(-5.54)	(-6.60)	(-6.60)
Cantabria	-0.0341	0.00811	0.0159	-0.0430*	-0.0387	-0.130**
	(-1.89)	(0.19)	(0.71)	(-2.24)	(-1.68)	(-2.84)
Cataluña	-0.0190	0.0403	0.0464***	-0.000621	-0.0475***	-0.170***
	(-1.74)	(1.56)	(3.42)	(-0.05)	(-3.43)	(-6.15)
Extremadura	-0.146***	-0.0165	-0.0489*	-0.104***	-0.186***	-0.466***
	(-8.19)	(-0.39)	(-2.22)	(-5.53)	(-8.27)	(-10.36)
Galicia	0.0481**	0.138***	0.110***	0.0697***	0.00598	-0.144***
	(3.25)	(3.95)	(5.99)	(4.42)	(0.32)	(-3.85)
Castilla y León	-0.0424**	0.0547	0.0306	-0.0248	-0.0713***	-0.211***
	(-2.95)	(1.61)	(1.72)	(-1.63)	(-3.91)	(-5.81)

Castilla-La Mancha	-0.0938***	-0.0237	-0.0177	-0.0669***	-0.124***	-0.311***
	(-5.74)	(-0.61)	(-0.87)	(-3.85)	(-5.97)	(-7.52)
Murcia	-0.117***	0.0304	-0.0299	-0.108***	-0.162***	-0.338***
	(-6.66)	(0.73)	(-1.38)	(-5.77)	(-7.28)	(-7.61)
Navarra	-0.0317	0.0633	0.0581*	-0.00936	-0.0640*	-0.241***
	(-1.57)	(1.33)	(2.33)	(-0.44)	(-2.51)	(-4.73)
La Rioja	-0.150***	-0.124**	-0.115***	-0.125***	-0.180***	-0.317***
	(-8.36)	(-2.91)	(-5.18)	(-6.56)	(-7.91)	(-6.98)
Com. Valenciana	-0.0887***	0.0106	-0.0255	-0.0610***	-0.114***	-0.308***
	(-6.27)	(0.32)	(-1.45)	(-4.06)	(-6.34)	(-8.59)
País Vasco	-0.0625***	0.0435	-0.00103	-0.0352*	-0.0746***	-0.261***
	(-3.85)	(1.13)	(-0.05)	(-2.04)	(-3.62)	(-6.35)
Constant	9.019***	8.299***	8.758***	9.027***	9.303***	9.818***
	(334.14)	(129.97)	(261.59)	(314.54)	(271.43)	(143.70)
N	14265	14265	14265	14265	14265	14265

ANNEX 3

	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
	Andalucía	Aragón	Asturias	Balearic islands	Canary islands	Cantabria	Cataluña	Extremadura	Galicia	Castilla y León	Madrid	Castilla-La Mancha	Murcia	Navarra	La Rioja	Com. Valenciana	País Vasco
	Log market income	Log market income	Log market income	Log market income	Log market income	Log market income	Log market income	Log market income	Log market income	Log market income	Log market income	Log market income	Log market income	Log market income	Log market income	Log market income	Log market income
Age	0.00882***	0.00529*	0.0145***	0.00449	0.0133***	0.00959***	0.00809***	0.0148***	0.0104***	0.00608***	0.00695***	0.00635**	0.00672**	0.0121***	0.00802***	0.00544**	0.00740**
	(5.94)	(2.47)	(4.15)	(1.59)	(4.88)	(3.62)	(7.27)	(6.02)	(5.24)	(3.57)	(5.14)	(3.06)	(2.64)	(4.94)	(3.39)	(3.19)	(3.16)
Gender	-0.00470	0.0615	-0.0975	-0.00407	-0.0577	-0.0876	-0.0501*	-0.0761	-0.0364	-0.0211	-0.0106	-0.0586	-0.0327	-0.0733	0.0326	-0.0669	-0.0713
	(-0.14)	(1.31)	(-1.39)	(-0.07)	(-0.93)	(-1.54)	(-2.08)	(-1.30)	(-0.91)	(-0.53)	(-0.36)	(-1.26)	(-0.60)	(-1.31)	(0.61)	(-1.77)	(-1.48)
Urban-intermediate gap	0.0270	-0.164*	-0.0859	0.154*	0.0138	0.0740	-0.0374	-0.148	-0.0352	-0.0600	-0.0415	-0.227**	-0.00101	-0.140*	-0.0242	-0.0758	-0.0216
	(0.68)	(-2.44)	(-0.96)	(2.07)	(0.21)	(1.15)	(-1.39)	(-1.52)	(-0.69)	(-1.28)	(-1.19)	(-3.03)	(-0.02)	(-2.01)	(-0.39)	(-1.90)	(-0.46)
Urban-rural gap	-0.183***	-0.140**	-0.0191	0.125	-0.0438	-0.172*	-0.000667	-0.175**	-0.160***	-0.0704	-0.145*	-0.264***	-0.119	-0.00271	-0.00689	-0.0556	-0.0376
	(-5.05)	(-2.77)	(-0.25)	(1.89)	(-0.52)	(-2.15)	(-0.02)	(-2.83)	(-3.63)	(-1.61)	(-2.30)	(-5.42)	(-1.93)	(-0.04)	(-0.11)	(-1.13)	(-0.46)
Secondary education	0.202***	0.199	-0.0742	0.138	0.00806	0.0567	0.272***	0.289**	0.161*	0.332***	0.259**	0.272**	0.147	0.391***	0.146	0.419***	0.170
	(3.70)	(1.71)	(-0.36)	(1.16)	(0.05)	(0.34)	(5.28)	(2.87)	(2.36)	(4.02)	(3.06)	(2.90)	(1.48)	(3.35)	(1.38)	(5.08)	(1.19)
Tertiary education	0.542***	0.512***	0.403*	0.370**	0.338*	0.448**	0.607***	0.678***	0.396***	0.702***	0.734***	0.492***	0.409***	0.759***	0.427***	0.700***	0.439**
	(9.27)	(4.26)	(1.97)	(2.91)	(2.09)	(2.60)	(11.69)	(6.36)	(5.45)	(8.26)	(8.69)	(4.89)	(3.74)	(6.46)	(3.91)	(8.25)	(3.10)
Household size (2)	-0.364***	-0.147	-0.286*	-0.0390	-0.298**	0.0196	-0.126**	-0.460***	-0.0976	-0.326***	-0.269***	-0.299***	-0.164	-0.134	-0.194*	-0.248***	-0.292***
	(-5.63)	(-1.62)	(-2.47)	(-0.32)	(-2.60)	(0.17)	(-2.75)	(-4.37)	(-1.16)	(-4.82)	(-4.95)	(-3.32)	(-1.46)	(-1.23)	(-2.30)	(-3.40)	(-3.64)
Household size (3)	-0.594***	-0.456***	-0.567***	-0.512***	-0.470***	-0.376***	-0.410***	-0.723***	-0.413***	-0.555***	-0.539***	-0.606***	-0.557***	-0.392***	-0.489***	-0.519***	-0.511***
	(-9.61)	(-5.41)	(-4.79)	(-4.10)	(-4.07)	(-3.39)	(-9.21)	(-7.08)	(-5.04)	(-8.46)	(-10.26)	(-6.96)	(-5.32)	(-3.65)	(-5.83)	(-7.37)	(-6.58)
Household size (4)	-0.721***	-0.652***	-0.567***	-0.594***	-0.483***	-0.491***	-0.501***	-0.840***	-0.515***	-0.686***	-0.596***	-0.584***	-0.697***	-0.562***	-0.497***	-0.614***	-0.558***
	(-11.84)	(-7.77)	(-4.65)	(-5.08)	(-4.23)	(-4.47)	(-11.30)	(-8.22)	(-6.20)	(-10.31)	(-11.49)	(-6.77)	(-6.79)	(-5.39)	(-6.00)	(-8.67)	(-7.49)
Household size (5)	-0.940***	-0.912***	-0.810***	-0.566***	-0.814***	-0.744***	-0.888***	-1.053***	-0.842***	-0.927***	-0.925***	-0.778***	-0.808***	-0.821***	-0.830***	-1.072***	-0.622***
	(-12.87)	(-8.54)	(-5.02)	(-4.05)	(-5.49)	(-4.93)	(-15.35)	(-8.02)	(-9.05)	(-10.27)	(-14.70)	(-7.50)	(-7.11)	(-7.13)	(-6.50)	(-11.50)	(-6.35)
Part-time worker	-0.296***	-0.364***	-0.561***	-0.214*	-0.350***	-0.341***	-0.377***	-0.294**	-0.266***	-0.409***	-0.338***	-0.312***	-0.307***	-0.0181	-0.337***	-0.287***	-0.367***
	(-5.85)	(-4.94)	(-4.87)	(-2.04)	(-4.24)	(-3.95)	(-10.18)	(-2.98)	(-4.30)	(-7.14)	(-7.47)	(-4.50)	(-3.62)	(-0.22)	(-4.52)	(-5.27)	(-5.47)
Full-time autonomus	-0.262***	-0.0164	-0.132	-0.511***	-0.0483	-0.192*	-0.226***	-0.140	-0.180***	-0.377***	-0.227***	-0.102	-0.0901	-0.0210	-0.0863	-0.253***	-0.175**
	(-6.04)	(-0.26)	(-1.43)	(-6.14)	(-0.47)	(-2.22)	(-6.32)	(-1.85)	(-3.49)	(-7.01)	(-4.69)	(-1.70)	(-1.14)	(-0.29)	(-1.19)	(-4.96)	(-2.62)
Part-time autonomus	-0.0243	-0.936	-1.935***	-0.220	-0.554	-0.473	-0.415***	0.343	-0.798*	-0.0456	-0.752***	0.0217	-0.448	-0.358	-0.262	0.328	0.0634
	(-0.14)	(-1.70)	(-4.16)	(-0.85)	(-1.87)	(-1.13)	(-3.56)	(1.01)	(-2.48)	(-0.16)	(-4.17)	(0.06)	(-1.71)	(-1.82)	(-0.68)	(1.02)	(0.20)
Secondary sector	0.227***	0.139	0.0850	0.125	-0.0377	0.557***	0.204*	0.219*	0.362***	0.115	0.00453	0.0805	0.0444	0.0515	0.426***	0.179	0.384
	(3.63)	(1.39)	(0.46)	(0.42)	(-0.20)	(3.65)	(2.13)	(2.33)	(3.87)	(1.40)	(0.02)	(0.91)	(0.43)	(0.33)	(3.60)	(1.88)	(1.87)
Tertiary sector	0.233***	0.0419	0.0829	0.333	0.107	0.511***	0.188*	0.0904	0.375***	0.0629	-0.0482	0.0705	0.104	-0.0274	0.386**	0.109	0.341
	(4.01)	(0.43)	(0.49)	(1.15)	(0.61)	(3.46)	(1.99)	(1.03)	(4.12)	(0.81)	(-0.24)	(0.83)	(1.08)	(-0.18)	(3.27)	(1.17)	(1.67)
Public sector	0.369***	0.0827	0.0858	0.460	0.297	0.647***	0.292**	0.259**	0.381***	0.224**	-0.0393	0.302**	0.386***	0.0549	0.502***	0.329***	0.490*
	(5.71)	(0.76)	(0.48)	(1.56)	(1.63)	(4.21)	(3.01)	(2.69)	(3.91)	(2.65)	(-0.19)	(3.24)	(3.49)	(0.34)	(3.95)	(3.33)	(2.36)
_cons	8.730***	9.159***	8.847***	8.846***	8.674***	8.284***	8.821***	8.471***	8.563***	8.972***	9.169***	9.044***	8.934***	8.784***	8.670***	8.803***	8.869***
	(77.28)	(47.50)	(26.59)	(24.35)	(32.55)	(30.92)	(71.08)	(42.60)	(49.43)	(57.08)	(39.06)	(52.62)	(45.00)	(36.50)	(42.24)	(53.73)	(31.90)
N	1401	652	383	411	419	493	2730	549	882	964	1628	674	531	378	500	1005	648

ANNEX 4

	(30) Andalucía	(31) Aragón	(32) Asturias	(33) Balearic islands	(34) Canary islands	(35) Cantabria	(36) Cataluña	(37) Extremadura	(38) Galicia	(39) Castilla y León	(40) Madrid	(41) Castilla-La Mancha	(42) Murcia	(43) Navarra	(44) La Rioja	(45) Com. Valenciana	(46) País Vasco
	Log final income	Log final income	Log final income	Log final income	Log final income	Log final income	Log final income	Log final income	Log final income	Log final income	Log final income	Log final income	Log final income	Log final income	Log final income	Log final income	Log final income
Age	0.00704***	0.000977	0.00941***	-0.000461	0.00645***	0.00370*	0.00415***	0.00728***	0.00670***	0.00417***	0.00299**	0.00116	0.00336**	0.00632***	0.00322*	0.00375***	0.00361**
	(7.57)	(0.79)	(4.85)	(-0.27)	(3.91)	(2.17)	(6.31)	(5.97)	(5.39)	(4.08)	(3.15)	(0.98)	(2.66)	(3.98)	(1.98)	(3.88)	(2.59)
Gender	0.0115	0.0539*	-0.000803	0.0408	0.0634	-0.0574	-0.0139	-0.0177	0.00871	0.00364	0.0301	0.00917	0.0235	-0.0349	0.00796	0.0162	0.0395
	(0.56)	(1.97)	(-0.02)	(1.16)	(1.68)	(-1.57)	(-0.98)	(-0.61)	(0.35)	(0.15)	(1.44)	(0.35)	(0.87)	(-0.96)	(0.22)	(0.75)	(1.37)
Urban-intermediate gap	-0.0402	-0.109**	0.0576	0.0563	-0.0372	-0.0547	-0.0279	-0.0630	-0.0636*	-0.0424	-0.0432	-0.181***	-0.0294	-0.0499	-0.0510	-0.0515*	-0.0429
	(-1.61)	(-2.79)	(1.16)	(1.27)	(-0.95)	(-1.32)	(-1.75)	(-1.30)	(-2.00)	(-1.51)	(-1.77)	(-4.23)	(-0.91)	(-1.11)	(-1.19)	(-2.27)	(-1.53)
Urban-rural gap	-0.0819***	-0.0961**	-0.0419	0.0324	-0.0597	-0.142**	-0.0332	-0.0804**	-0.121***	-0.0309	-0.174***	-0.157***	-0.0963**	0.0167	-0.0313	-0.0697*	-0.0448
	(-3.62)	(-3.26)	(-0.97)	(0.82)	(-1.17)	(-2.76)	(-1.60)	(-2.62)	(-4.39)	(-1.18)	(-3.91)	(-5.65)	(-3.13)	(0.41)	(-0.75)	(-2.50)	(-0.91)
Secondary education	0.0976**	0.0666	0.0771	0.0531	0.0506	-0.0968	0.153***	0.224***	0.0191	0.0929	0.154**	0.161**	0.0490	-0.0402	0.118	0.0878	0.127
	(2.85)	(0.99)	(0.70)	(0.75)	(0.53)	(-0.89)	(5.04)	(4.47)	(0.45)	(1.87)	(2.61)	(3.02)	(0.99)	(-0.53)	(1.62)	(1.87)	(1.53)
Tertiary education	0.295***	0.209**	0.308**	0.169*	0.201*	0.0922	0.342***	0.372***	0.219***	0.275***	0.467***	0.281***	0.157**	0.191*	0.291***	0.261***	0.265**
	(8.05)	(2.99)	(2.83)	(2.23)	(2.05)	(0.83)	(11.14)	(7.03)	(4.80)	(5.39)	(7.95)	(4.90)	(2.87)	(2.51)	(3.87)	(5.41)	(3.20)
Household size (2)	-0.199***	-0.221***	-0.350***	-0.132	-0.345***	-0.152*	-0.185***	-0.390***	-0.106*	-0.275***	-0.176***	-0.248***	-0.193***	-0.421***	-0.184**	-0.231***	-0.123*
	(-4.93)	(-4.20)	(-5.45)	(-1.83)	(-4.95)	(-2.10)	(-6.87)	(-7.46)	(-2.01)	(-6.80)	(-4.61)	(-4.88)	(-3.46)	(-6.03)	(-3.15)	(-5.58)	(-2.56)
Household size (3)	-0.259***	-0.354***	-0.545***	-0.359***	-0.458***	-0.366***	-0.372***	-0.518***	-0.330***	-0.408***	-0.381***	-0.517***	-0.392***	-0.572***	-0.340***	-0.407***	-0.193***
	(-6.73)	(-7.23)	(-8.27)	(-4.82)	(-6.52)	(-5.24)	(-14.19)	(-10.20)	(-6.46)	(-10.40)	(-10.35)	(-10.51)	(-7.54)	(-8.32)	(-5.89)	(-10.19)	(-4.16)
Household size (4)	-0.347***	-0.451***	-0.559***	-0.466***	-0.535***	-0.483***	-0.530***	-0.614***	-0.307***	-0.475***	-0.526***	-0.491***	-0.479***	-0.605***	-0.474***	-0.489***	-0.283***
	(-9.16)	(-9.26)	(-8.23)	(-6.69)	(-7.72)	(-6.97)	(-20.31)	(-12.09)	(-5.92)	(-11.93)	(-14.47)	(-10.06)	(-9.38)	(-9.04)	(-8.31)	(-12.19)	(-6.36)
Household size (5)	-0.289***	-0.419***	-0.415***	-0.392***	-0.538***	-0.343***	-0.638***	-0.700***	-0.387***	-0.482***	-0.540***	-0.538***	-0.459***	-0.627***	-0.649***	-0.607***	-0.271***
	(-6.35)	(-6.76)	(-4.62)	(-4.70)	(-5.98)	(-3.57)	(-18.69)	(-10.72)	(-6.65)	(-8.91)	(-12.23)	(-9.13)	(-8.13)	(-8.48)	(-7.39)	(-11.53)	(-4.65)
Part-time worker	-0.114***	-0.213***	-0.168**	-0.143*	-0.176***	-0.103	-0.121***	-0.0105	-0.0917*	-0.197***	-0.178***	-0.176***	-0.111**	-0.00732	-0.160**	-0.147***	-0.176***
	(-3.60)	(-4.98)	(-2.61)	(-2.31)	(-3.52)	(-1.85)	(-5.55)	(-0.21)	(-2.38)	(-5.74)	(-5.62)	(-4.45)	(-2.63)	(-0.14)	(-3.13)	(-4.74)	(-4.39)
Full-time autonomus	-0.0948***	-0.0409	0.0445	-0.0919	0.0594	-0.0488	-0.0561**	0.0359	-0.0401	-0.127***	-0.0656	-0.0108	-0.00557	0.0143	0.0543	-0.0255	-0.0251
	(-3.49)	(-1.10)	(0.87)	(-1.85)	(0.96)	(-0.87)	(-2.66)	(0.95)	(-1.25)	(-3.94)	(-1.93)	(-0.32)	(-0.14)	(0.30)	(1.09)	(-0.88)	(-0.63)
Part-time autonomus	0.0626	-0.576	-0.836**	-0.177	-0.201	-0.134	-0.158*	0.0489	-0.369	-0.0420	-0.0708	-0.124	0.0757	-0.165	0.00698	0.205	0.0533
	(0.56)	(-1.80)	(-3.23)	(-1.14)	(-1.12)	(-0.50)	(-2.29)	(0.29)	(-1.83)	(-0.25)	(-0.56)	(-0.56)	(0.58)	(-1.29)	(0.03)	(1.12)	(0.27)
Secondary sector	0.150***	0.0538	-0.143	0.433*	0.203	0.312**	0.164**	0.129**	0.115	0.103*	-0.105	0.149**	0.137**	0.216*	0.228**	0.127*	0.200
	(3.81)	(0.93)	(-1.40)	(2.45)	(1.79)	(3.17)	(2.90)	(2.76)	(1.96)	(2.10)	(-0.74)	(2.96)	(2.70)	(2.14)	(2.80)	(2.36)	(1.63)
Tertiary sector	0.165***	0.0656	-0.105	0.566**	0.265*	0.305**	0.190***	0.0804	0.102	0.0762	-0.183	0.154**	0.118*	0.195	0.199*	0.116*	0.181
	(4.54)	(1.16)	(-1.11)	(3.27)	(2.48)	(3.20)	(3.38)	(1.84)	(1.80)	(1.63)	(-1.30)	(3.17)	(2.47)	(1.96)	(2.45)	(2.19)	(1.48)
Public sector	0.280***	0.133*	-0.0543	0.654***	0.364**	0.393***	0.232***	0.230***	0.148*	0.202***	-0.166	0.302***	0.262***	0.278**	0.332***	0.254***	0.290*
	(6.91)	(2.09)	(-0.55)	(3.71)	(3.28)	(3.97)	(4.04)	(4.81)	(2.44)	(3.98)	(-1.16)	(5.68)	(4.77)	(2.66)	(3.79)	(4.54)	(2.33)
_cons	8.572***	9.298***	9.016***	8.791***	8.773***	9.062***	8.939***	8.794***	8.984***	9.060***	9.289***	9.117***	9.000***	9.051***	8.793***	8.997***	8.769***
	(121.52)	(83.08)	(49.22)	(40.54)	(54.19)	(52.58)	(121.94)	(88.94)	(82.94)	(96.08)	(56.44)	(92.99)	(91.12)	(58.11)	(62.23)	(96.78)	(53.10)
N	1403	652	385	412	419	495	2733	549	882	965	1630	675	531	379	500	1006	649

32

ANNEX 5. MEDIAN INCOME BY REGION IN URBAN, INTERMEDIATE AND RURAL AREAS*
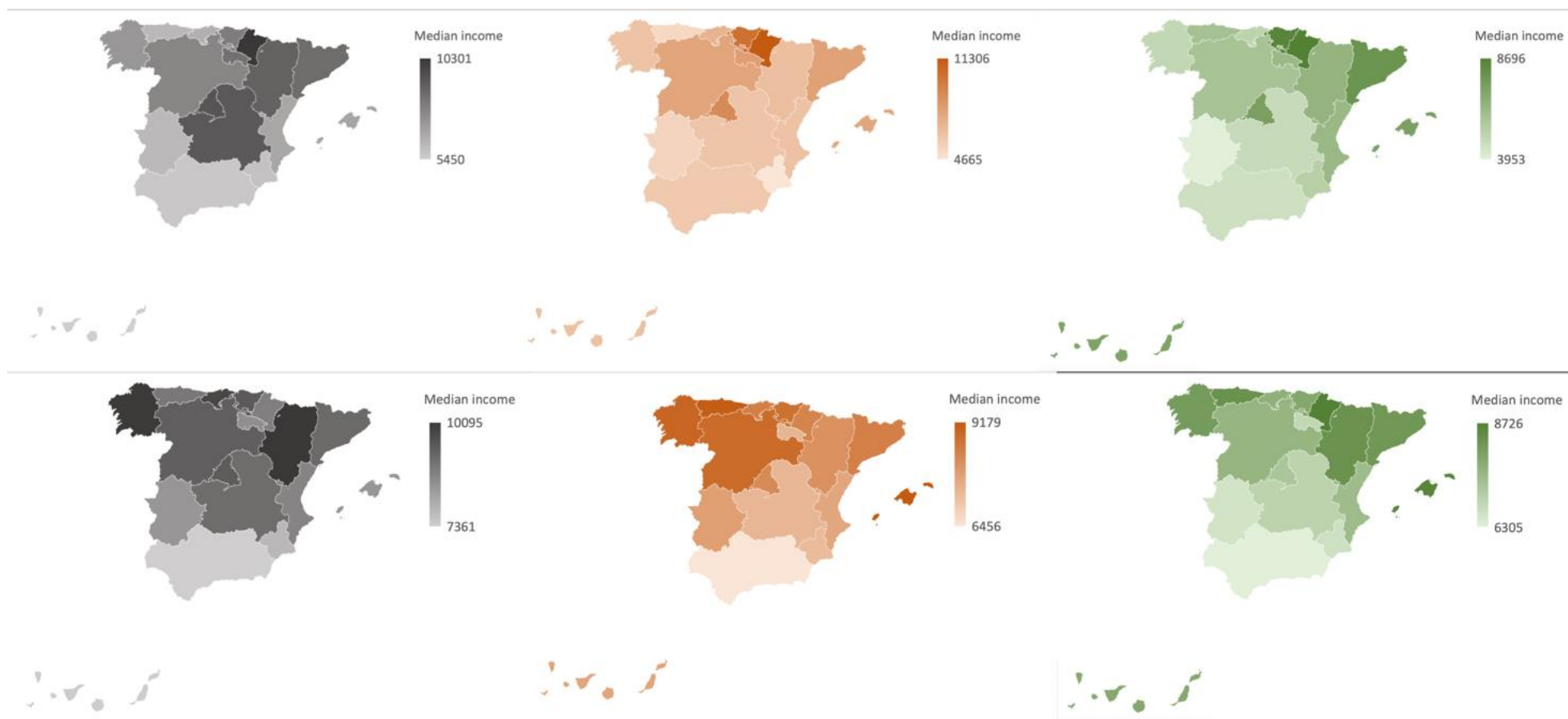
*The three maps above show the values for market income and the three maps below for final income. Black maps show urban areas, orange maps show intermediate areas and green maps show rural areas.

Source: Own elaboration