

25 July 2023

INCOME STATISTICS AT THE LOCAL LEVEL

Reported income on Personal Income Tax (IRS) indicators

2021

### 3/4 OF MUNICIPALITIES DECREASED THE INEQUALITY IN INCOME DISTRIBUTION BETWEEN 2020 AND 2021

In 2021, the median value of gross reported income less personal income tax paid per taxable person was 10 128 € in Portugal. 69 municipalities presented median income values higher than the national reference. The municipalities with median values above 12 000 € were Oeiras (14 552 €), Lisboa (13 378 €), Cascais (12 296 €), Alcochete (12 239 €) and Coimbra (12 055 €).

In 2021, the median value of gross reported income less personal income tax paid per taxable person increased +4.8% compared to the last year (+1.3% in 2020). All municipalities increased the median value of income per taxable person and more than 35% of municipalities grew above the country. Between 2020 and 2021 there was an increase in the annual rate of change of the median income value in 83% of the municipalities. In 58 municipalities the acceleration of income was equal to or greater than that observed in the country (+3.5 percentage points). Albufeira presented the greatest increase (+8.4 p.p.) between the rate of change of 2020 and 2021.

In 2021, the Gini coefficient of the gross reported income less personal income tax paid per taxable person was 36.1% in Portugal (36.4% in 2020). In 30 municipalities, the inequality in income distribution was higher than the country, especially in the municipalities of Lisboa (42.5%), Porto (42.0%), Vila do Porto (40.7%) and Cascais (40.6%). Between 2020 and 2021, 75% of the municipalities registered a decrease in the asymmetry of the gross reported income less personal income tax paid per taxable person, with the municipality of Vila do Porto (-1.7 p.p.) having the highest reduction.

The analysis of income mobility at local level between 2019 and 2021 (see Box) shows that the number of individuals who moved up 2 or more deciles in the income distribution was higher than those who moved down in 90% of the municipalities.

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Statistics Portugal releases 'Income statistics at the local level' for the year 2021, based on anonymized fiscal data from the Tax and Customs Authority (AT) related to the Settlement note of Personal Income Tax (IRS – Modelo 3), obtained under a collaboration agreement between the two entities.

This initiative is part of the development framework of the **National Data Infrastructure (IND)** at Statistics Portugal, which is the corollary of a path that has been pursued in recent years for integrating data from different sources.

The results presented are based on the values of ‘Gross reported income’, of ‘Personal income paid tax’ and the derived variable of ‘Gross reported income less personal income paid tax’ by tax household and by taxable person. The analysis focuses on the year of 2021, last year with information provided to Statistics Portugal, although information is also presented for the years 2019 and 2020. The results are structured in summary sheets for municipalities with 2 000 or more taxable persons and for the 25 NUTS 3 sub-regions of the country (see Technical Note at the end of this press release).

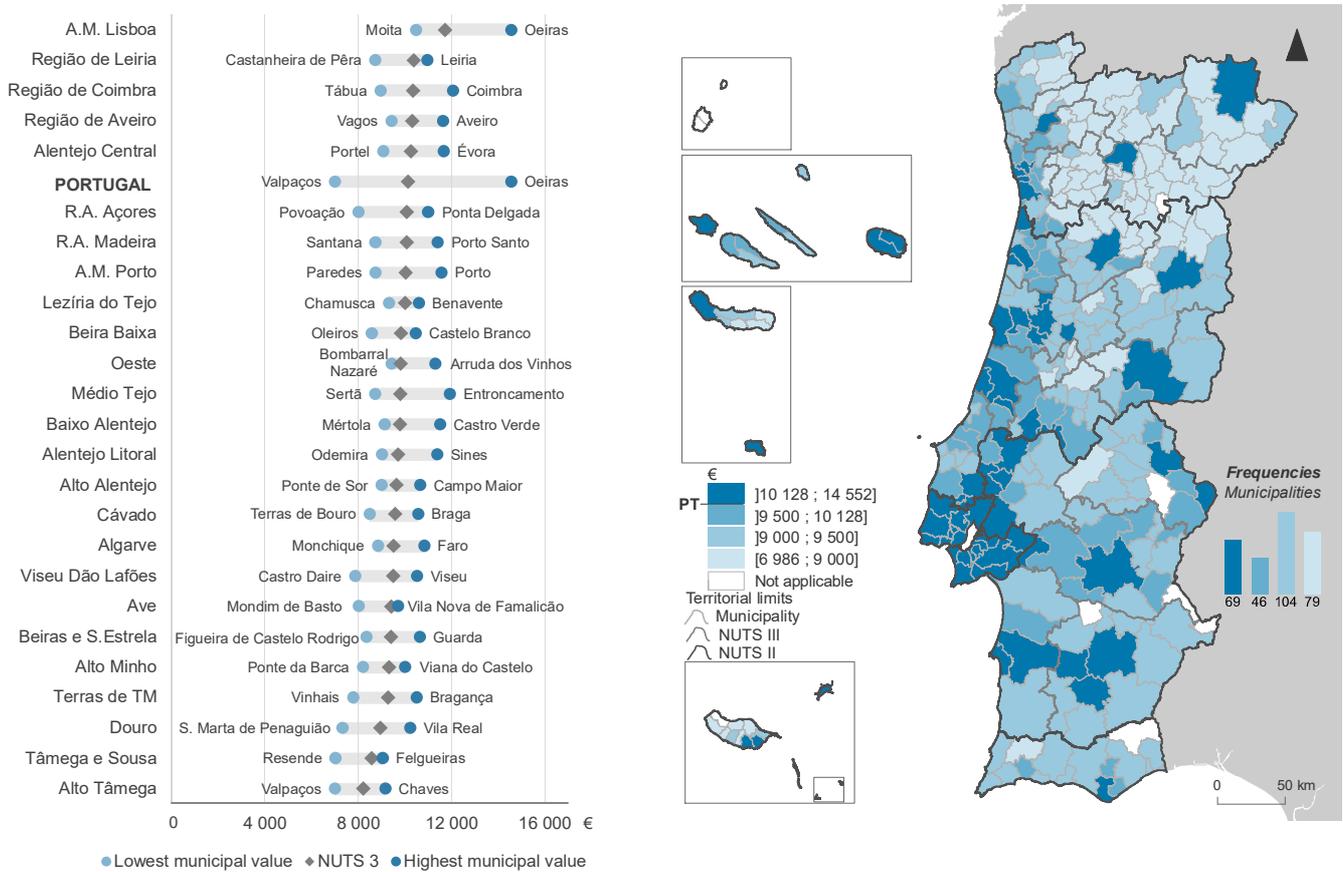
This publication is integrated in [StatsLab – Statistics in development](#). The statistics presented in this area are distinguished by two characteristics: i) they are part of projects aiming at creating new statistical products which are still under development and, yet, ii) they already contain useful information for economic and social analysis.

At the end of this press release, a **Box** is presented with an analysis of **Income Mobility at local level** for the period 2019-2021, an initiative that is part of the development of the **IAssLocal – Asymmetry Indicators at local and interregional level** project, co-financed by the Technical Assistance Operational Programme (POAT/PT2020).

## 1. Characterization of income distribution and inter and intramunicipal inequalities

*In 2021, all AML municipalities had median values of gross reported income less personal income paid tax per taxable person higher than national reference (10 128 €)*

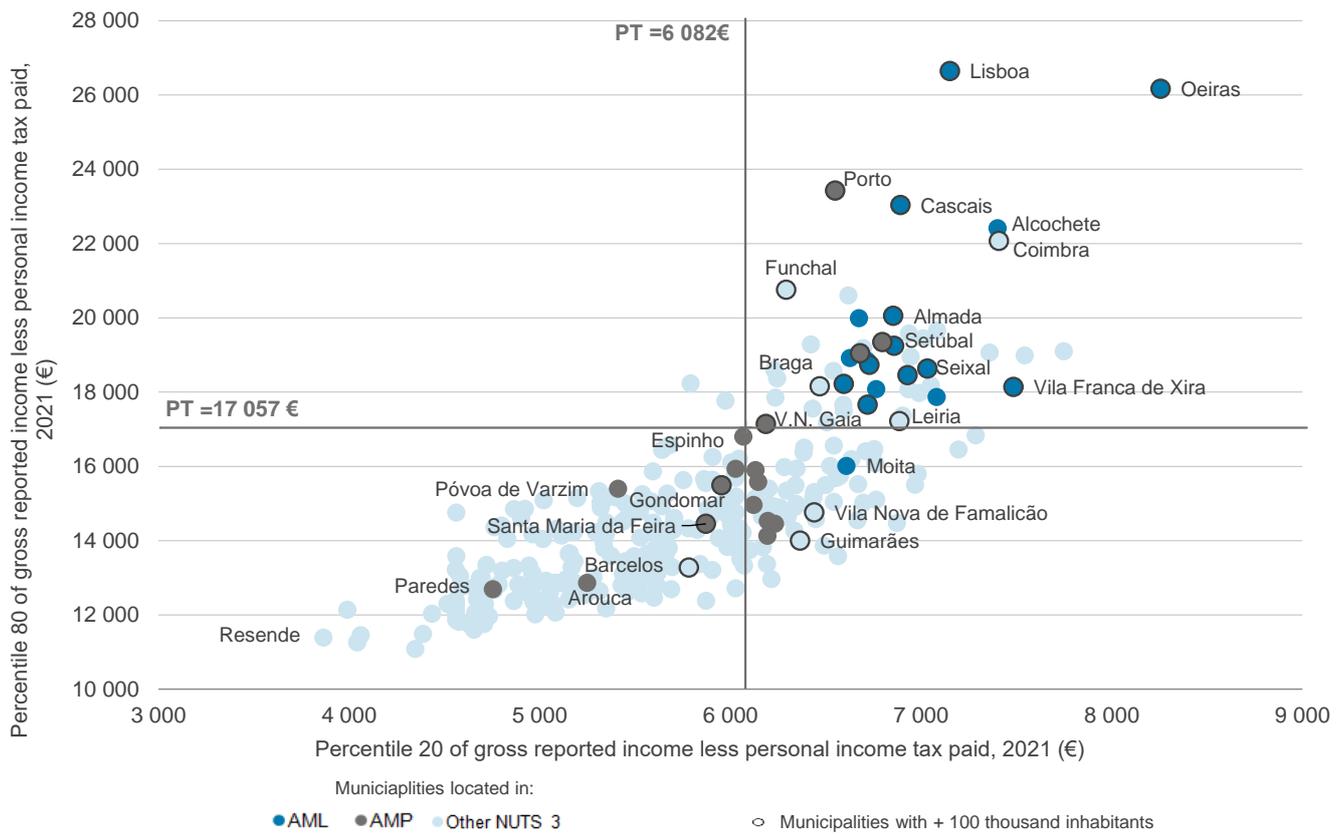
**Figure 1. Median value of gross reported income less personal income paid tax per taxable person, Portugal, NUTS 3 and municipalities, 2021**



Note: Results are presented for municipalities with 2 000 or more taxable persons.

In 2021, 47 municipalities scored values of 20<sup>th</sup> and 80<sup>th</sup> percentiles of gross reported income less personal income tax paid per taxable person above the national reference

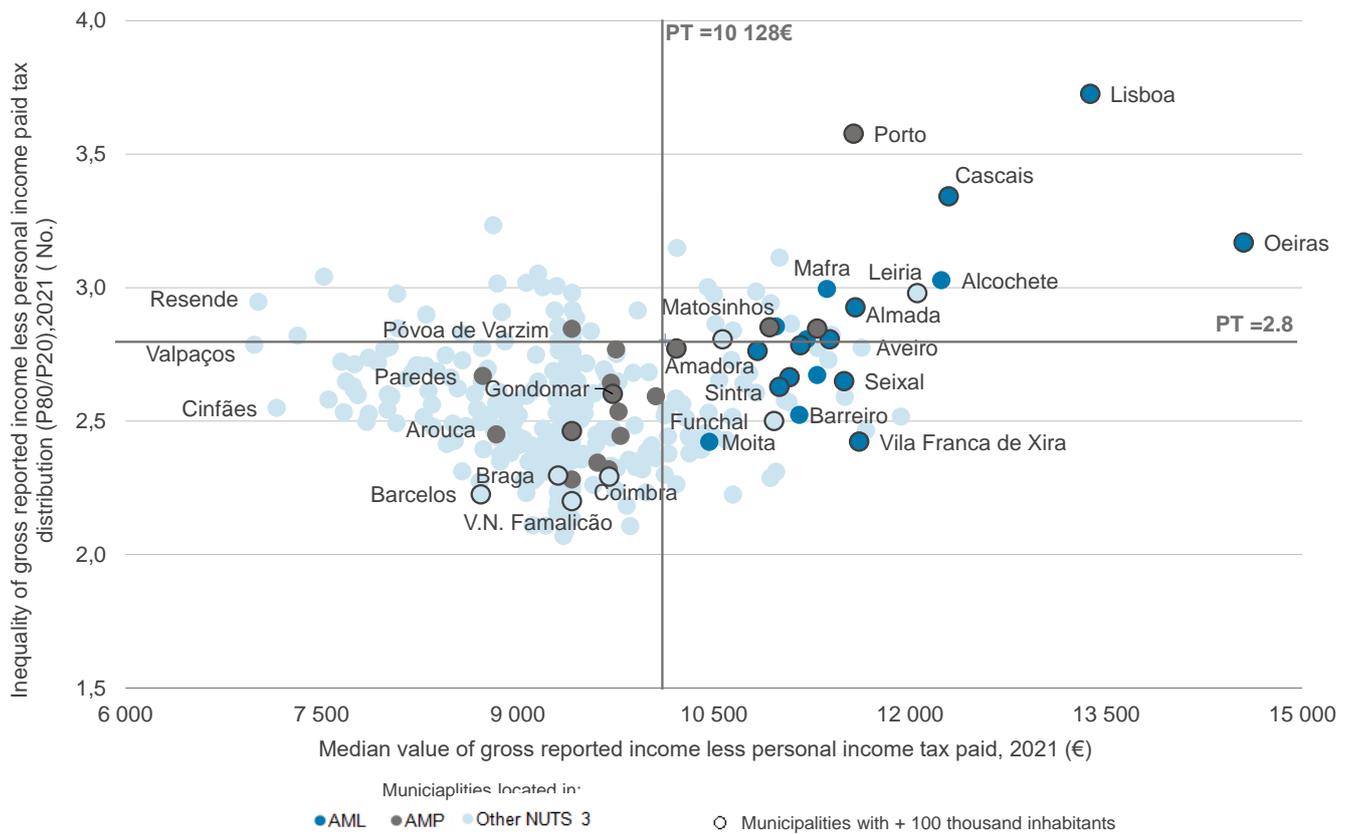
Figure 2. 20<sup>th</sup> and 80<sup>th</sup> percentiles of gross reported income less personal income tax paid by taxable person, Portugal and municipalities, 2021



Note: Results are presented for municipalities with 2 000 or more taxable persons.

In 2021, taking the P80/P20 ratio as a reference, Lisboa and Porto had the highest asymmetry in the distribution of gross reported income less personal income paid tax per taxable person

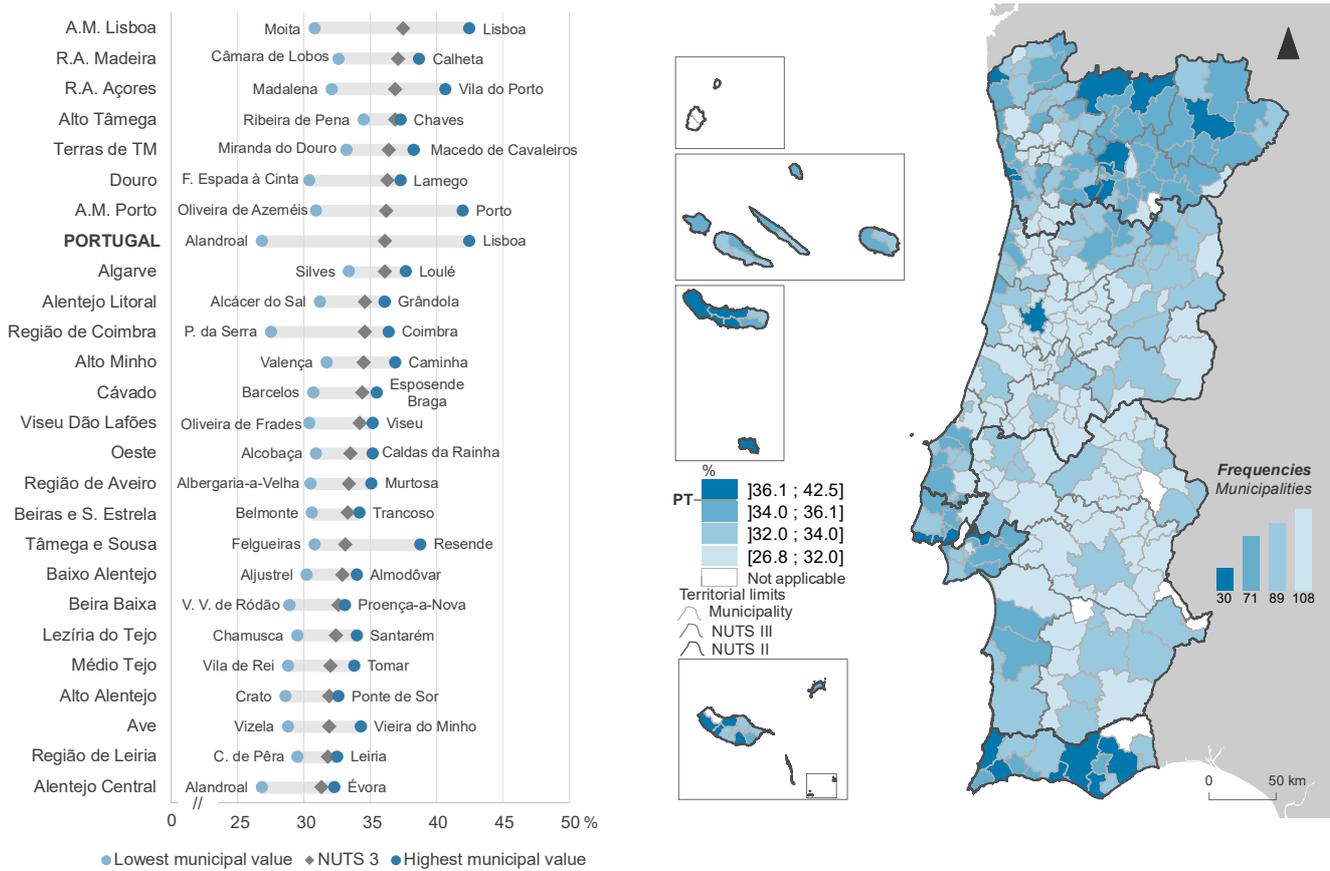
Figure 3. Median and inequality of gross reported income less personal income paid tax distribution of taxable persons (P80/P20), Portugal and municipalities, 2021



Note: Results are presented for municipalities with 2 000 or more taxable persons.

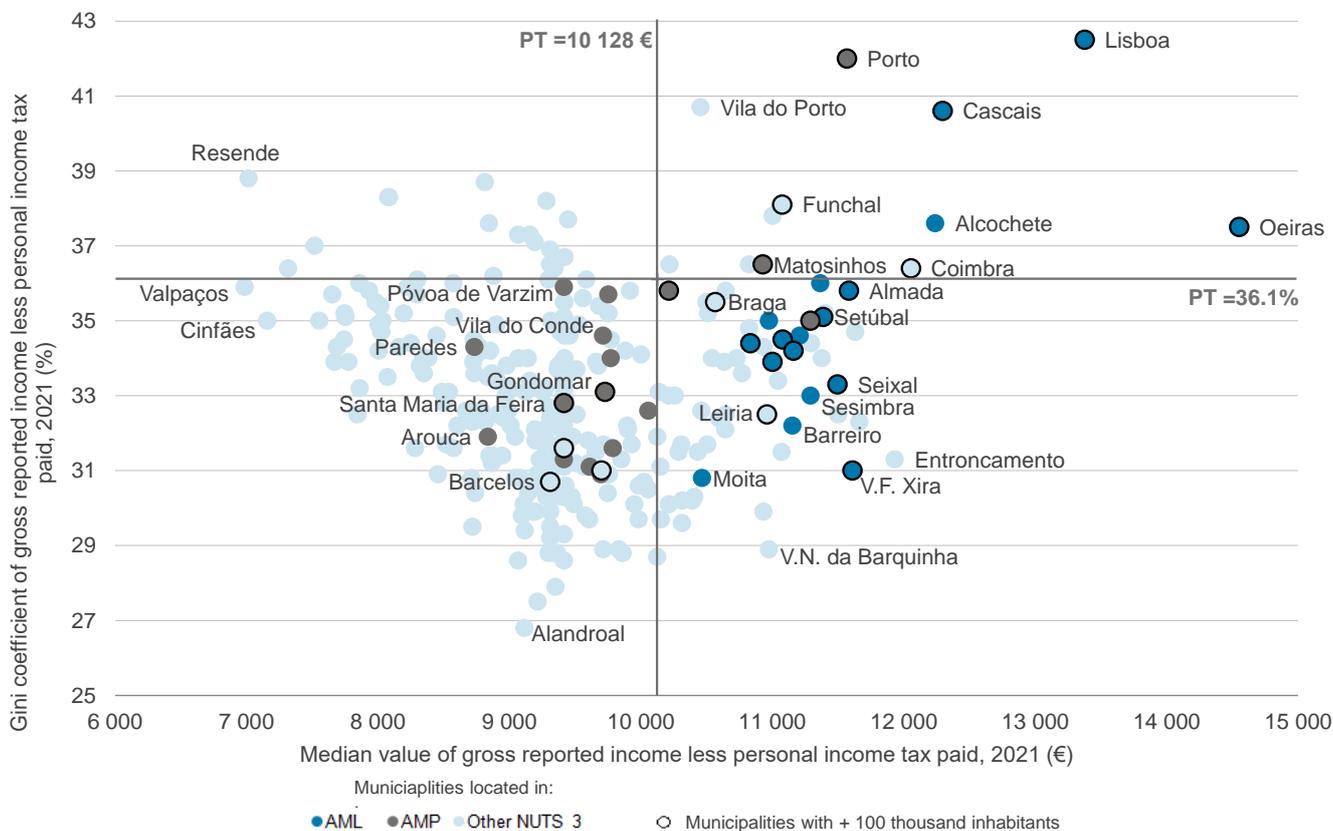
In 2021, Alentejo Central scored the lowest level of income concentration among the 25 NUTS 3 sub-regions of the country

Figure 4. Gini coefficient of gross reported income less personal income tax paid by taxable person, Portugal, NUTS 3 and municipalities, 2021



Note: Results are presented for municipalities with 2 000 or more taxable persons.

Figure 5. Median and Gini coefficient of gross reported income less personal income tax paid by taxable person, Portugal and municipalities, 2021

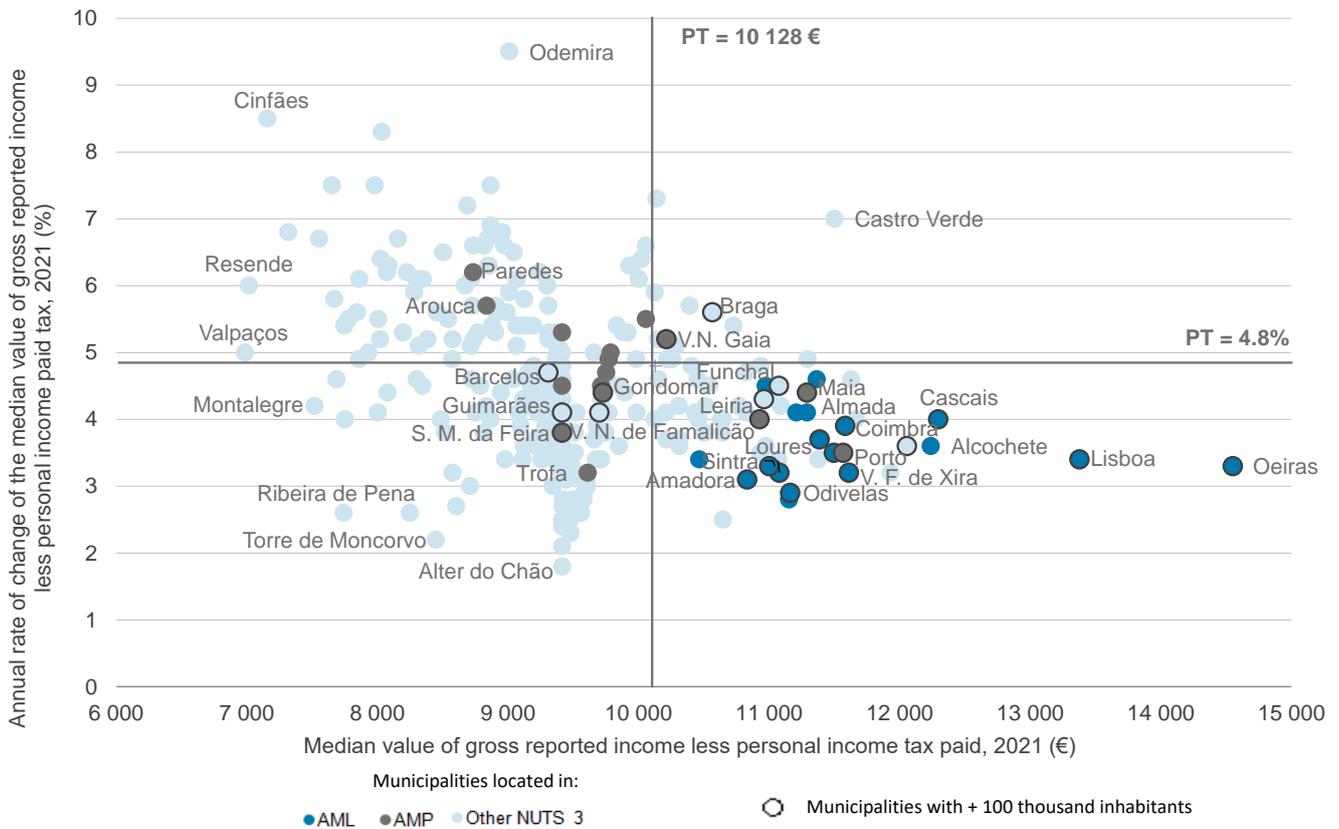


Note: Results are presented for municipalities with 2 000 or more taxable persons.

## 2. Evolution of income distribution and inter and intramunicipal inequalities: 2020 - 2021

*In 2021, only 12 municipalities presented, simultaneously, a median value of gross reported income paid less personal income paid tax per taxable person and an annual growth rate higher than the national references*

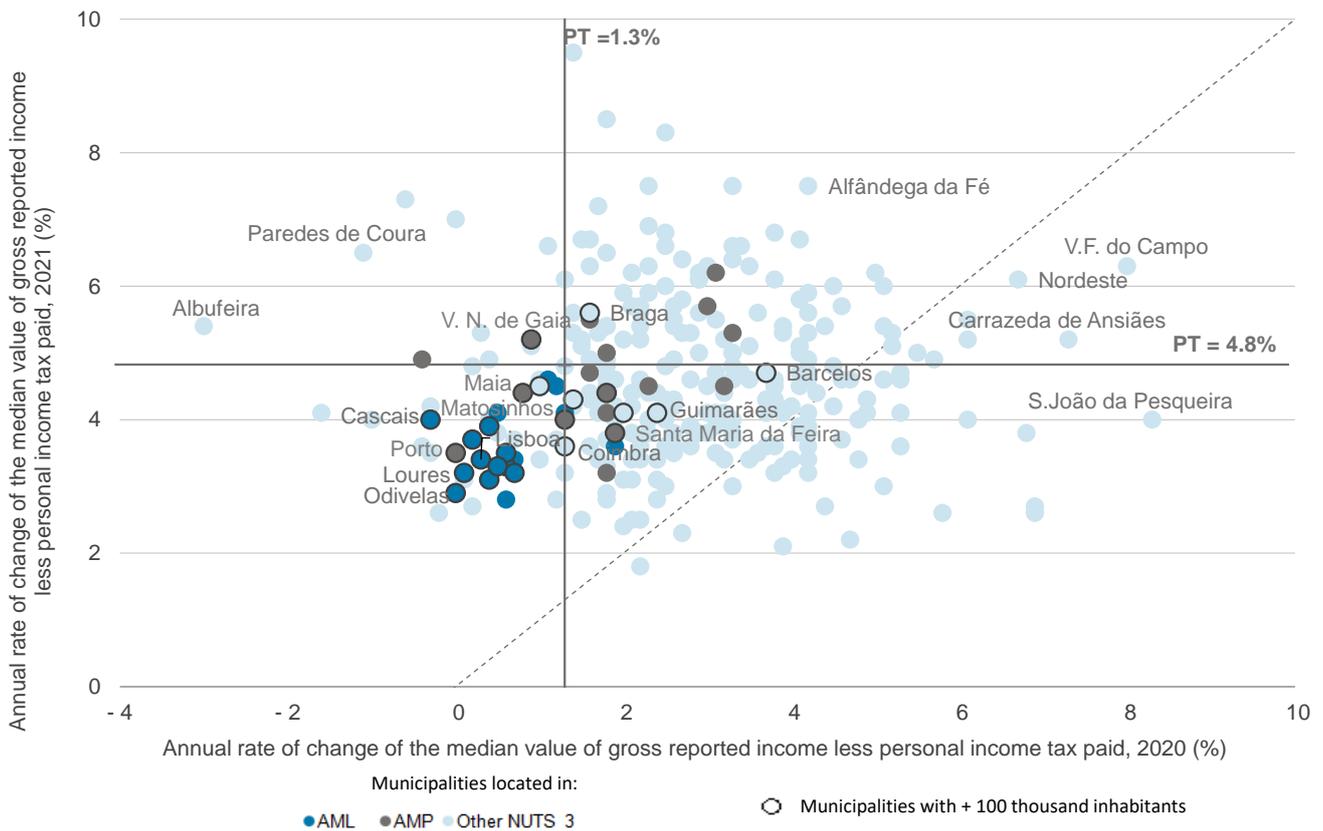
Figure 6. Median value and annual rate of change of gross reported income less personal income paid tax per taxable person, Portugal and municipalities, 2021



Note: Results are presented for municipalities with 2 000 or more taxable persons.

In 2021, 83% of the municipalities increased the income annual rate of change

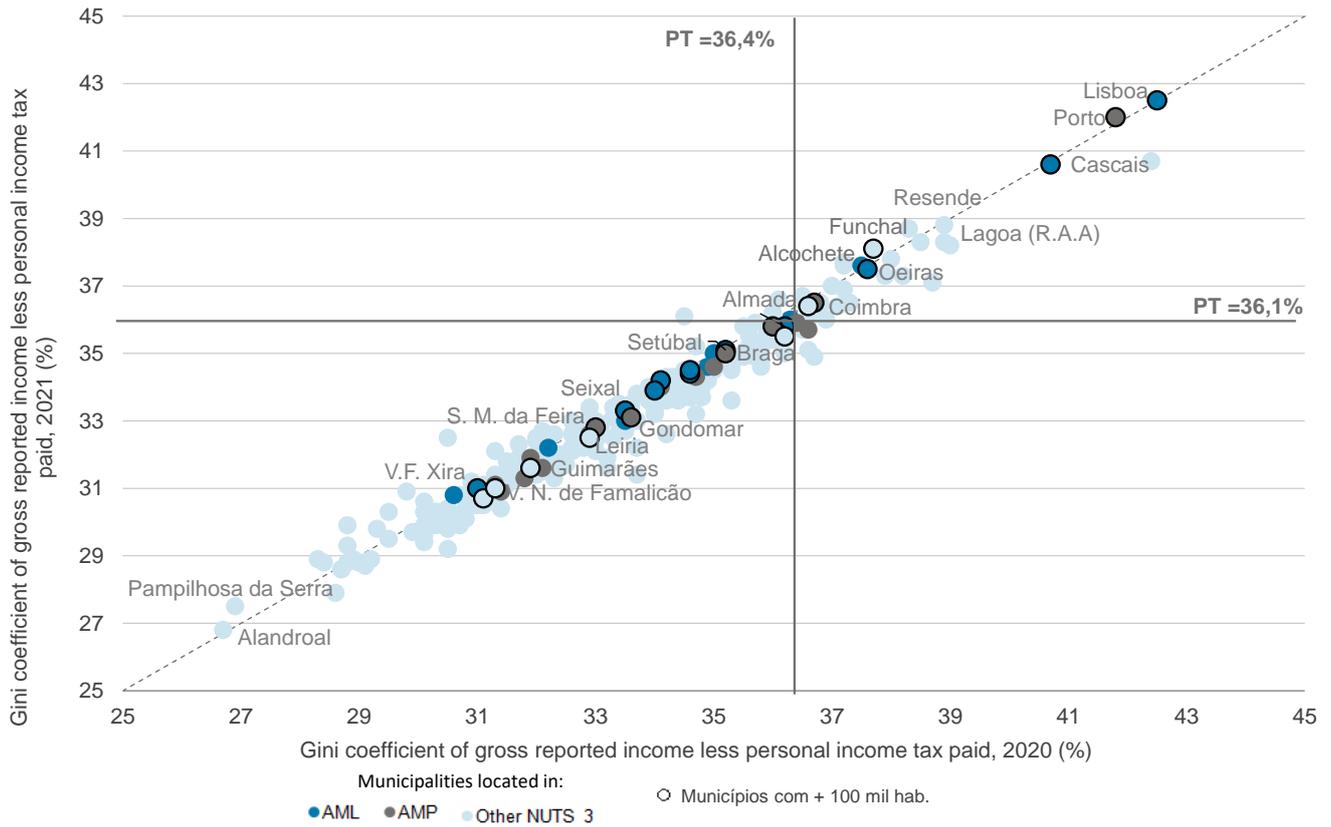
Figure 7. Annual rate of change of gross reported income less personal income paid tax per taxable person, Portugal and municipalities, 2020 and 2021



Note: Results are presented for municipalities with 2 000 or more taxable persons.

3/4 of the municipalities recorded a reduction in income distribution inequality between 2020 and 2021

Figure 8. Gini coefficient of gross reported income less personal income tax paid by taxable person, Portugal and municipalities, 2020 and 2021



Note: Results are presented for municipalities with 2 000 or more taxable persons.

## BOX: INCOME MOBILITY AT LOCAL LEVEL, 2019 - 2021

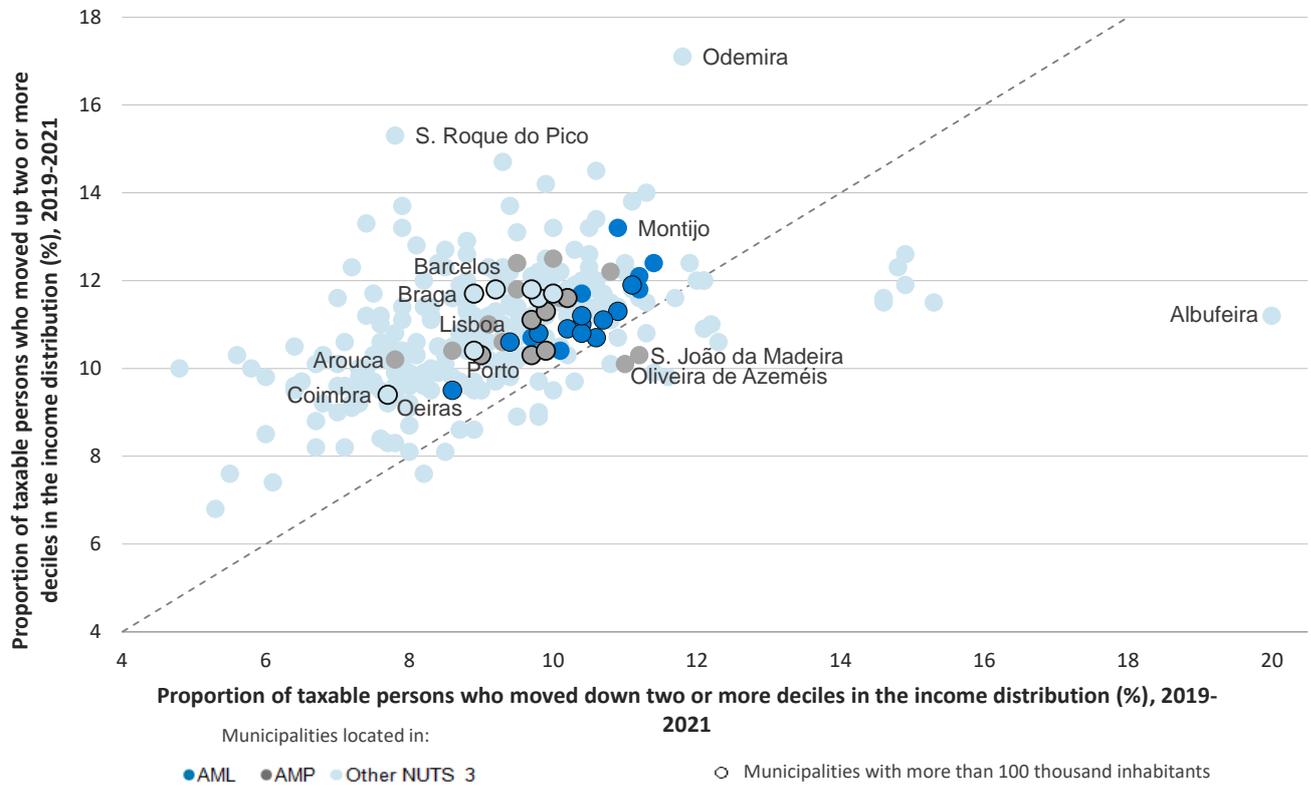
IN 90% OF MUNICIPALITIES THE NUMBER OF INDIVIDUALS WHO MOVED UP 2 OR MORE DECILES IN THE INCOME DISTRIBUTION WAS HIGHER THAN THOSE WHO MOVED DOWN

Figure 9. Mobility matrix between gross reported income less personal income tax paid deciles, Portugal , 2019-2021

2021 \ 2019	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Value (€)
Decile 1	57.5	14.4	8.4	6.4	4.9	3.3	2.2	1.5	0.9	0.5	4 308
Decile 2	16.5	51.7	11.5	7.3	5.3	3.5	2.0	1.2	0.6	0.3	6 000
Decile 3	8.1	16.5	45.2	11.3	7.5	5.2	3.2	1.7	0.8	0.3	7 516
Decile 4	6.1	6.5	18.3	38.9	15.1	7.2	4.2	2.3	0.9	0.3	8 717
Decile 5	4.2	4.5	6.9	22.4	36.7	14.0	6.5	3.2	1.3	0.4	9 830
Decile 6	2.9	3.0	4.6	6.9	20.9	38.2	14.7	5.9	2.3	0.6	11 365
Decile 7	2.0	1.8	2.7	3.9	5.7	21.1	42.1	15.0	4.7	1.2	13 443
Decile 8	1.3	1.0	1.4	1.9	2.6	5.2	20.2	49.0	14.7	2.9	16 643
Decile 9	0.8	0.5	0.7	0.8	1.0	1.7	3.8	17.8	60.3	12.7	22 634
Decile 10	0.5	0.3	0.3	0.3	0.3	0.5	1.0	2.3	13.6	80.9	
Value (€)	4 719	6 494	8 097	9 377	10 553	12 128	14 288	17 691	23 911		
Rate of change 2019-2021 (%)	9.5	8.2	7.7	7.6	7.4	6.7	6.3	6.3	5.6		

**Note:** The data presented in the matrix refers to the proportion of taxable persons in the respective decile in 2019. The values of the gross reported income less personal income tax paid by taxable person do not correspond to the value published within the Income Statistics at the local level as in this exercise the universe of common taxable persons in the two years under analysis is considered: 93% and 91% of the total universe of taxable persons in 2019 and 2021.

Figure 10. Proportion of taxable persons who moved up two or more deciles in the income distribution and Proportion of taxable persons who moved down two or more deciles in the income distribution, municipality, 2019-2021



Note: Results are presented for municipalities with 2 000 or more taxable persons.

## TECHNICAL NOTE

The 'Income statistics at the local level' have national coverage. The observed statistical unit is the tax household with gross reported income less personal income tax paid higher than zero.

With the IRS reform in 2015, and due to the increasing globalization of economic activity, the new concept of "partial tax residence" was introduced, being possible in each year that the taxpayer is considered resident in national territory only for a part of the year, if it remains more than 183 days, consecutively or not in national territory. These taxpayers may submit two IRS declarations, one as resident and one as non-resident. For the purposes of analysis, in these situations, it was decided to aggregate the information of the 'Gross reported income' and the 'Personal income paid tax'.

Following the mandatory online filing of the return, in force as of 2018, the information released is referenced to the municipality of the taxpayer's tax address and non-residents are excluded from the target population for the study of income distributions (includes results from taxpayers with "partial tax residence"). This option is reflected in the data for 2018 onwards.

'Income statistics at the local level' are based on administrative data, namely from the information of the Settlement note of Personal Income Tax (IRS – Modelo 3), obtained from the Tax and Customs Authority under a collaboration agreement with Statistics Portugal.

The results presented are based on the values of 'Gross reported income' of 'Personal income paid tax' and of the derived variable of 'Gross reported income less personal income paid tax' by tax household and by taxable person:

- Gross Reported Income - Income that corresponds to: 1) the value of the income not exempt, before any specific deduction for categories A (Dependent labor) and H (Pensions); 2) the value of the net income, i.e. the value of the income after the respective deductions for the other categories;
- Personal Income Tax Paid - Amount of tax corresponding to the tax due, i.e. the amount of tax levying net of the specific deductions foreseen in Personal Income Tax and tax benefits, before deductions are made regarding payments on account of withholding taxes.

The annual value of gross reported income covers exclusively the income declared and which constitutes the tax base: Dependent labor (Category A), Business and professional income (Category B), Investment income (Category E), Rental income (Category F), Capital gains (Category G) and Pensions (Category H).

Since the Settlement note of Personal Income Tax (IRS – Modelo 3) does not allow a distinction between the income of taxable person A and B, it was assumed a uniform distribution of the income of the tax households in the presentation of results per taxable person. This option was based on a sensitivity analysis of the results to various working assumptions. It also took into account the article 69 of the Personal Income Tax Code - Family Quotient, which states that, for taxable persons who are married and not legally separated from persons and goods or who are "de facto" united, as long as they opt for joint taxation, the rates corresponding to the taxable income divided by two are applied.

In the 'Income statistics at the local level', resulting from the use of administrative sources, it should be taken into account that: (i) the settlement notes generally don't include income for which the exemption of the IRS declaration is allowed, which tends to truncate the left-hand side of the income distribution; (ii) the concept associated with the unit of analysis 'Tax household' is distinct from the 'Private household' used in the Household Surveys; (iii) households benefit from other income that goes beyond the scope of the income declaration for IRS purposes; (iv) disposable income is also conditioned by other taxes and fees (e.g. municipal property tax) and Social Security contributions payable by the worker. Despite these constraints, the information provided in this edition allows an outlook of the municipalities' relative situation and thus contributes to the characterisation of the income unequal distribution in the territory.

Based on the 'Gross reported income' and the 'Gross reported income less personal income paid tax' by tax household and by taxable person the indicators - P80/P20 ratio, P90/P10 ratio and Gini coefficient - are computed for the characterization of the income distribution (see concepts).

To ensure the robustness of the results presented and to avoid excessive granularity of the information that may indicate individual situations, the indicators are presented for municipalities whose target population comprises a minimum number of 2 000 taxable persons, therefore the following 10 municipalities are excluded in 2021: Corvo, Barrancos, Lajes das Flores, Alvito, Santa Cruz das Flores, Porto Moniz, Mourão, Penedono, Alcoutim and Monforte.

## ACRONYMS AND DESIGNATIONS

- **Concepts related to Income statistics at the local level**

**Tax household** - Household consisting of: a) spouses not legally separated from persons and property, or unmarried partners, and their dependents; b) each spouse or former spouse, respectively, in cases of property and legal separation or nullity declaration, annulment or dissolution of marriage, and dependents in charge; (c) single parent and dependents; d) single adopter and dependents. Note: Dependents include : a) Children, adoptees and stepchildren, minors not emancipated, as well as minors under guardianship; b) The adopted children and stepchildren, above legal age of majority, as well as those who until the age of majority were subject to the guardianship of any of the subjects to whom the household is responsible and are not more than 25 years old and do not receive annual income higher than the value of minimum monthly guaranteed salary; c) above legal age children, adoptees, stepchildren and those subject to guardianship, who are unfit for work and to ear raise their own means of subsistence; d) The civil godchildren.

**Gini Coefficient** - Inequality indicator in the income distribution that aims to summarize in a single value the asymmetry of this distribution, assuming values between 0 (when all individuals have equal income) and 100 (when all income is concentrated in a single individual).

*The adopted formula for the Gini coefficient was:  $G = \frac{2}{n^2 \bar{x}} \sum_{i=1}^n i(x_i - \bar{x}) \times 100$  where  $x_i$  represents the observed income value,  $n$  represents the number of observed values,  $\bar{x}$  represents the mean of the income value and  $i$  represents the order of each observation when observations are ranked in increasing order of income value.*

**Personal Income Tax** - Tax on the annual value of the income of residents in Portugal, regardless of where they were obtained, as well as on income obtained in Portugal by non-residents.

**Personal Income Tax Paid** - Amount of tax corresponding to the tax due, i.e, the amount of tax levying net of the specific deductions foreseen in Personal Income Tax and tax benefits before deductions are made regarding payments on account of withholding taxes.

**P80/P20 ratio** - Indicator of inequality in income distribution, expressed by the number of times the income of the unit of analysis (tax household or taxpayer) located in the 80th percentile is higher than the income of the unit of analysis in the 20th percentile.

**P90/P10 ratio** - Inequality indicator in income distribution, expressed by the number of times the income of the unit of analysis (tax household or taxable person) located in the 90th percentile is higher than the income of the unit of analysis in the 10th percentile.

**Gross Reported Income** - Income that corresponds to: 1) the value of the income not exempt, before any specific deduction for categories A (Dependent labor) and H (Pensions); 2) the value of the net income, i.e. the value of the income after the respective deductions for the other categories.

**Taxable Income** - Income that, for the purpose of Personal Income Tax, corresponds to the total income received in the year, after deductions and allowed exemptions.

**Taxable Person** - Person living in Portugal as well as the one that, although not living in the country, obtains income there.

- **Other relevant concepts within the NSS**

**Private Household** - A group of people living at the same dwelling, with either "de jure" or "de facto" family relationships, occupying the all or part of a dwelling; or a single person that fully or partly occupies a dwelling.

**Disposable Income (household)** – The balance of the secondary distribution of income account, which shows how the balance of the primary income of an institutional sector is allocated by redistribution: current taxes on income, wealth etc., social contributions and benefits (excluding social transfers in kind) and other current transfers.

**Household Net Monetary Income** - Monetary income received by the household as a whole and by each of its members, from work (employee income and income from self-employment), from other private income sources (capital and property income, private transfers received) and from pensions and other social transfers, net of income taxes and social security contributions.

## ACKNOWLEDGEMENTS

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