

27 July 2021

Income Statistics at the local level – reported income on Personal Income Tax (IRS) indicators 2019



Inter and Intramunicipal Inequalities– A territorial portrait based on the personal income tax (IRS) settlement notes

In 2019, the median value of gross reported income less personal income tax paid per taxable person was 9 539 € in Portugal, corresponding to an increase of +4.5% over the previous year. All municipalities followed this growth trend, but only one fifth had median values higher than the country: the 18 municipalities of the Área Metropolitana de Lisboa (AML), 19 municipalities in the Cento, 13 in the Alentejo, 7 in the Norte, 4 in the Região Autónoma dos Açores, 3 in the Região Autónoma da Madeira and only Faro in the Algarve. The three municipalities with the highest declared values were Oeiras (14 009 €), Lisboa (12 898 €) and Cascais (11 859 €).

In 2019, the P80/P20 ratio of gross reported income less personal income tax paid per taxable person – an indicator that reflects the number of times that income of the taxable person in the 80th percentile is higher than income of the taxable person in the 20th percentile – was 2.8 in Portugal and 50 municipalities scored a value higher than this reference, Lisboa (3.7), Porto (3.6) and Cascais (3.4) stood out with greater asymmetry. The lowest ratio observed was in Vizela (2.0).

Statistics Portugal releases 'Income statistics at the local level' for the year 2019, 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.

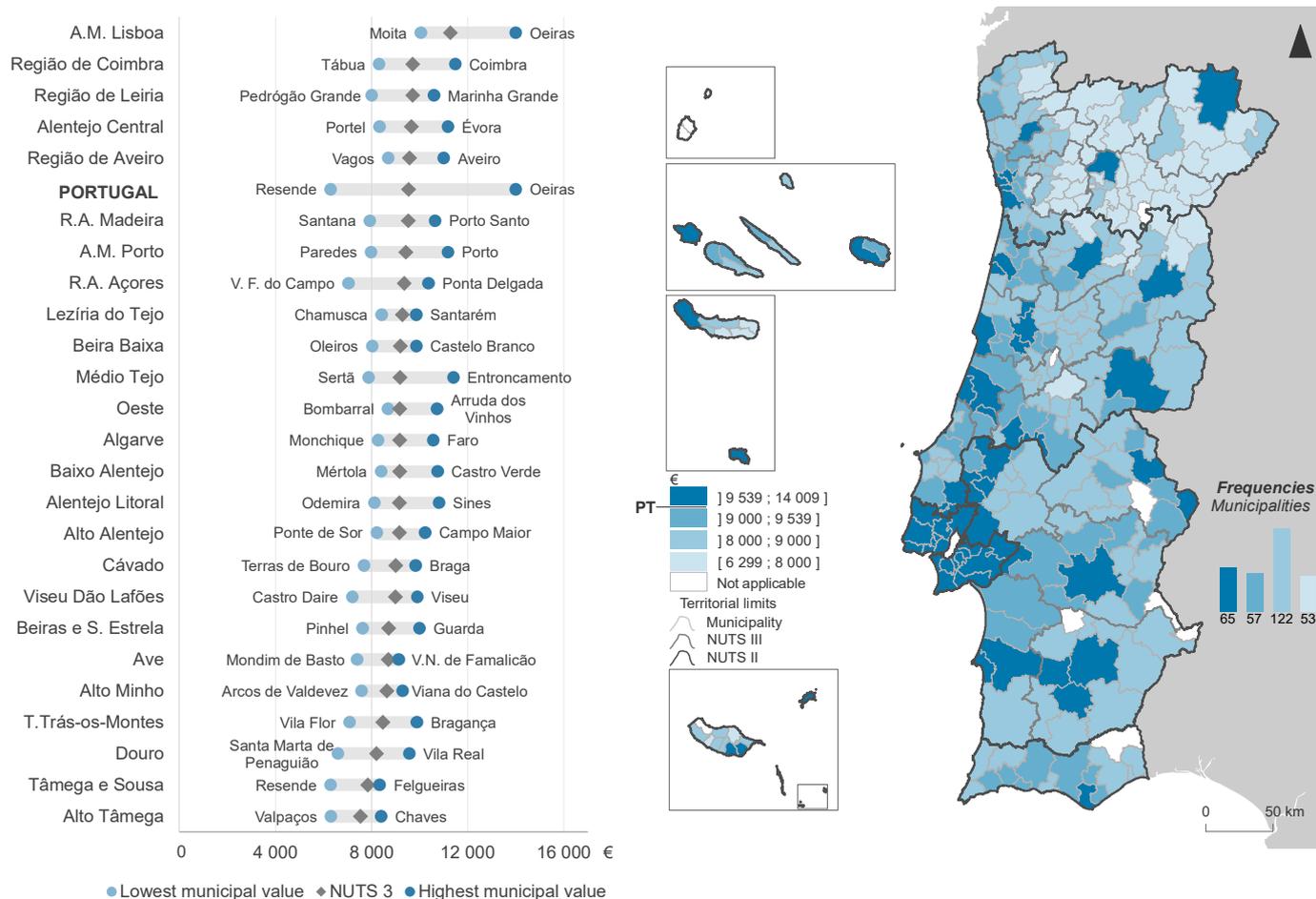
This initiative is part of the development framework of the **National Data Infrastructure (IND)** at Statistics Portugal, which is the corollary of a path that has been pursued in recent years for integrating data from different sources.

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 2019, last year with information provided to Statistics Portugal. 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 and Results reading guide).

This publication is integrated in [StatsLab – Statistics in development](#) in Statistics Portugal website. 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. Effectively, it is intended to develop Income Statistics at the local level by integrating the information of Settlement note of Personal Income with other information also obtained from the Tax and Customs Authority, with a focus on the dissemination of more detailed results.

In 2019, all AML municipalities had median values of gross reported income less personal income paid tax per taxable person above 10 000 €

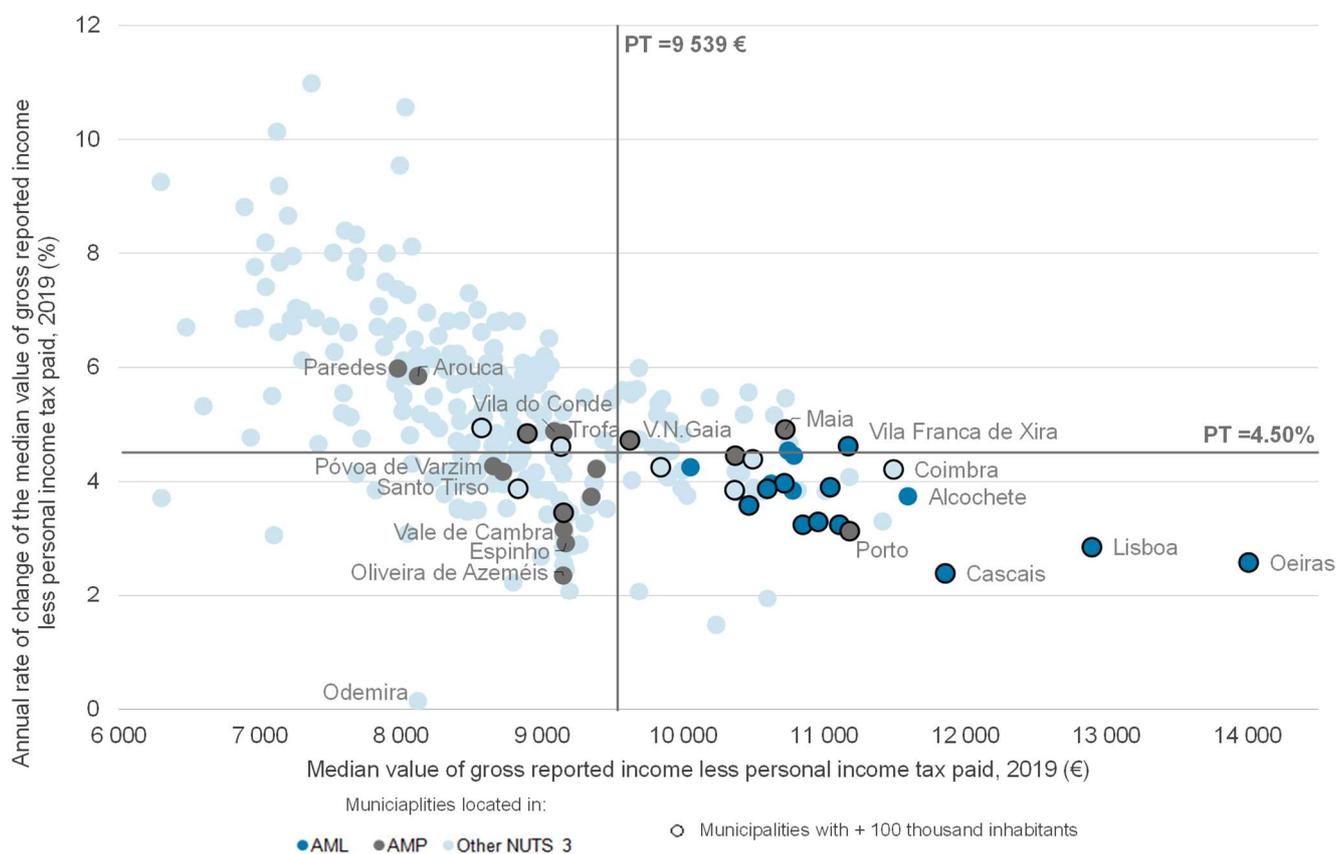
Figure 1: Median value of gross reported income less personal income paid tax per taxable person, Portugal, NUTS 3 and municipalities, 2019



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

In 2019, all municipalities recorded an increase in the median value of gross reported income less personal income paid tax per taxable person

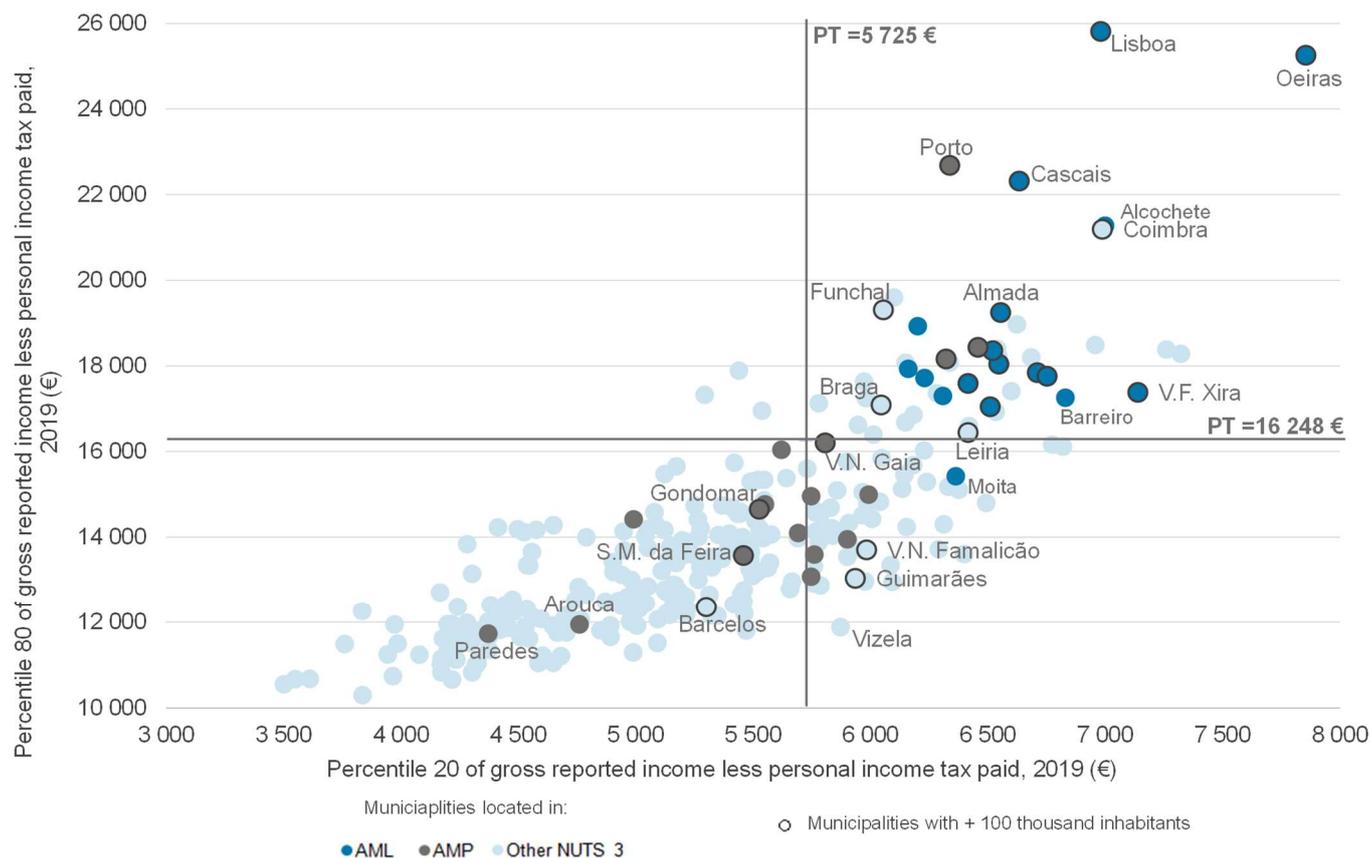
Figure 2: Median value and annual rate of change of gross reported income less personal income paid tax per taxable person, Portugal and municipalities, 2019



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

In 2019, 45 municipalities scored values of 20th and 80th percentiles of gross reported income less personal income tax paid per taxable person above the national reference

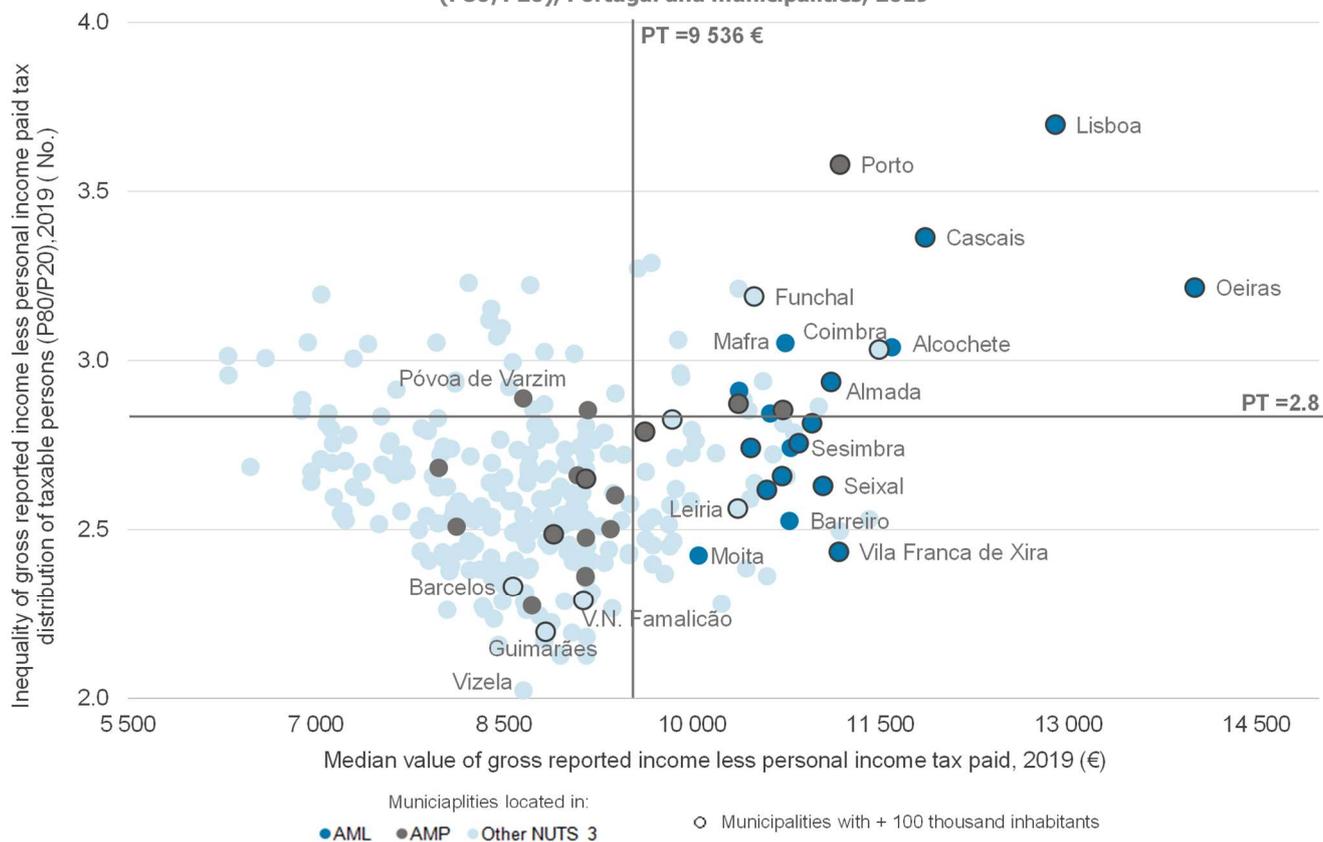
Figure 3: 20th and 80th percentiles of gross reported income less personal income tax paid by taxable person, Portugal and municipalities, 2019



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

In 2019, taking the P80/P20 ratio as a reference, Lisboa, Porto and Cascais had the highest asymmetry in the distribution of gross reported income less personal income paid tax per taxable person

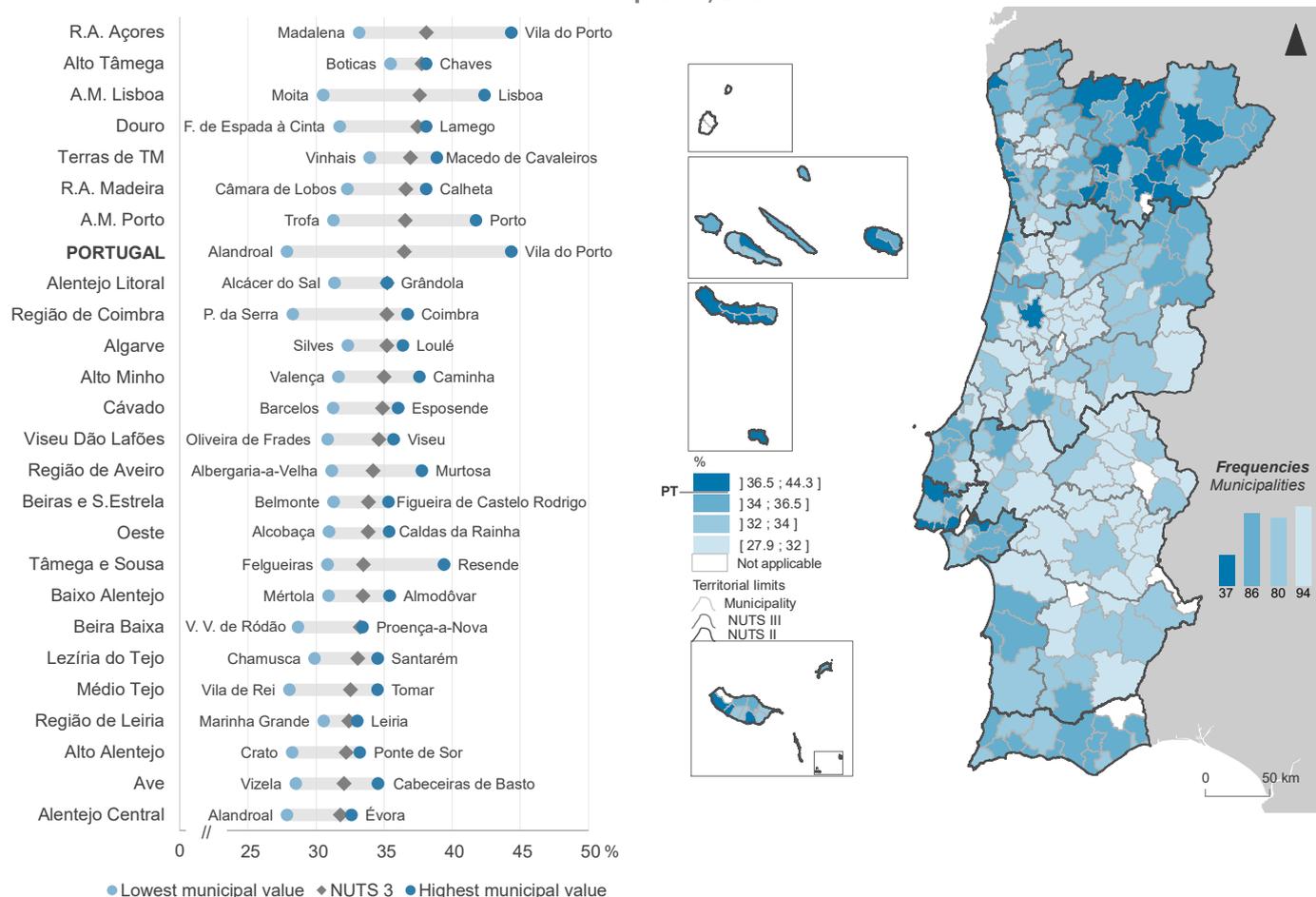
Figure 4: Median and inequality of gross reported income less personal income paid tax distribution of taxable persons (P80/P20), Portugal and municipalities, 2019



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

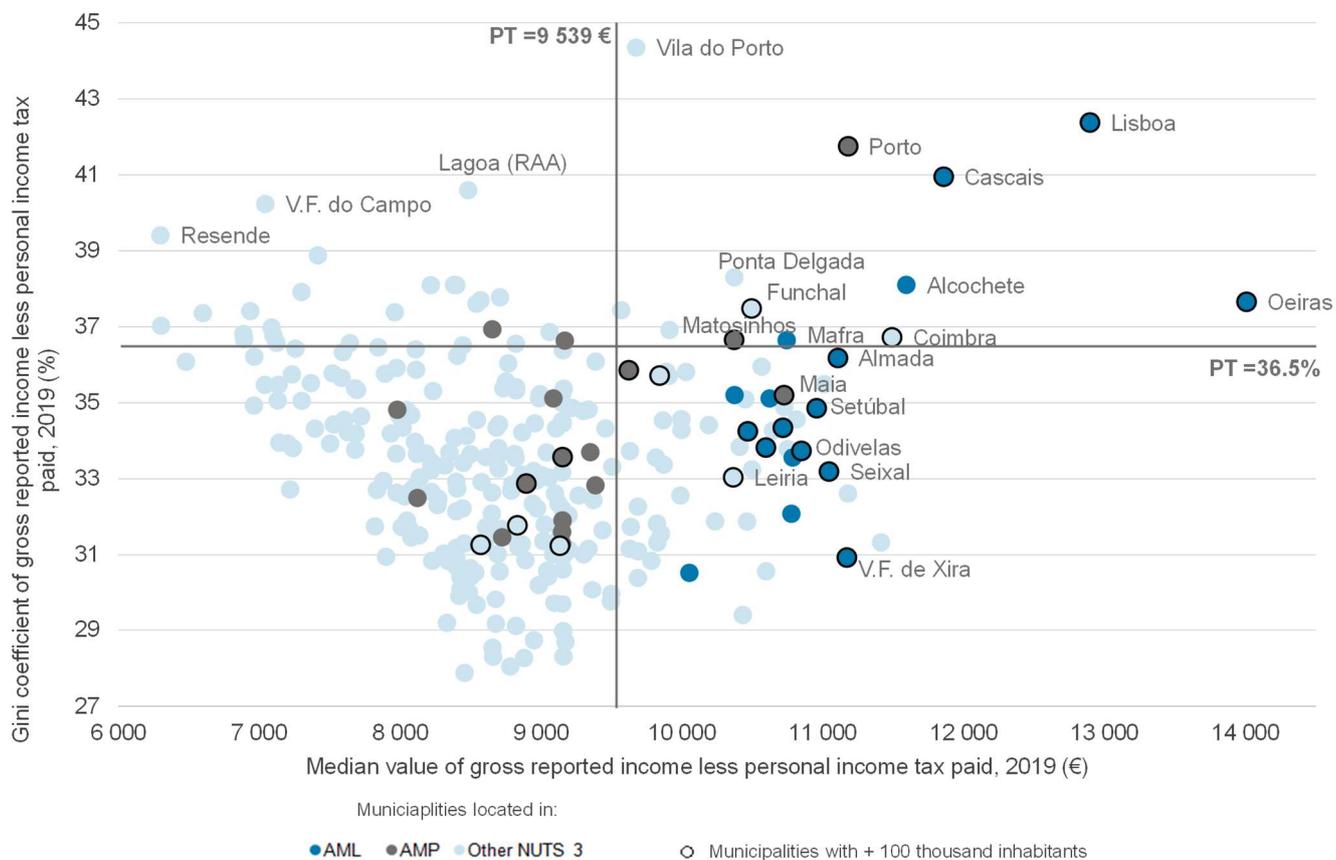
In 2019, Alentejo Central scored the lowest level of income concentration among the country's 25 NUTS 3 sub-regions

Figure 5: Gini coefficient of gross reported income less personal income tax paid by taxable person, Portugal, NUTS 3 and municipalities, 2019



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

Figure 6: Median and Gini coefficient of gross reported income less personal income tax paid by taxable person, Portugal and municipalities, 2019



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

Box – Income' level and asymmetry in municipalities with high tourism demand

Figure 7: Median and inequality of gross reported income less personal income paid tax distribution of taxable persons (P80/P20), Portugal and municipalities with 1 000 and more nights in tourist accommodation establishments per 100 inhabitants, 2019

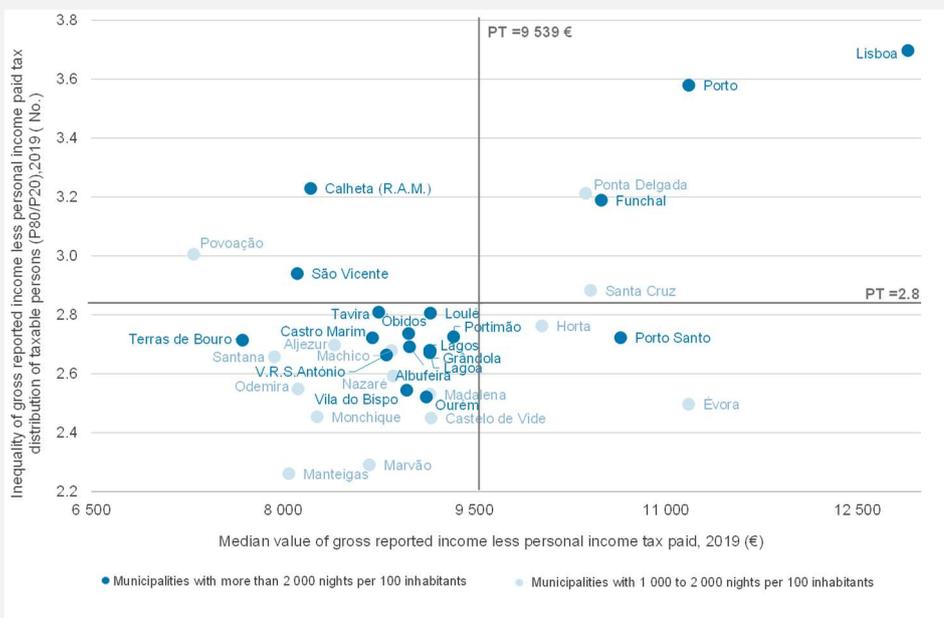
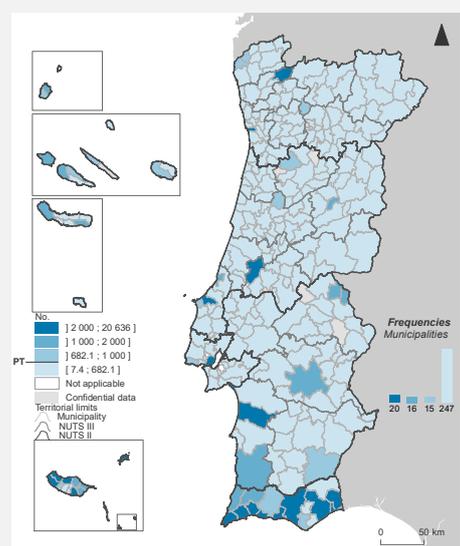


Figure 8: Nights in tourist accommodation establishments per 100 inhabitants, Portugal and municipalities, 2019



Source: Statistics Portugal, Guests stays and other data on hotel activity survey and Income statistics at the local level.

Note: The data in the figure 7 are presented for the municipalities with information in the Guests stays and other data on hotel activity survey and in Income statistics at the local level.

Technical note

The 'Income statistics at the local level' have national coverage. The observed statistical unit is the tax household, and the target population is the tax households 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'.

This edition has introduced a change in the reference of the information to the municipality. In the transmission of information to Statistics Portugal, the Tax and Customs Authority (AT) used to consider the municipality of the tax office where the personal income tax return was delivered and, as a result of the obligation for taxpayers to file the return online, in force from 2018, the AT now also references the data to the municipality of the taxpayer's tax address in the file transmitted to Statistics Portugal. Additionally, this change allowed the identification of the settlement notes of residents and non-residents in the country (1.6% of the tax households associated to the 'Total Population'), being the option to present only the results regarding residents (including the results of taxpayers with "partial tax residence" as explained in the previous paragraph). Thus, it was possible to make a more rigorous link between taxpayers and municipality of residence, and non-residents were excluded from the target population for the study of income distributions.

This option was taken for 2018 and 2019 and Statistics Portugal is in articulation with the AT to assess the possibility of its application to the results for the 2015–2017 period. The changes introduced in relation to previous editions, with the adoption of the new series of data obtained from the AT, globally does not have significant consequences, particularly at the relative positioning level of municipalities, with the calculated indicators as reference. For example, the correlation between the median values of gross reported income per tax household and per taxable person at the municipality level in the 2020 edition and the corresponding ones in the 2021 edition, for the year 2018, is close to one (0.99). However, in terms of absolute values differences were noted in some municipalities.

'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 11 municipalities are excluded in 2019: Corvo, Lajes das Flores, Barrancos, Porto Moniz, Alvito, Santa Cruz das Flores, Mourão, Penedono, Alcoutim, Monforte and Castanheira de Pera.

Concepts

• 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).

In this publication, the formula adopted 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.

This coefficient replaces the inequality indicator calculated in previous editions to adopt the same formulation applied for the publication of the results of the Survey on Income and Living Conditions (EU-SILC).

Personnal 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.

Personnal 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 Personnal 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 Personnal 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

Statistics Portugal thanks the Tax and Customs Authority for providing the information that made possible the public service that Statistics Portugal provides with this publication. Statistics Portugal is also grateful for the collaboration of the Portuguese Association for Consumer Protection (DECO), an entity represented in the Statistical Council, for the technical contributions on the scope of the IRS which enriched the conceptual framework on which this publication was based.