

13 November 2024

EFFORT RATES WITH PERMANENT HOME LOANS
2022

THE EFFORT RATE WITH PERMANENT HOME LOANS INCREASED IN 307 OF THE 308 MUNICIPALITIES IN 2022

In 2022, the median effort rate with permanent home loans for borrowers was 14.5% and 116 municipalities (38% of all municipalities), mainly located in the Norte, Grande Lisboa, Península de Setúbal and Algarve regions, had median values higher than the national reference. In 307 of the 308 municipalities in the country there was an increase in the median value of the effort rate with permanent home loans compared to 2021 (when it had been 12.8%). Considering only borrowers with at least one contract celebrated in 2022 (6.9% of all borrowers), the median effort rate was 19.1% (15.5% in 2021).

In Portugal, the 20% of borrowers with the highest effort rates used almost 1/4 (24.0%) of their income to pay their mortgage instalments in 2022 (21.0% in 2021). The municipal analysis identified 65 municipalities with values above 25% in this indicator, with Aljezur registering the highest value (31.9%). In 2021, 13 municipalities had values above 25 %.

The median effort rate with permanent home loans in 2022 was higher for borrowers up to 34 years old (17.2%) compared to borrowers aged 35 to 64 (14.2%) and borrowers aged 65 or over (13.3%). Algarve, Alto Tâmega e Barroso, Região Autónoma da Madeira, Grande Lisboa and Alto Minho registered effort rates for younger borrowers above 18%.

The median effort rate for borrowers with contracts involving two or more borrowers was 13.8%, and 17.3% for those with a single borrower. The segmentation by sex of the median effort rate for borrowers with contracts involving only a single borrower showed higher values for women (17.7%) compared to men (16.9%). This pattern was also observed in 22 of the 26 NUTS 3 sub-regions. Algarve was the sub-region with the highest housing effort rates for borrowers in contracts involving a single borrower for both sexes.

Introductory Note

Statistics Portugal (INE) releases the effort rates with permanent home loans, referenced to 2022, based on the collaboration protocol established with the National Central Bank (Banco de Portugal – BdP) and the information systems of the two Statistical Authorities.

This project integrates administrative data from various sources, which aims to provide information on the use of income to access permanent home ownership using bank credit and which reflects a framework of collaboration between INE and the BdP to address a central issue, both from the point of view of households'

living conditions and from the perspective of macroprudential policy (see the press release '[effort rates with permanent home loans – 2021](#)' published on 5 December 2023).

The 'effort rates with permanent home loans' results are release according to the new Nomenclature of Territorial Units for Statistics (NUTS 2024) and are available for the series starting in 2021.

In the results presented, the median (the value that separates the ordered set of effort rates with permanent home loans into two equal parts) is the reference statistic for analysing the diversity of borrowers' effort rates in the different territories. In addition, the values of the deciles (values that divide the ordered distribution of effort rates with permanent home loans into 10 equal parts) are presented for interpreting the different situations of borrowers in each territorial unit, making it possible to identify situations in which borrowers are more vulnerable.

The information provided is structured in two parts. The first focuses on characterizing the distribution of the effort rate with permanent home loans at local level and privileges analysis at the level of the municipality and NUTS 3. The second delves into the territorial diversity of access to permanent housing by segmenting the information by the sociodemographic characteristics of the borrowers and by the characteristics of the contracts, focusing on the analysis of NUTS 3 sub-regions and NUTS 2 regions.

The results are presented in **StatsLab** – Statistics in development.

The statistics 'effort rates with permanent home loans' are part of the [IAssLocal – Asymmetry Indicators at local and interregional level](#) project at INE with the aim of providing new indicators to characterise the socio-economic diversity of the territories taking advantage of the potential of the information associated with the **IND** – National Data Infrastructure developed by INE.

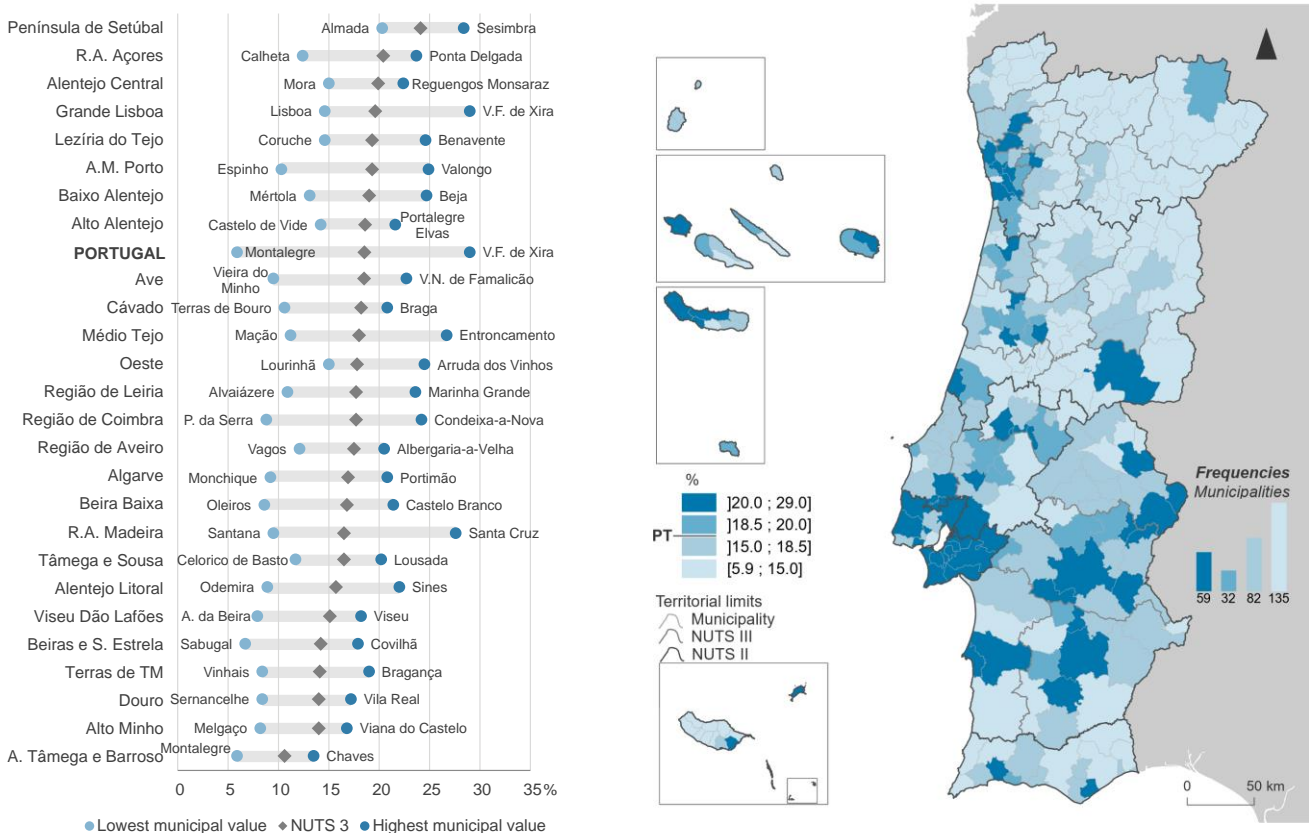
1. Characterization of the distribution of effort rates with permanent home loans at local level

In 2022, the 1 638 064 borrowers with permanent home loans¹ represented 18.5 % of the resident population aged 18 or over in Portugal (18.3% in 2021). At sub-regional level, this proportion was higher than the national level in eight of the country's 26 NUTS III, with Península de Setúbal (24.1%) and Região Autónoma dos Açores (20.4%) standing out with the highest values.

The municipal portrait of this indicator highlights 91 municipalities with values above the national reference. In 59 of these municipalities, the number of borrowers with home loans represented more than 1/5 of the resident population aged 18 or over. The highest values for this indicator were recorded mainly in municipalities in the Península de Setúbal, Grande Lisboa, Área Metropolitana do Porto, the interior of the Alentejo region and the Região Autónoma dos Açores, in contrast to municipalities in the interior of the Norte and Centro regions and the Algarve, which had lower proportions of borrowers in the resident population.

In Portugal, in 2022, the proportion of borrowers in the resident population aged 18 and over ranged from 5.9 % in the municipality of Montalegre to 29.0 % in Vila Franca de Xira.

Figure 1. Proportion of borrowers with permanent home loans in the resident population aged 18 and over, Portugal, NUTS 3 and municipality, December 2022



¹ Up to 300 000 euros, with variable interest rates, signed with financial institutions operating in the country (see methodological note).

In 2022, the median effort rate with permanent home loans for borrowers was 14.5%, an increase of 1.7 percentage points (p.p.) compared to 2021. It should be noted that the year 2022 was marked by a geopolitical and geoeconomic context that resulted in an increase in inflation and, consequently, a rise in interest rates, particularly the interest rates implicit in mortgage loans.

The effort rate with permanent home loans was higher than the national reference in nine of the 26 NUTS 3 regions of the country, with the Algarve (16.5 %) and Tâmega e Sousa (15.3 %) standing out with values above 15 %. Baixo Alentejo was the sub-region with the lowest effort rate with permanent home loans: 12.8%. Compared to 2021, there was an increase in the median effort rate in all the NUTS 3 sub-regions, with the Península de Setúbal (2.1 p.p.) and Grande Lisboa (2.0 p.p.) showing the greatest increases.

In 116 municipalities, mainly located in the Norte, Grande Lisboa, Península de Setúbal and Algarve regions, the median effort rate with permanent home loans was higher than the national reference. The municipality of Lagos (18.3 %) had the highest effort rate in the country. In 307 of the 308 municipalities of the country, there was an increase in the median effort rate with permanent home loans compared to 2021, the only exception was in the municipality of Oleiros (-0.04 p.p.).

Algarve was the sub-region with the highest difference in effort rates between municipalities (4.9 p.p.): the lowest value was in Alcoutim (13.4%) and the highest in Lagos (18.3%). Oeste recorded the lowest disparity in effort rates between municipalities: 1.3 p.p.

Figure 2. Median effort rate with permanent home loans, Portugal, NUTS 3 and municipality, December 2022

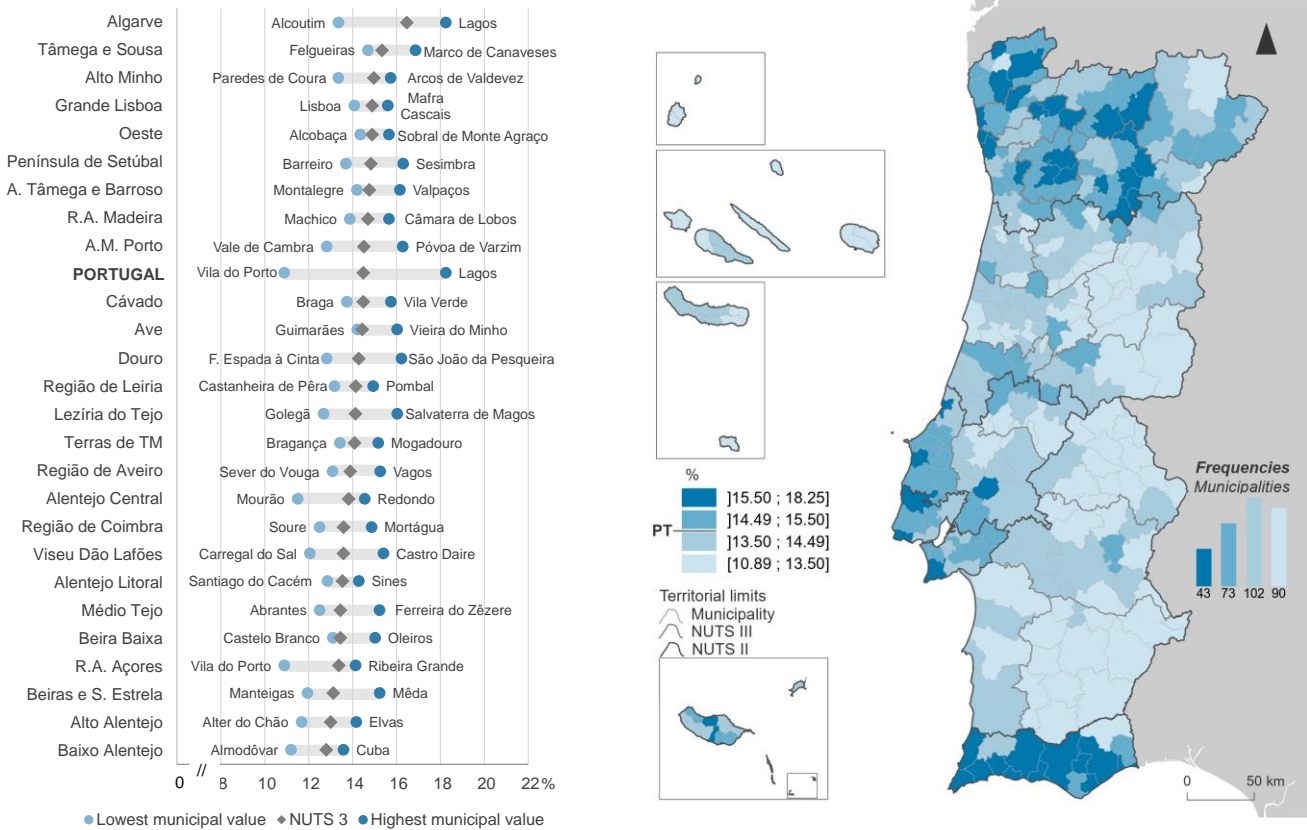


Figure 3 shows the deciles of effort rates with permanent home loans by borrower. There is a greater asymmetry in the distribution of borrowers with higher effort rates (deciles above the median, which corresponds to decile 5) compared to borrowers belonging to the lower deciles. This asymmetry of distribution is particularly noticeable between the values for decile 8 and decile 9.

In 2022, the 20% of borrowers with the highest effort rates (decile 8) used almost a quarter (24.0%) of their income to pay their mortgage instalments. This value increases to 32.4 % or more considering the 10% of borrowers with the highest effort rates (decile 9). In 2021, the value of decile 8 and 9 of the effort rate with permanent home loans was 21.0 % and 28.5 %, respectively.

At sub-regional level, in 2022, the value of decile 9 of the effort rate with permanent home loans ranged between 27.9% in Alto Alentejo and 37.9% in the Algarve. Apart from the Algarve, in Grande Lisboa (34.5%) and Alto Tâmega e Barroso (34.2%), the mortgage instalments of the 10% of borrowers with the highest effort rates represented more than 34% of their income.

Figure 3. Deciles of the effort rate with permanent home loans, Portugal and NUTS 3, December 2022

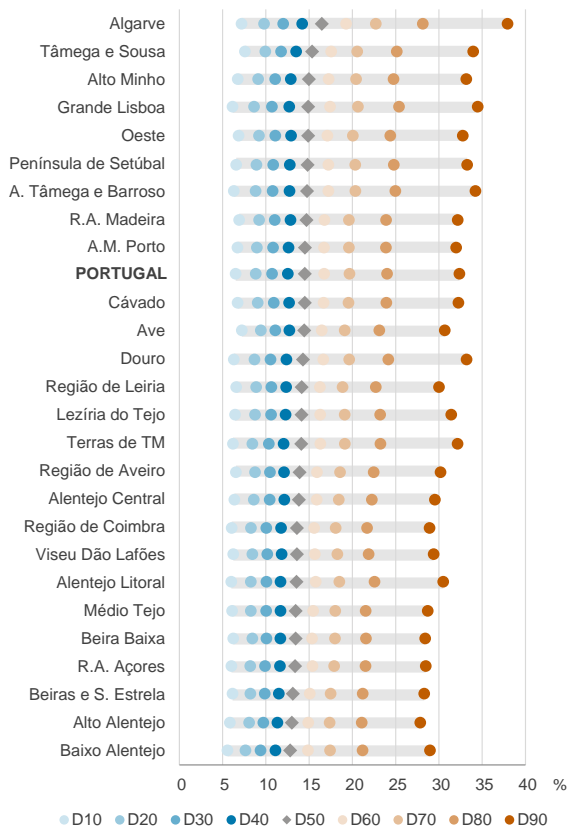
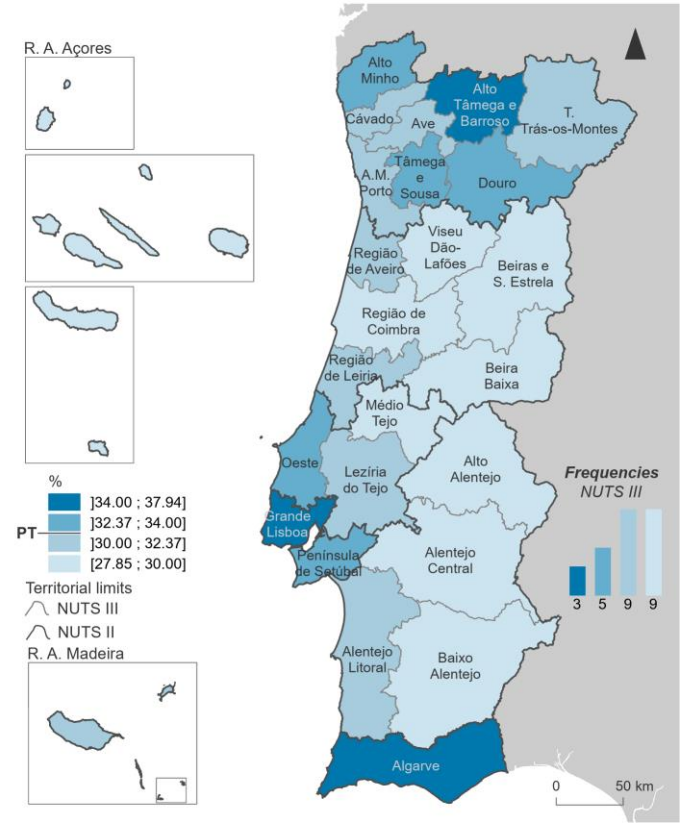


Figure 4. Decile 9 of the effort rate with permanent home loans, NUTS 3, December 2022



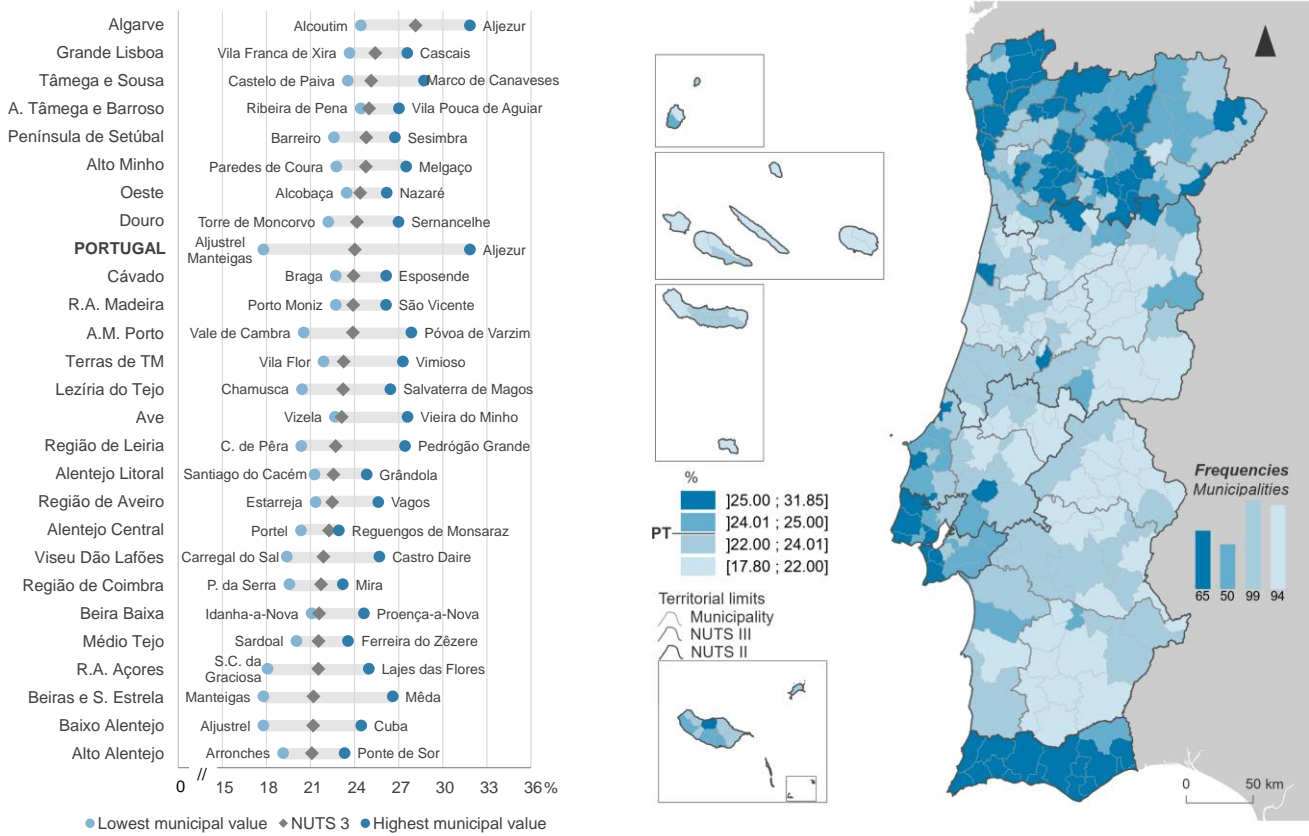
The municipal portrait of the value of decile 8 of the effort rate with permanent home loans highlighted 65 municipalities with values above 25%, 42 more municipalities than in 2021.

This group of 65 municipalities included 33 of the 86 municipalities in the Norte region and 15 of the 16 municipalities in the Algarve, with Aljezur (31.9 %), Albufeira (31.1 %), Vila do Bispo (30.8 %) and Lagos (30.3 %) having the highest rates in the country.

In addition to the municipalities in these two regions, the effort rate with home loans in decile 8 was also higher than 25% in five municipalities in Grande Lisboa (Cascais, Mafra, Lisboa, Sintra and Odivelas), four in Oeste e Vale do Tejo (Salvaterra de Magos, Nazaré, Lourinhã and Sobral de Monte Agraço), four in Centro (Pedrógão Grande, Mêda, Castro Daire and Vagos), three in Península de Setúbal (Sesimbra, Seixal and Almada) and the municipality of São Vicente in the Região Autónoma da Madeira.

Beiras e Serra da Estrela was the sub-region with the highest range in decile 8 of the effort rate with permanent home loans between municipalities (8.8 p.p.): Mêda recorded the highest value (26.6 %) and Manteigas (17.8%) the lowest.

Figure 5. Decile 8 of the effort rate with permanent home loans, Portugal, NUTS 3 and municipality, December 2022



2. Effort rates with permanent home loans and sociodemographic characteristics of borrowers and contracts

The following figures display, for the country and for the nine NUTS 2 regions, the distribution of the number of borrowers and the median effort rates with permanent home loans according to the decile of gross reported income less personal income paid tax to which the borrower belongs in the distribution by taxable person of the Income Statistics at the local level for the year 2022.

It can be observed, both for the country and for all NUTS 2, that the median effort rate with home loans decreases as the borrower's income decile increases: from 45.3% in decile 1 to 9.9% in decile 10 for the country. In general, there is also a progressive increase in the number of borrowers as the income decile rises. In Portugal, around 50% of borrowers belonged to income decile 8 or above, i.e. they had annual net tax income of more than 17 942 €.

Figure 6. Distribution of borrowers and median effort rate with permanent home loans by decile of gross reported income less personal income tax paid, Portugal, December 2022

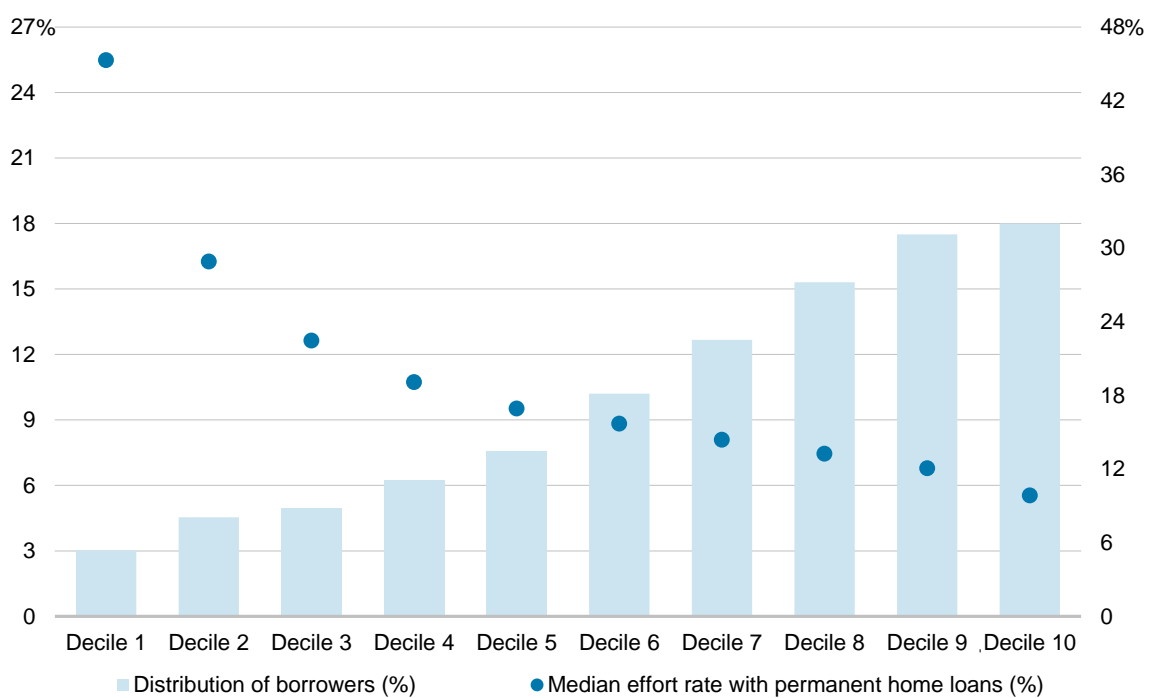
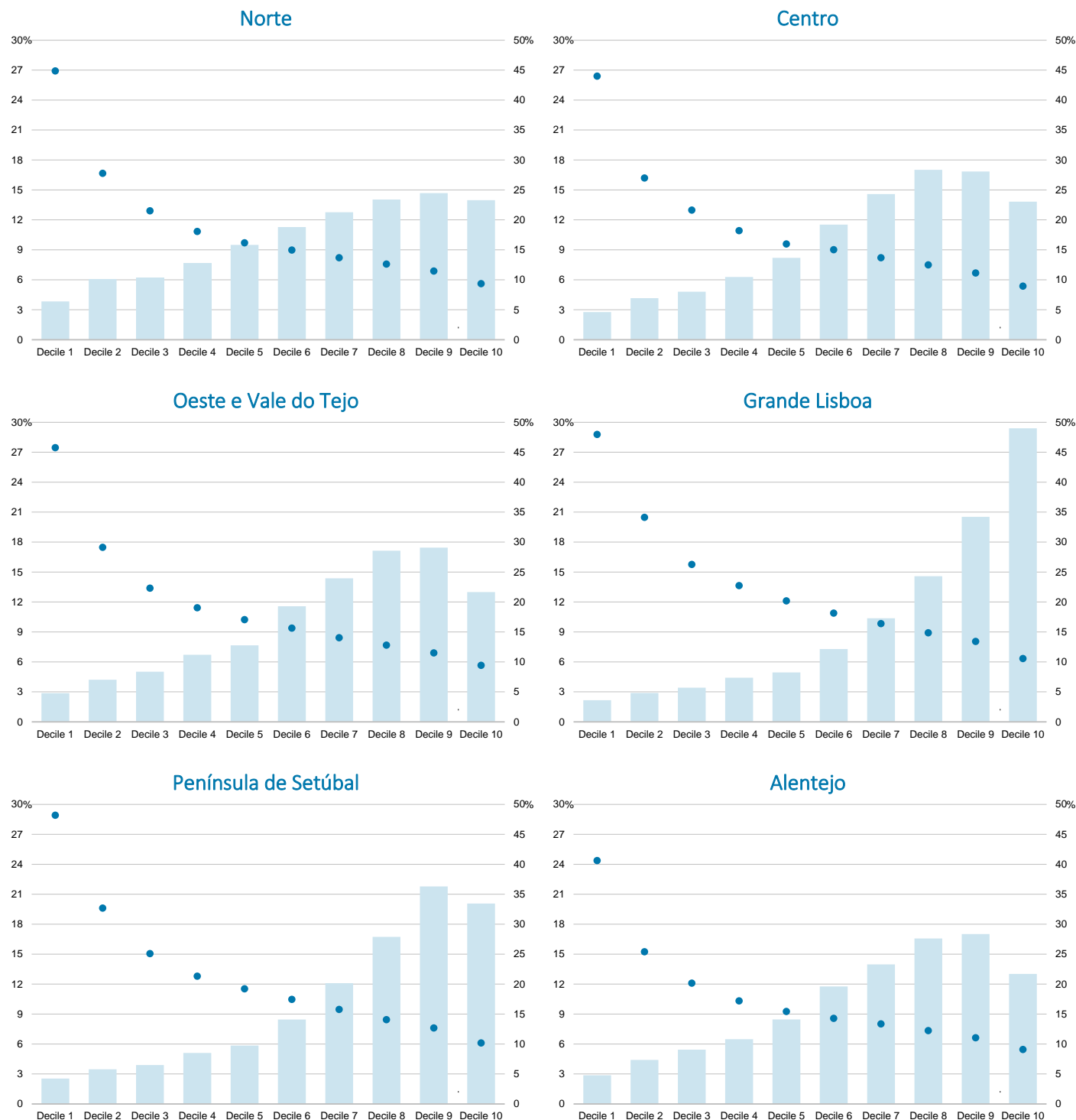
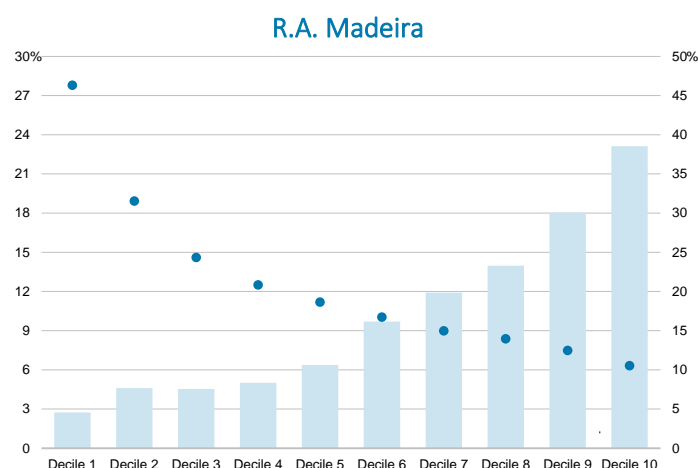
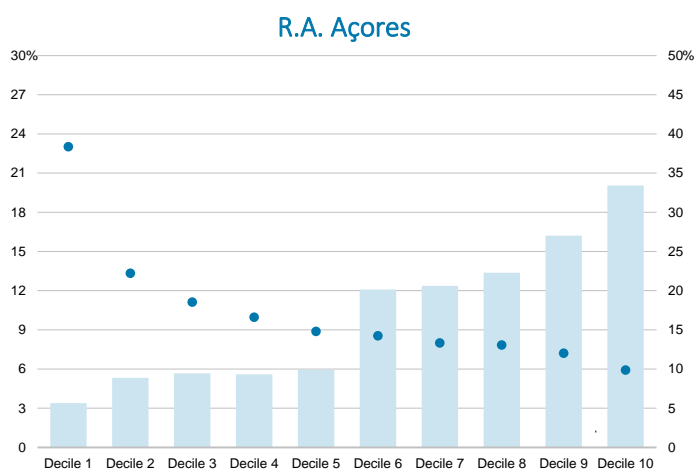
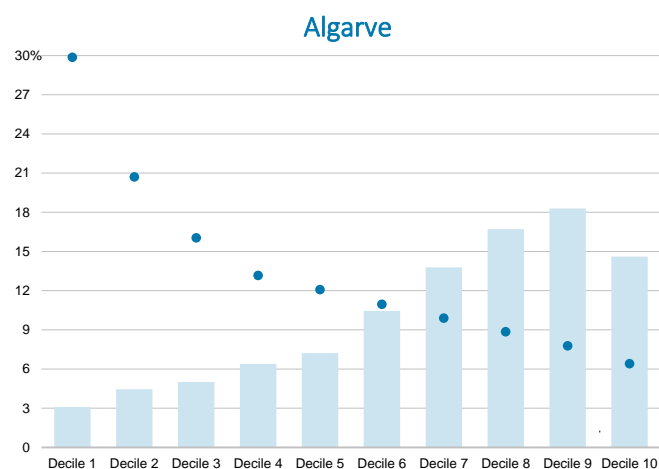


Figure 7. Distribution of borrowers and median effort rate with permanent home loans by decile of gross reported income less personal income tax paid, NUTS 2, December 2022





Deciles	Values (€)
1	4 550
2	6 486
3	8 231
4	9 706
5	10 679
6	12 270
7	14 497
8	17 942
9	24 227

Note: The values of gross reported income less personal income tax paid deciles are based on the distribution for the country.

In 2022, 11.4% of borrowers were up to 34 years old, 84.0% were aged between 35 and 64 and 4.6% were aged 65 or over. At sub-regional level, the proportion of younger borrowers (up to 34 years old) ranged from 8.4% in the Douro to 12.8% in Ave.

The median effort rate with permanent home loans was higher for borrowers up to 34 years old (17.2%) compared to borrowers aged 35 to 64 (14.2 %) and borrowers aged 65 or over (13.3 %). In all 26 NUTS 3 sub-regions, younger borrowers (up to 34 years old) had higher effort rates compared to borrowers in the other age groups.

In 2022, the Algarve had the greatest difference in the median value of the effort rate with permanent home loans between age groups (7.0 p.p.): the highest value was in the group up to 34 years old (20.8%) and the lowest in the 65 and over age group (13.8%).

Considering borrowers up to 34 years old, 10 of the country's 26 NUTS 3 sub-regions had median effort rates higher than the national value (17.2%). Of these, the Algarve (20.8%), Alto Tâmega e Barroso (18.9%), Região Autónoma da Madeira (18.7%), Grande Lisboa (18.3%) and Alto Minho (18.1%) stood out with values above 18.0%.

In 2022, the median effort rate with permanent home loans for borrowers aged up to 34 increased by 3.0 p.p. compared to the previous year. This trend was observed in the country's 26 NUTS III, with the Península de Setúbal recording the highest increase compared to 2021 (3.5 p.p.).

Figure 8. Median effort rate with permanent home loans by age group, Portugal and NUTS 3, December 2022

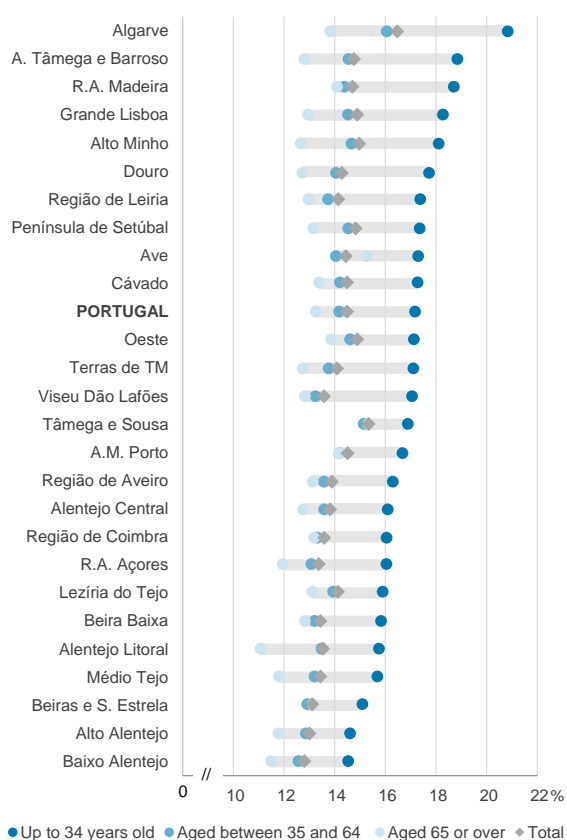
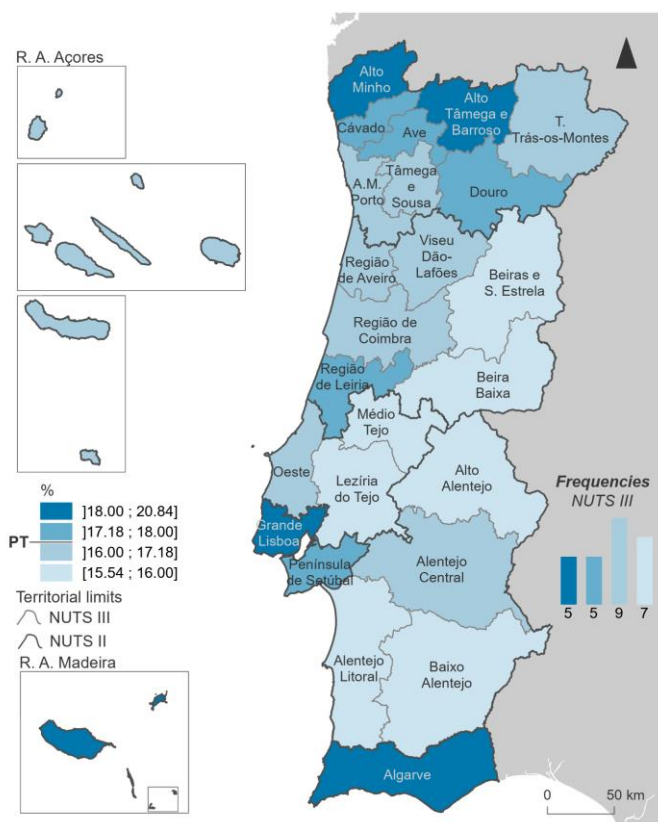


Figure 9. Median effort rate with permanent home loans for borrowers up to 34 years old, NUTS 3, December 2022



In order to analyse potential situations of greater vulnerability with the weight of housing loan instalments on the income of borrowers belonging to the youngest age group (up to 34 years old), the following figures represent the effort rates of borrowers in this age group who belonged to the first half (deciles 1 to 5) of the distribution of gross reported income less personal income tax paid (up to 10 679 € per year, i.e. up to 890 € per month)².

In all the NUTS 3 sub-regions, the median effort rate with permanent home loans was higher for borrowers up to 34 years old in deciles 1 to 5 of gross reported income less personal income tax paid than for all borrowers in this age group, with Grande Lisboa having the greatest difference (14.6 p.p.) and Alto Alentejo the lowest (3.0 p.p.).

In 2022, the median effort rate with permanent home loans for borrowers up to 34 years old in the first half of the net income distribution was 25.9% at national level, an increase compared to 2021 when the value was 19.4%. In two sub-regions, the instalments on permanent home loans, in 2022, exceeded 30% of the income: Grande Lisboa (32.8%) and Algarve (31.0%).

² The variable that identifies the income decile to which each taxable person belongs was based on the distribution of gross reported income less personal income tax paid from the income statistics at the local level for Portugal for the year 2022. The value 10 679 € corresponds to the median value of the gross reported income less personal income tax paid, considering all taxable persons and not just those in the youngest age group (up to 34 years old).

Figure 10. Median effort rate with permanent home loans for borrowers up to 34 years old and for these borrowers in deciles 1 to 5 of gross reported income less personal income tax paid, NUTS 3, December 2022

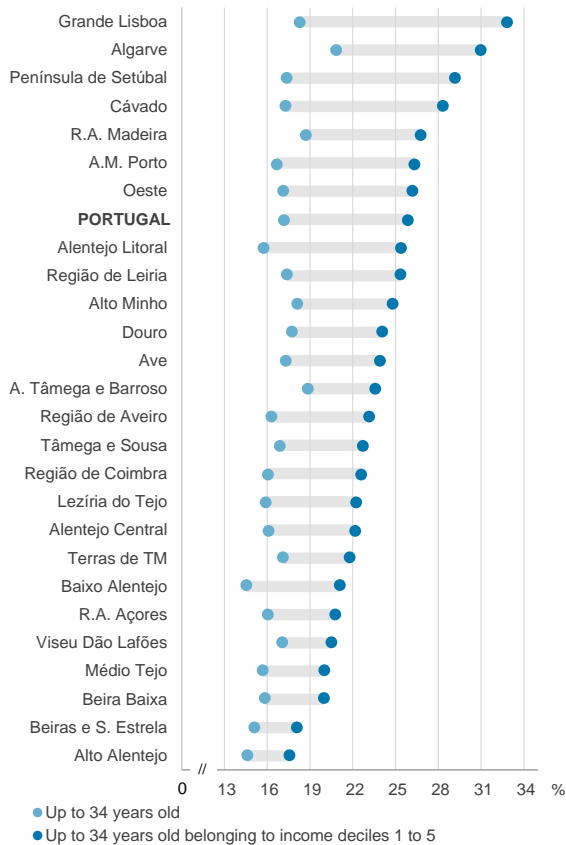
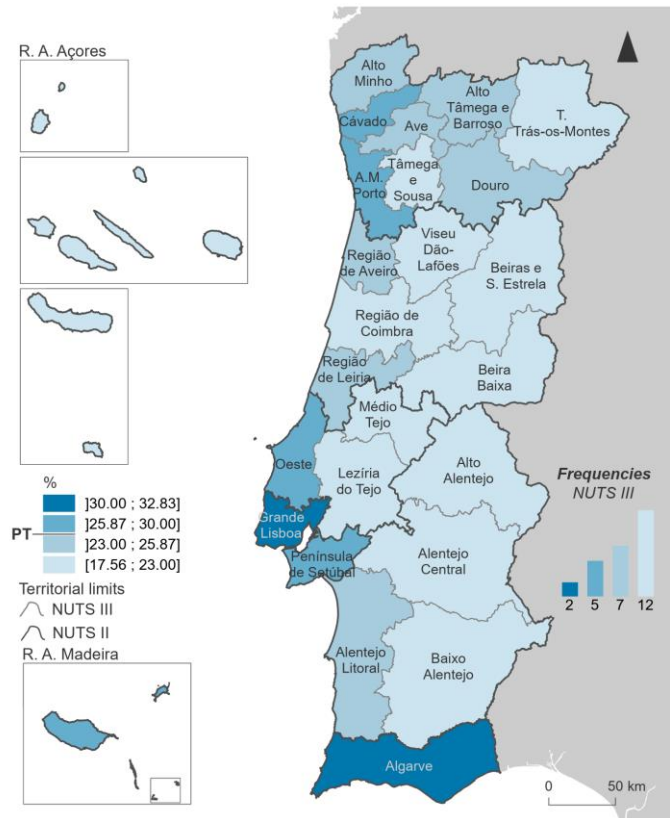


Figure 11. Median effort rate with permanent home loans for borrowers up to 34 years old in deciles 1 to 5 of gross reported income less personal income tax paid, NUTS 3, December 2022



In 2022, 23.7% of borrowers aged up to 34 had at least one mortgage contract signed that year.

The median effort rate with permanent home loans for borrowers aged up to 34 with at least one contract signed in 2022 was higher than the effort rate for all borrowers in this age group (19.0% and 17.2%, respectively). This pattern was common to all the country's NUTS III regions, with the Península de Setúbal recording the greatest difference (2.5 p.p.) between the median effort rate for younger borrowers with at least one mortgage contract signed in the year and the effort rate for all borrowers in this age group (19.8% and 17.4%, respectively). In addition to the Peninsula of Setúbal, Grande Lisboa, Alto Tâmega and Barroso (both with 2.3 p.p.) and the Área Metropolitana do Porto (2.1 p.p.) also recorded differences of more than 2 p.p.

In 2022, the sub-regions of the Algarve (22.3 %), Alto Tâmega e Barroso (21.1 %), Grande Lisboa (20.6 %) and the Região Autónoma da Madeira (20.2 %) stood out for having housing effort rates for borrowers aged up to 34 with credit agreements signed in the year of more than 20 %.

Figure 12. Median value of the effort rate with permanent home loans for borrowers up to 34 years old, total contracts and contracts celebrated in the year, Portugal and NUTS 3, December 2022

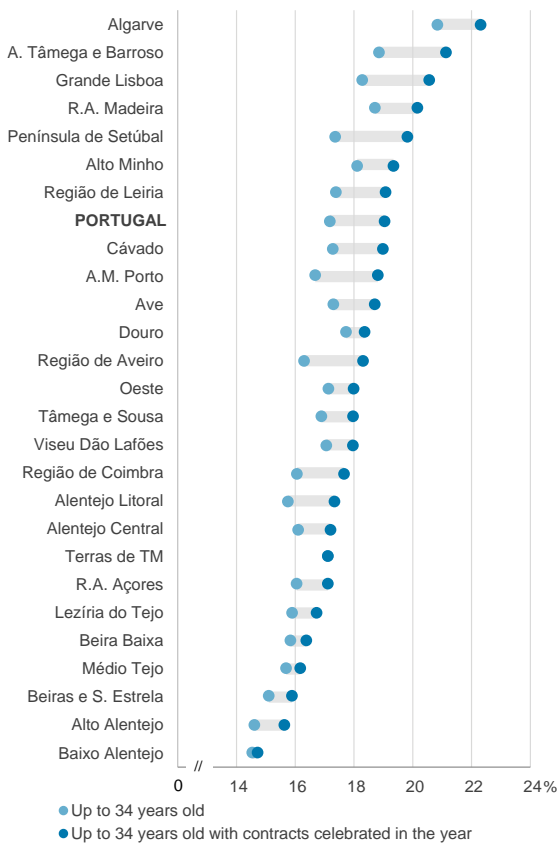
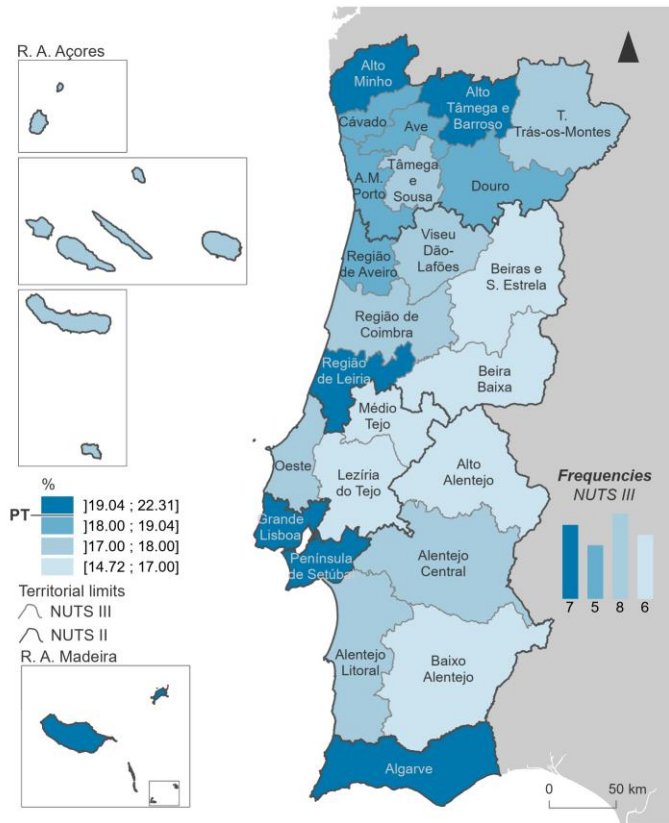


Figure 13. Median effort rate with permanent home loans for borrowers up to 34 years old and with contracts celebrated in the year, NUTS 3, December 2022



In 2022, 24.0% of borrowers had mortgage loans in which they were the single borrower, with this proportion ranging from 12.0% in the Tâmega e Sousa sub-region to 32.2% in Grande Lisboa.

The median effort rate with borrowers with contracts in which they were the single borrower was 17.3%, higher than for those with mortgage credit contracts involving two or more borrowers: 13.8%. This pattern was similar in all the country's NUTS 3 sub-regions, with the Algarve recording the biggest difference (4.3 p.p.) between the median effort rate of borrowers who shared mortgage contracts with at least one other borrower and those who were the single borrower (15.5% and 19.7%, respectively).

Compared to 2021, there was an increase in the median effort rate both for borrowers with contracts where they were the only borrower (2.2 p.p.) and for those who shared contracts with at least one other borrower (1.6 p.p.). At sub-regional level, the Peninsula of Setúbal (2.5 p.p. and 1.9 p.p., respectively) and Grande Lisboa (2.5 p.p. and 1.9 p.p., respectively) registered the largest increases.

In 2022 and considering only borrowers with mortgage contracts involving a single borrower, the median effort rate was higher than the national reference (17.3%) in the Algarve (19.7%), Grande Lisboa (17.9%), Península de Setúbal (17.8%), Tâmega e Sousa (17.6%) and Oeste (17.5%) sub-regions.

Figure 14. Median value of the effort rate with permanent home loans by number of individuals involved in home loans, Portugal and NUTS 3, December 2022

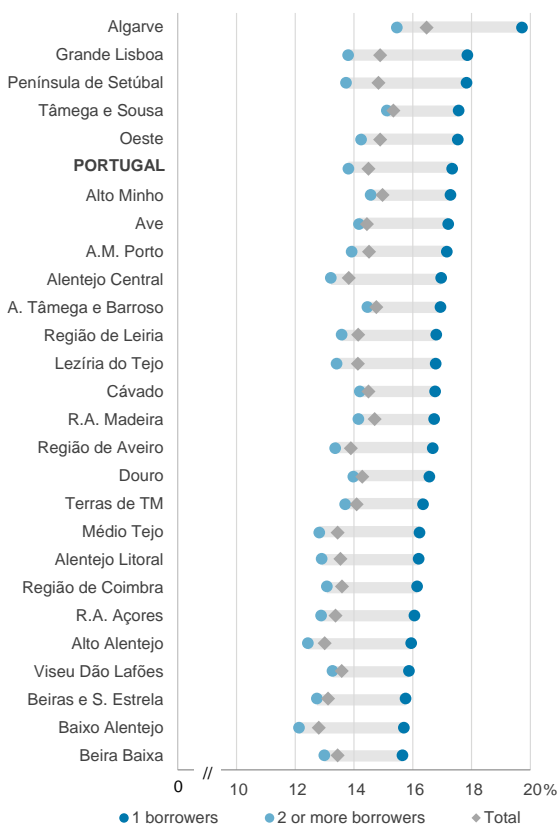
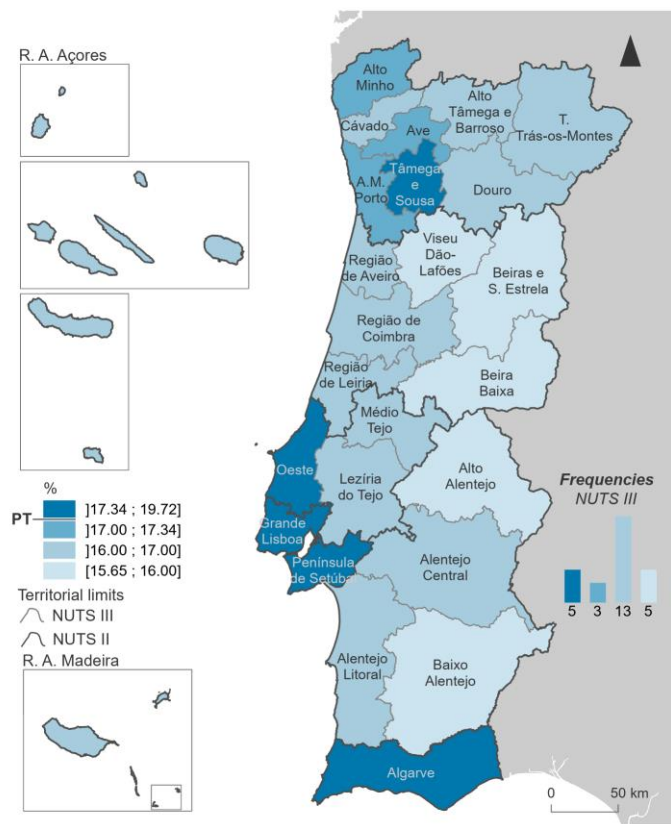


Figure 15. Median effort rate with permanent home loans for borrowers in a single borrower contract, NUTS 3, December 2022



At national level, the median effort rate for borrowers in single-borrower contracts was higher for female borrowers (17.7%) compared to male borrowers (16.9%). This pattern was common to most of the country's NUTS 3 sub-regions, apart from Viseu Dão Lafões, Região Autónoma da Madeira, Alentejo Central and Alto Minho, where male borrowers had effort rates equal to or higher than those of women.

Compared to 2021, there was an increase in the housing effort rates of borrowers in single borrower contracts for both sexes: 2.3 p.p. for women and 2.1 p.p. for men, with Grande Lisboa and Península de Setúbal sub-regions recording higher increases than the country for both women and men.

In 2022, the Algarve was the sub-region with the highest effort rates for borrowers in contracts involving a single borrower for both sexes: 19.8% for female borrowers and 19.6% for male borrowers.

In 2022, the sub-regions of Algarve (19.8%), Península de Setúbal (18.4%), Grande Lisboa (18.2%), Ave (18.0%), Oeste (17.9%) and Tâmega e Sousa (17.8%) stood out for recording higher median values for the effort rate with permanent home loans for female borrowers in single-borrower contracts than the national reference.

Figure 16. Median effort rate with permanent home loans for borrowers in single borrower contracts by gender, Portugal and NUTS 3, December 2022

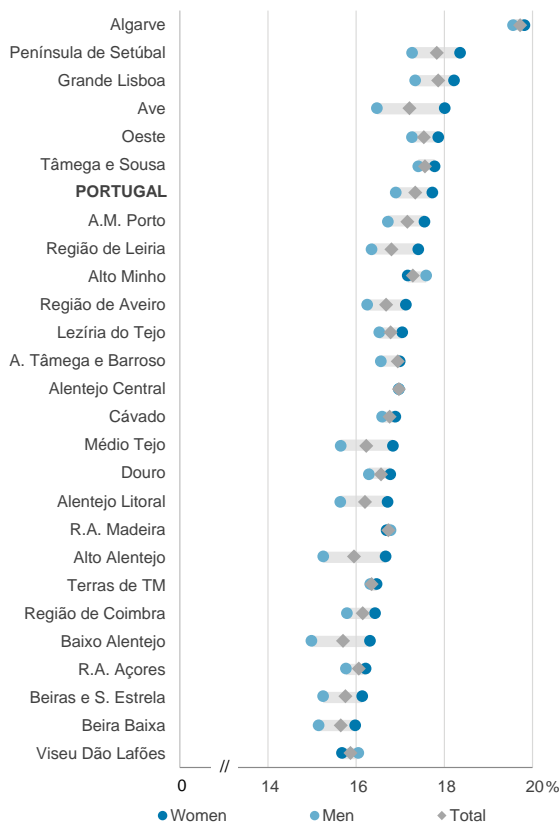
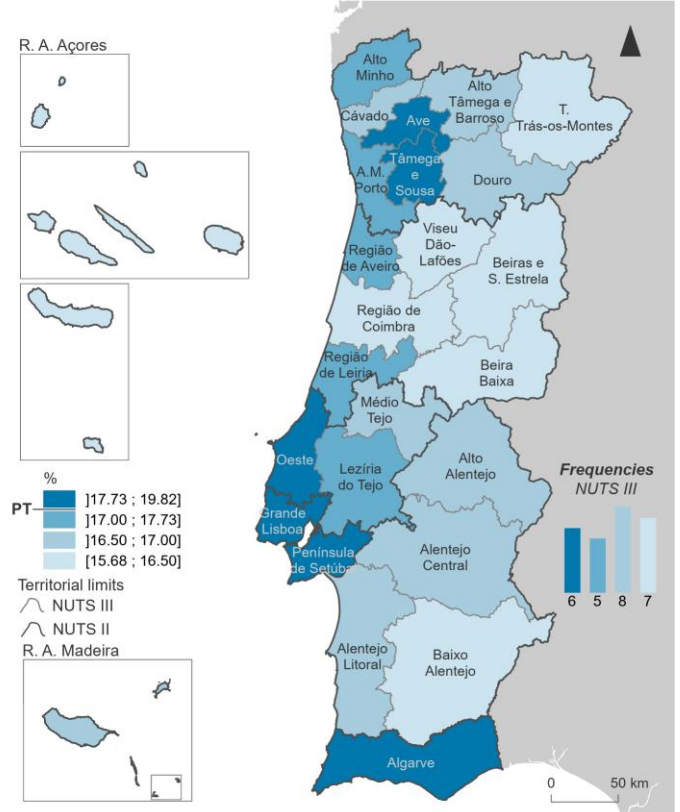


Figure 17. Median value of the effort rate with permanent home loans in contracts with a single female borrower, NUTS 3, December 2022



In Portugal, the median effort rate with permanent home loans for the 6.9% of borrowers with at least one contract signed in 2022 was higher than the effort rate for all borrowers (19.1% and 14.5%, respectively).

Alto Tâmega e Barroso had the greatest disparity (5.8 p.p.) between the median effort rate for borrowers with at least one mortgage contract signed in the year and the effort rate for all borrowers (20.6% and 14.8%, respectively). In addition to this sub-region, Grande Lisboa (5.7 p.p.) and Algarve (5.5 p.p.) also showed differences equal to or greater than 5.5 p.p.

In 2022, six sub-regions had effort rates for borrowers with credit agreements signed in the year higher than the national reference, with Algarve (22.0%), Grande Lisboa (20.6%), Alto Tâmega e Barroso (20.6%) and Península de Setúbal (20.1%) standing out with values above 20%.

Between 2021 and 2022, there was an increase of 3.7 p.p. in the median effort rate of borrowers with at least one mortgage contract signed in the year, with this increase exceeding 4.0 p.p. in the sub-regions of Viseu Dão Lafões, Península de Setúbal, Alto Tâmega e Barroso and Grande Lisboa.

Figure 18. Median effort rate with permanent home loans, total contracts and contracts celebrated in the year, Portugal and NUTS 3, December 2022

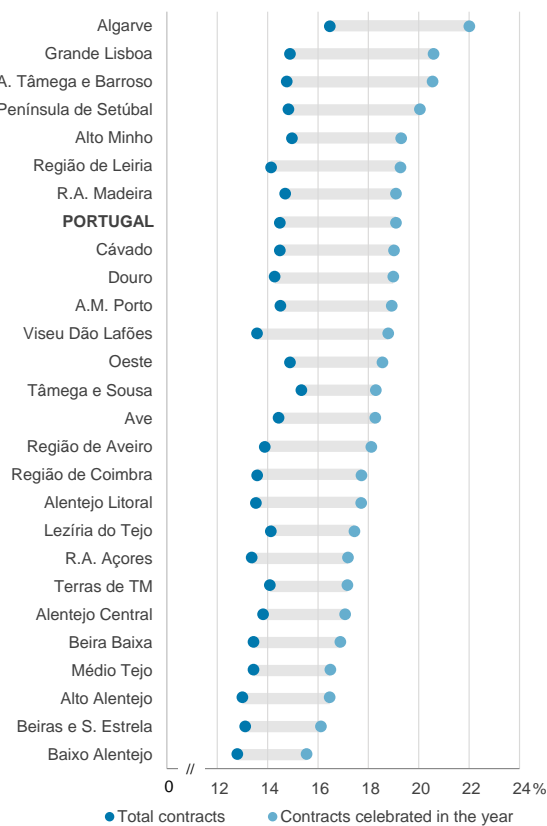
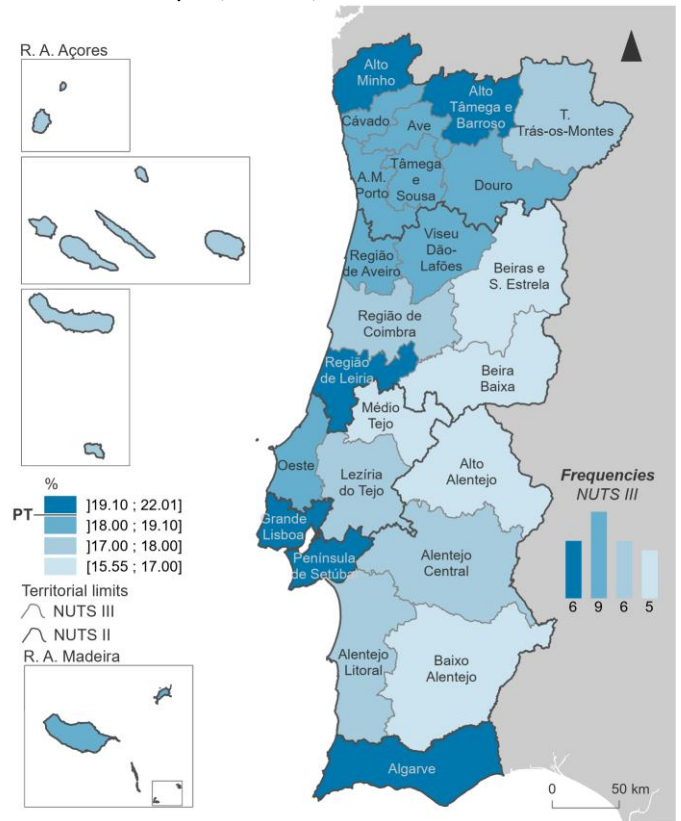


Figure 19. Median effort rate with permanent home loans for borrowers with permanent home loan contracts celebrated in the year, NUTS 3, December 2022



In 2022, the median effort rate with permanent home loans was higher in all NUTS III sub-regions for borrowers with contracts signed in the year belonging to deciles 1 to 5 of gross reported income less personal income tax paid³ in relation to the total number of borrowers with at least one contract signed in the year,

³ The variable that identifies the income decile to which each taxable person belongs was based on the distribution of gross reported income less personal income tax paid from the income statistics at the local level for Portugal for the year 2022.

with Grande Lisboa showing the greatest difference (12.7 p.p.) and Beiras and Serra da Estrela the lowest (2.6 p.p.).

The median effort rate for permanent home loans for borrowers with at least one contract signed in 2022 belonging to the first half of the net income distribution was 26.4 % at national level, with Grande Lisboa (33.3 %), Algarve (32.4 %) and Península de Setúbal (30.3 %) sub-regions standing out with rates above 30 %.

Figure 20. Median effort rate with permanent home loans for borrowers with permanent home loan contracts celebrated in the year and for these borrowers in deciles 1 to 5 of gross reported income less personal income tax paid, Portugal and NUTS 3, December 2022

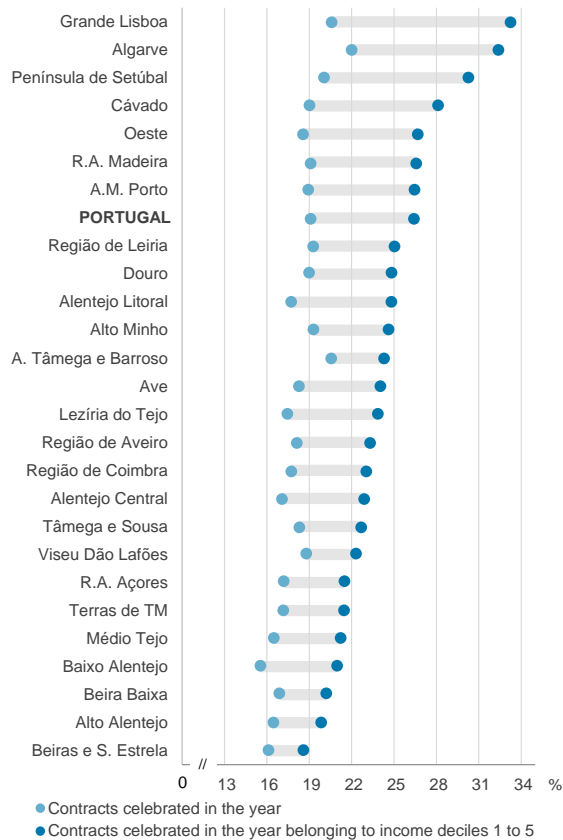
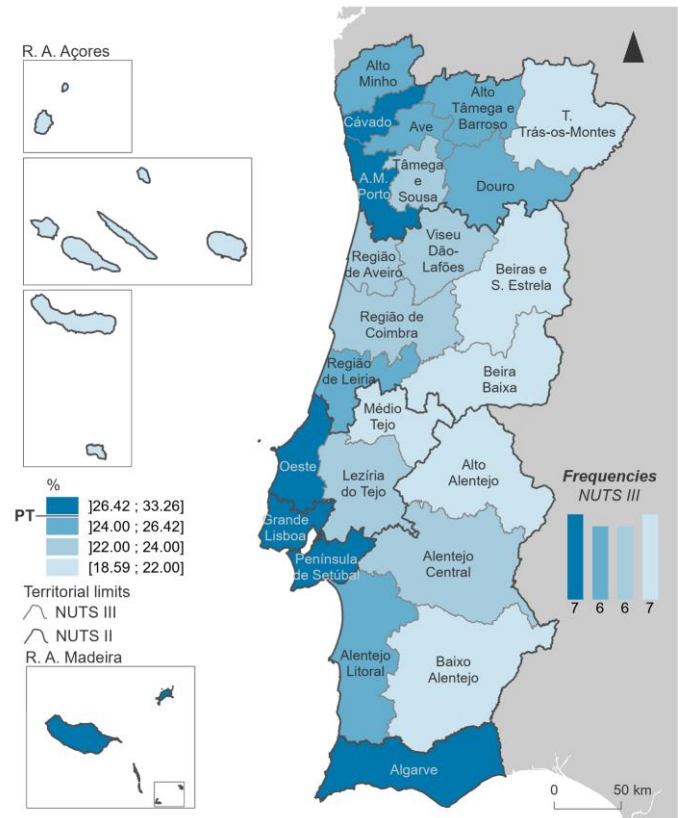


Figure 21. Median effort rate with permanent home loans for borrowers with permanent home loan contracts celebrated in the year in deciles 1 to 5 of gross reported income less personal income tax paid, Portugal and NUTS 3, December 2022



METHODOLOGICAL NOTE

The results presented in this press release benefit from the Collaboration Protocol signed between Statistics Portugal and the National Central Bank (Banco de Portugal – BdP), under which both statistical authorities reciprocally provide databases for the purposes of statistical analysis, in the context of their respective roles in the National Statistical System, established by Law 22/2008, of May 13.

Currently, BdP receives information on credit instalments for the acquisition or construction permanent owner-occupied housing for borrowers with responsibilities to the national financial system and INE receives information on income for tax purposes from Tax and Customs Authority (AT), making it possible to calculate the ratio between these two values, known as the effort rate with permanent home loans (ratio between the amount of the borrower's monthly housing credit instalment and monthly income).

Considering the collaboration conditions established, the process of integrating information from the BdP and INE followed an on-the-fly model - data integration in which data is combined and the results made available in real time or almost instantaneously - resulting in anonymized effort rates (%) according to the structure required by each of the entities, including information for evaluating the integration process. In this context, the pre-processing processes were carried out by each of the entities on the respective data provided.

Basic information for integration

Information on monthly credit instalments of permanent home loans

In this statistical study, the value of monthly credit instalment for permanent home loans referring to credit agreements for the acquisition or construction permanent owner-occupied housing celebrated with financial institutions operating in Portugal, with a mortgage debt amount equal to or less than 300 000 euros⁴, without default and with a variable interest rate, whose source is the Central Credit Register, were considered for integration purpose.

The information provided to INE by BdP for integration was structured by 'encrypted identifier of the borrower' and 'anonymized identifier of the respective permanent home loan', including the variables 'year in which the contract was celebrated' and 'amount of the monthly credit instalment of permanent home loan'. Contracts involving at least one borrower without a Portuguese tax identification number were excluded from the initial base.

The value of each borrower's housing instalment results from the sum of their share of the housing instalment value of the various contracts in which they are involved.

The information used refers to contracts in force on 31 December 2022, involving 1 886 465 single borrowers.

⁴ This value follows the aim established in point 1. from Article 2 of Decree-Law no. 80-A/2022, of November 25, which establishes measures to mitigate the effects of the increase in the reference indexes of credit agreements for the acquisition or construction permanent owner-occupied housing.

Information on income

For the purpose of integration, this statistical study has considered the income information structured for the [Income Statistics at local level 2022](#), based on the Settlement note of Personal Income Tax (IRS – Modelo 3).

In this context, the Income Statistics at the local level microdata base structured by 'taxable person with anonymized identifier' was used, considering the variables 'municipality of residence', 'income decile to which each taxable person belongs' and 'gross reported income less personal income tax paid', the latter derived from the variables:

- Gross Reported Income - Income that corresponds to: 1) the value of the income not exempt, before any specific deduction for categories A (Dependent labour) 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.

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 results per taxable person. This option has considered 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 (see Methodological note on the publication of [Income Statistics at local level](#)).

The variable that identifies the income decile to which each taxable person belongs, is based on the distribution of gross reported income less personal income tax paid, provided in the Income Statistics at local level for Portugal.

The information used refers to income in 2022.

Other sociodemographic information

In this statistical study, the sociodemographic variables 'sex', 'age', 'encrypted identifier of the private household', 'classification of the individual in the household' (taxable persons A and B, spouse, dependent, ascendant, etc.) by 'encrypted identifier of the individual', from the Resident Population Database (BPR) were considered for integration purposes.

The BPR is a project under development at Statistics Portugal and is the framework for compliance with the Regulation of the European Parliament and of the Council on European statistics on population and housing, which is still under discussion.

The information from the BPR for integration included, whenever possible, information for 2022.

Options for integrating different sources

Effort rates' computation

In order to calculate the effort rates with permanent home loans per borrower, income was calculated based on the following conjugality options:

- For the borrower who choose to fill its personal income tax return jointly, the value of the combined income was taken into account when only one of the individuals was a borrower;
- For the borrower who choose to fill its personal income tax return jointly, the value of the combined income divided by two was taken into account when both individuals were borrowers;
- For the borrower who has opted for separate taxation, where a conjugal situation is implied, the spouse's income value was also taken into account when only one of the individuals was a borrower;
- For the borrower who has opted for separate taxation, where a conjugal situation is implied, its income value and the income value of its spouse were considered, divided by two, whenever both individuals are borrowers.

In cases where it was not possible to associate income information with borrowers and their spouses (where applicable), no effort rates with permanent home loans were calculated. For dependents and ascendants who are borrowers, the income considered for calculating the effort rate was the income of the taxable persons in the household divided by the number of elements involved (*i.e.* borrowers and taxable persons with income).

The annual values of the gross reported income less personal income tax paid were measured by dividing by 12 months⁵.

Spatial referencing of borrowers

For the referencing of borrowers to the municipality of residence, the municipality of residence variable was taken from the taxable persons microdata base from the Income Statistics at the local level combined, when necessary, with the private household variable from the Resident Population Base.

Outliers removal

Based on the distribution of the effort rate with permanent home loan variable for the universe of single borrowers with valid effort rates (with values), outliers were identified according to the following formula: $1^{st}Q - 6 * IQR$ and $3^{rd}Q + 6 * IQR$. Where $1^{st}Q$ is the first quartile, $3^{rd}Q$ the third quartile and IQR the inter-quartile range ($3^{rd}Q - 1^{st}Q$). This option only led to the elimination of observations at the upper end of the distribution.

⁵ Measuring income values over 12 months was based on the criteria defined in item i) of point 3., from Article 3 of Decree-Law no. 80-A/2022, of November 25, which establishes measures to mitigate the effects of the increase in the reference indexes of credit agreements for the acquisition or construction permanent owner-occupied housing.

Reference base and computation of effort rates with permanent home loans

The target population for effort rates with permanent home loans are borrower's resident in Portugal with credit agreements for the acquisition or construction permanent owner-occupied housing of up to 300 000 euros, with variable interest rates, celebrated with financial institutions operating in the country.

The options for integrating and processing the information generated a database representing 86.8% of the universe of unique borrowers based on the information provided by the National Central Bank (1 638 064 borrowers).

In the results presented, the median (the value that separates the ordered set of effort rates with permanent home loans into two equal parts) is the reference statistic for analysing the diversity of borrowers' effort rates in the different territories. In addition, the values of the deciles (values that divide the ordered distribution of effort rates with permanent home loans into 10 equal parts) are presented for interpreting the different situations of borrowers in each territorial unit, making it possible to identify situations in which borrowers are more vulnerable.

The calculation of median values of effort rates according to the sociodemographic variables used to characterize borrowers - income level, gender and age group - and the variables relating to the characterization of contracts - number of borrowers involved and year of the contract - allow to delve deeper into the conditions of accessibility to permanent housing.

INDICATORS AVAILABLE AT STATISTICS PORTUGAL OFFICIAL WEBSITE

The results presented are available at www.ine.pt, in Thematic folders – Municipalities – Asymmetry indicators at local and interregional level.

[Effort rate with permanent home loans \(%\) by Geographic localization \(NUTS - 2024\) and Quartiles; Annual](#)

[Effort rate with permanent home loans \(%\) by Geographic localization \(NUTS - 2024\), Age group and Quartiles; Annual](#)

[Effort rate with permanent home loans \(%\) by Geographic localization \(NUTS - 2024\), Sex, Size class of number of persons involved in home loans and Quartiles; Annual](#)

[Effort rate with permanent home loans for borrowers with permanent home loan contracts celebrated in the year \(%\) by Geographic localization \(NUTS - 2024\) and Quartiles; Annual](#)