# Methodological Note on Distributional Wealth Accounts (DWA) for Households

## 1. Introduction

Recent economic developments have increased the demand for more timely, coherent, and consistent distributional information on the household sector. This is not only useful for monetary policy analysis by central banks but also supports a wide range of additional economic analyses and studies. The new data presented in this note support the ECB's monetary policy strategy, which aims to include a systematic assessment of the two-way interaction between income and wealth distribution and monetary policy.

These new requirements are also reflected in the G20's Data Gap Initiative (DGI), which encourages the production and dissemination of distributional information on income, consumption, savings and wealth in the household sector. The OECD has been mandated to coordinate this work in close cooperation with the European Central Bank (ECB) and Eurostat. In 2022 the G20 agreed to launch the third phase of the DGI (DGI-3), which includes two recommendations related to household distributional data: Recommendation 8 focuses on income and consumption, while Recommendation 9 refers to household wealth.

The national accounts of the Spanish economy (financial accounts and non-financial assets) are compiled in accordance with the methodology set out in Regulation (EU) 549/2013 on the European system of national and regional accounts (ESA 2010),[1] with quarterly time series and a lag of approximately 102 calendar days for financial accounts and 21 months for annual data on non-financial assets relative to the reference period.

Meanwhile, the Household Finance and Consumption Survey (HFCS),[2] coordinated by the ECB and compiled by national central banks, provides detailed information on the distribution of wealth among households. These data have been published every three years since 2011, with a lag of about 18 months from the reference year.

Both sources differ in terms of methodology and frequency. The HFCS collects self-assessed wealth data from a representative sample of the household population and provides results on the distribution of household wealth at a given point in time. By contrast,

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[1] Regulation (EU) No 549/2013 of the European Parliament and of the Council of 21 May 2013 on the European system of national and regional accounts in the European Union.

[2] A harmonised survey at the European level, coordinated by the ECB, which in the case of Spain is based on microdata from the Spanish Survey of Household Finances (EFF, by its Spanish initials) conducted by the Banco de España. More information is available at:
https://www.ecb.europa.eu/stats/ecb_surveys/hfcs/html/index.en.html.

national accounts provide time series for all assets and liabilities of the corresponding economic sector, with the highest possible frequency, following the methodological framework of national accounting.

The Distributional Wealth Accounts (DWA) aim to reconcile information from these two datasets to provide statistics on the distribution of wealth, as measured in national accounts, across different household groups. The methodology has been developed by the ESCB and the data are the result of a collaborative effort between the DG Economics and the DG Strategy, People and Data at the Banco de España.

This methodological note summarises the DWA methodology previously published by the ECB (here), with particular attention to the specificities applicable to the Spanish case. See the work by L. Cobreros, et al. (2023) for an alternative analysis on distributional accounts.

## 2. General description of the DWA methodology

The results of the DWA are fully consistent with national accounts. The breakdown of net wealth and its components by household group is achieved using information from the HFCS along with certain additional estimates.

To attain these objectives, it is essential to understand the conceptual, coverage and design differences between the two statistical sources.

- The HFCS is the harmonised European household finance survey, which incorporates information for Spain based on data from the Spanish Survey of Household Finances (EFF, by its Spanish initials). The EFF collects households' reported valuations of various assets and liabilities through a personal survey method applied to a representative sample of households, with oversampling of the upper wealth strata.[3]

- Regarding national accounts, particularly non-financial assets and financial accounts for the household sector, these are constructed using administrative data, statistical information, and counterpart data provided by financial institutions, insurance companies and other institutional sources.[4]

The economic aggregates derived from the two data sources may differ, and in most cases, national accounts figures tend to be higher.

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[3] For more information on the EFF methodology, see Alvargonzález et al. (2024).

[4] For more information on the methodology used in compiling the financial accounts, see "Financial Accounts of the Spanish Economy. Methodological Note" published by the Banco de España. For non-financial assets, see the "Methodological Note on Balance Sheets for Non-Financial Assets" published by the National Statistics Institute (INE), available in Spanish only.

The following sections discuss the main differences. For a detailed analysis comparing the EFF and macroeconomic aggregates, see [Bover et al. (2004)](#). As previously mentioned, this note focuses on the methodological aspects related to the production of the DWA for Spain.

## 2.1. Differences in the definition of household

The two data sources use slightly different definitions of the concept of household.

- The target population of the EFF consists of private households in Spain, defined as a person living alone or a group of people living together in the same private dwelling and sharing expenses and financial decisions. Individuals residing in collective institutions, such as prisons or care homes, are excluded. Additionally, non-resident individuals may be part of a resident household if they are temporarily absent, provided they meet the other criteria.

- In national accounts, the household sector includes all individuals or groups of individuals acting as consumers or entrepreneurs, provided that their production is not carried out through separate entities classified as quasi-corporations (ESA 2010, 2.118). According to ESA 2010, the economic unit is considered resident in the economic territory with which it has the strongest connection.

The distinction between a producer household (classified within the household sector) and quasi-corporations and corporations (classified within the non-financial corporations' sector) in financial accounts leads to differences in the classification of assets and liabilities associated with household business activity between the HFCS and financial accounts.

In general, as some groups are excluded from the HFCS target population, population coverage by the HFCS tends to be slightly lower than in the national accounts. Therefore, before comparing wealth aggregates between the two sources, a proportional adjustment is applied to align the target population size. This adjustment has a marginal impact, as discussed in section 3.5 of this note.

## 2.2. Coverage of instruments and classification

The two statistics differ in the coverage and treatment of economic and financial concepts. Currently, the DWA limits its coverage to those instruments for which a conceptual comparability between both statistics has been established. This exercise is complex and has required the development of an interdisciplinary line of work between national accounts experts and EFF microdata experts.

However, these are experimental statistics and work is ongoing to progressively expand the set of concepts included in order to provide a more comprehensive picture of household wealth.

## 2.3. Valuation methods

There are differences in the valuation criteria applied between the two sources. For a detailed comparison of valuation methodologies, see Bover et al. (2024).

- The EFF asks about the current value of each type of asset and liability, and these values are reported directly by the respondents. The data may be affected by sampling variance, non-response bias and reporting bias. For the Spanish data collected by the EFF, population weighting factors are applied to adjust for sampling variance and non-response. Additionally, by oversampling the wealthiest households, the survey reduces the issue of higher non-response rates within this group. Lastly, to mitigate the issue of non-response to certain questions among survey participants, a multiple imputation methodology is applied, following the same techniques used in the U.S. Survey of Consumer Finances (SCF). For more details on this methodology, see Bover (2004) and Barceló (2006). The EFF provides detailed information on how wealth and debts are distributed among families in Spain and across different types of assets and liabilities.

- National accounts for the household sector are constructed using administrative information and counterparty data provided by financial institutions, insurance companies and other institutional sources. They are subject to two types of compilation issues: primary sources may follow concepts that differ from those used in national accounts, which can create a gap between primary statistics and national accounts, or alternatively, there may be some measurement errors in the primary source. Although counterparty information is considered to be of very high quality, there can be difficulties in assigning units to the correct sector. For example, errors may occur in the sector classification reported by financial institutions. Moreover, measurement problems become more significant when there are incomplete or low-frequency data sources. This particularly affects household equity holdings other than listed shares and non-financial assets (land). Lastly, some adjustments may be necessary in the household sector to correct any horizontal discrepancy that may arise in the compilation of financial accounts, i.e. when the sum of assets across all sectors does not equal the sum of all liabilities. In some cases, the household sector is used as a residual sector because, for certain instruments, the data available for this sector are less reliable or of lower quality than for other sectors.

- In national accounts, as a general rule, financial positions are valued in the balance sheets at current prices, which is either their nominal value or, in the case of instruments traded on markets, their market value. For assets with quoted market prices, such as listed shares and debt securities, valuation is straightforward. However, for unlisted shares and other equity holdings in other corporations, the use of models and assumptions is required. On the other hand, non-financial assets – especially the produced capital stock (such as dwellings) – are based on the

Perpetual Inventory Method (PIM), except for the value of land underlying dwellings, which is estimated as the difference between the combined value of the construction and the underlying land less the value of the net dwelling stock (AN.111)[5].

# 3. Definition of wealth used in the DWA

Household net wealth is defined as the difference between households' total assets (financial and non-financial) and total liabilities. The DWA focus on an adjusted concept of wealth, which excludes national accounts instruments for which sufficient comparability with HFCS microdata has not been achieved. The definition of wealth used in the DWA is harmonised across euro area countries.

**Assets included:**

- Deposits

- Debt securities

- Shares and other equity

- Investment fund shares or units

- Life insurance reserves and annuities

- Housing wealth

- Business wealth

**Liabilities included:**

- Mortgage loans

- Other debts

This subset of instruments represents approximately 90% of the assets and liabilities of the household sector in the national accounts.

The reconciliation between macroeconomic and microeconomic statistics is carried out in several stages, which are described in the following sections, along with the different definitions of wealth included in the DWA.[6]

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[6] For further details on the correspondence between national accounts instruments and HFCS variables, see Annex 2a of "Understanding household wealth: linking macro and micro data to produce distributional financial accounts".

## 3.1. Business wealth

Within the DWA framework, business wealth refers to the set of financial and non-financial assets used by households for productive purposes. This concept includes both direct ownership of business assets and indirect participation in productive activities through financial instruments.

In the HFCS, two types of business wealth are recorded separately:

- Business wealth related to self-employment, which are businesses in which a household member actively works or participates in management. These businesses can be sole proprietorships, independent professionals, partnerships or limited liability companies in which household members participate actively.

- Business wealth with no active participation, which refers solely to passive investment in firms without involvement in their management or operations.

In national accounts, there is no concept of business wealth comparable to that of the HFCS. If a household owns a business, its wealth may be recorded in the following ways:

- As the value of a corporation or quasi-corporation: Business assets are recorded as unlisted shares or other equity.

- As part of the assets and liabilities of a producer household: If the business is not recognised as a separate entity from the household itself, its assets are grouped within the national accounts under the household sector and cannot be distinguished from other household assets or debts. Moreover, national accounts record this wealth in gross terms, while the HFCS reports it in net terms (i.e., assets less liabilities).

To maximise comparability between both statistics, the first step is to identify the self-employed business assets in the HFCS that correspond to unlisted shares and other equity in the financial accounts. This is done in two stages.

First, based on the information available in the HFCS, it is assumed that all legal forms other than sole proprietors and partnerships issue unlisted shares (F.512 in the financial accounts) and/or other equity (F.519 in the financial accounts). These entities are legally incorporated companies and are recognised as such in the financial accounts, so their assets and liabilities are recorded in the balance sheets of the non-financial corporations' sector and their net worth is accounted for as unlisted shares or other equity held by the household sector.

Second, non-corporate businesses or those not legally separated from the household, such as sole proprietors and partnerships, are considered part of the household producer unit. For this purpose, a definition of non-financial business wealth is established. Specifically, non-financial business wealth is defined in the HFCS as the sum of the value of non-corporate businesses plus the value of real estate for own professional use, as well as properties such as industrial buildings, plots, shops, offices, hotels and farms. To estimate the corresponding figure in the national accounts, the series from the non-financial asset balance sheets are used, adjusting them to allocate the proportion of the original series that corresponds to the concept indicated and to the household sector, since some series are only available for the combined sector households and non-profit institutions serving households (NPISH). The following formula is used:

Non-financial business wealth = $a \times$ Fixed assets $- b \times$ Dwellings $+ (1 - c) \times d \times$ Land,

where $a$ is the ratio of household fixed assets to the total for households and NPISH, $b$ is the ratio of household dwellings to the total for households and NPISH, $c$ is the ratio of land under dwellings to total land value and $d$ is the ratio of land owned by households to the total for households and NPISH.[7]

In the case of non-financial business wealth, the difference between the HFCS and national accounts is particularly large. To correct this discrepancy, an approach is applied that "reverses" the subtraction of debts from the business value reported in the HFCS. For this adjustment, it is assumed that two-thirds of the discrepancy in other debts between the two data sources (after adding wealthy households, as detailed in section 3.8 of this note) corresponds to households with non-financial business wealth in the HFCS. That same amount is added to their non-financial business wealth.

Financial business wealth in the HFCS is defined as the value of incorporated businesses plus the residual of the total business value. The counterpart in the financial accounts follows the formula below, with some adjustments to the original financial account series:

Financial business wealth = Unlisted shares $- e \times$ Foreign real estate,

where $e$ is the ratio of foreign residential property owned by households to the total for households and NPISH.[8]

## 3.2. Housing wealth

This information is not directly available in national accounts and is compiled by summing the value of dwellings and the land underlying dwellings, using data published by the National Statistics Institute (INE) in the non-financial asset balance sheets. Additionally, the

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[7] In the current version of the data, the corresponding values for each parameter are as follows: $a$ is 0.93, $b$ is 0.96, $c$ is 0.86, and $d$ is 0.96.
[8] In the current version of the data, e equals 0.85.

ECB applies a series of adjustments to obtain quarterly frequency values, since the original series are published annually. Finally, the value of housing wealth is constructed by adjusting the resulting series to assign the proportion of wealth that belongs to households:

Housing wealth = $b \times$ Dwellings + $c \times d \times$ Land + $e \times$ Foreign properties

Based on the HFCS, housing wealth is calculated as the sum of the value of all real estate properties that are not part of business wealth, plus the value of the household's main residence.

## 3.3. Mortgage loans and other debts

Financial accounts do not distinguish between mortgage and non-mortgage debt, as both are included in the total loans received by households. However, this disaggregation is available in the HFCS.

The DWA provide this breakdown of debt – mortgage loans and other debts – by disaggregating household loan liabilities in the financial accounts according to their nature. This classification is derived from the balance sheet statistics of monetary financial institutions (MFIs), which provide this distinction for loans granted to households.

To ensure consistent debt definitions across euro area financial accounts, the following formulas are applied:

Mortgage debt = $k \times$ Total loans

Other debts = $(1 - k) \times$ Total loans

Where $k$ is the ratio of mortgage loans to total loans, calculated using debt information reported by MFIs to the Banco de España, and total loans refer to the outstanding balance according to the financial accounts.

## 3.4. Adjustments to non-financial assets

There are three main reasons why adjustments are made to the original non-financial asset series from national accounts to reconcile them with the HFCS information:

- The ESA 2010 transmission programme only requires data to be reported for the aggregate households and NPISH sector. Therefore, to obtain a separate figure for households, a series of adjustments must be applied.

- The transmission only requires information on the total value of land, without distinguishing between land under dwellings and other types of land. As a result, adjustments are necessary to specifically estimate the value of land underlying dwellings.

- Dwellings owned by households abroad are not recorded as non-financial assets but rather as unlisted shares and other equity in national accounts. Consequently, they are not included in the non-financial asset balance sheet series.

### 3.5. Adjustment to household population

National accounts cover a slightly larger share of the total household population than the HFCS. Therefore, to construct the DWA, the HFCS population is adjusted to match the total according to national accounts by applying a proportional adjustment. This involves rescaling the household weighting factors by a constant factor equal to the ratio of the total population according to national accounts to the weighted sum of households according to the HFCS.

In general, this is a moderate adjustment, which in most countries affects less than 3% of household assets and debts. In the case of Spain, the adjustment is approximately 0.8% (see Table 1).

### 3.6. Adjustment for wealth in managed accounts

The concept of managed accounts is included in the HFCS but is not separately identified in national accounts. Conceptually, it can be associated with a broad set of financial assets managed within a single portfolio and may include investment funds, shares, bonds and even life insurance and savings plans.

The DWA apply an adjustment to distribute the wealth reported under the concept of managed accounts across different financial instruments in national accounts.

In a first step, the quantitative gap between the total value of investment funds and non-occupational pension plans/life insurance in both sources is calculated. The value of managed accounts is then allocated proportionally based on the share of each type of financial instrument in that gap. If there is a remaining amount to be distributed, it is allocated among bonds and listed shares using the previously described methodology. If a residual still remains, it is evenly distributed among investment funds, non-occupational pension plans/life insurance, bonds and listed shares.

This adjustment has been implemented and generally has a limited impact on aggregate results. For Spain, the adjustment to net wealth is 0.8%, as shown in Table 1.

### 3.7. Correction in Deposit Reporting

The ratio of deposit values reported in the HFCS compared to those in the financial accounts is approximately 40%. This discrepancy may be due to several factors:

- Respondents' possible reluctance to provide accurate information during interviews.

- Lack of knowledge about the exact amount of their deposits (especially if spread across multiple accounts).

- Differences in reference dates between the financial accounts and the HFCS, which may particularly affect low-value deposits.

To align deposit data between the HFCS and the financial accounts, several assumptions are made to adjust the HFCS values:

1. Deposits should not be significantly lower than the household's monthly income.[9]

2. Households are assumed to hold at least a small portion of their wealth in deposits.

3. The third assumption applies specifically to self-employed individuals. In the HFCS, business wealth is reported as net value, i.e. total assets minus debts related to business activity. This may lead self-employed individuals to report low deposit levels due to netting effects. To correct this potential undervaluation, the deposits reported by self-employed households are compared with those of salaried households with similar income levels (±€2,500 per year). If the deposits of a self-employed household are lower than the average of comparable salaried households, they are replaced with that average, under the assumption that managing a business requires at least the same level of liquidity as an average salaried household.

If a household meets multiple adjustment criteria, only the one resulting in the largest adjustment is applied.

## 3.8. Inclusion of wealthy households

To reconcile macroeconomic aggregates with those from the HFCS, an adjustment is made that involves estimating the wealth of the wealthiest individuals to complement the HFCS data, which in some countries appears not to fully capture the top end of the wealth distribution. This issue is less significant in the case of Spain, as the HFCS includes oversampling of households in the top wealth stratum. However, using information from the list of the wealthiest individuals in Spain published by a national newspaper,[10] a group of individuals is identified that may not be part of the wealth distribution derived from the HFCS

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[9] Specifically, households with income above €10,000 and no credit cards are adjusted if they hold less than 10% of their monthly income in deposits. Households with less than 1% of their monthly income in deposits are also adjusted. For the adjustment, the average deposits of households with similar income levels within a range of ±€2,500 are used.

[10] The lists published in 2011, 2014, 2018 and 2021 are used for each HFCS wave. The references are as follows, respectively: José F. Leal, "Los 200 ricos de España" *El Mundo*, December 31, 2011, José F. Leal, "Los 200 ricos de España" *El Mundo*, December 31, 2014, José F. Leal "Los 200 ricos de España" *El Mundo*, January 1, 2018 and José F. Leal "Los 200 ricos de España" *El Mundo*, February 24, 2021.

data.[11] Additionally, if there is a gap between the household wealth observations in the HFCS and those relating to the list of wealthy individuals, synthetic households are generated to fill it. This adjustment is based on four steps: estimating the shape of the wealth distribution of the richest households (usually using a Pareto distribution), defining the wealth brackets to be completed, estimating the net wealth of the added households and calculating their liabilities and portfolio composition.

In the case of Spain, there are practically no wealth brackets to be completed, which is why the adjustments are minimal. As shown in Table 1, the adjustment after step 4 results in a 2.8% variation in aggregate net wealth.

*Table 1 - Impact of the adjustments on net wealth*

| Step | Net wealth |
| --- | --- |
| **Adjusted national accounts aggregates** | 100.0% |
| **HFCS/national accounts ratio** | 71.1% |
| **HFCS/national accounts ratio after real estate and business wealth adjustments** | 74.0% |
| **HFCS/adjusted national accounts ratio** | 74.0% |
| **1. After population adjustment** | 74.8% |
| **2. After managed accounts adjustment** | 75.6% |
| **3. After deposits adjustment** | 76.9% |
| **4. After wealthiest households adjustment** | 79.7% |

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[11] Users should bear in mind that the observations in the list of wealthy individuals are based on individual wealth and not on the household to which that person belongs. This could imply that an individual may belong to a household represented in the survey data, even if the individual's wealth is higher. This is explained by the fact that, when included in the household, the individual shares liabilities with other household members. Furthermore, the methodology may vary across years and the sources are mainly based on the valuation of firms associated with these individuals.

| | |
|---|---|
| **5. After proportional allocation of the remainder** | **100.0%** |

### 3.9. Final proportional allocation

The final stage of the reconciliation process consists of adjusting the values obtained from the HFCS microdata so that the total aggregate matches the totals recorded in the national accounts. To do this, a proportional allocation procedure is used.

This method consists in multiplying the values of each instrument in the microdata by a constant scaling factor that ensures the total sum per instrument exactly matches the value recorded in the national accounts.

The procedure is applied separately to each wealth instrument and to each wave of the survey. Although this technique may slightly alter the shape of the distribution, it has the advantage of being easily interpretable and ensures consistency between microeconomic and macroeconomic aggregates. Moreover, while the method does not affect the distribution of each individual instrument, it does modify the distribution of total wealth by altering the composition of each household's wealth.

In the case of synthetic households added to represent the wealthiest, their values are also scaled proportionally to their population weight, so that they contribute to the total without distorting the overall structure observed in the HFCS.

## 4. Production of time series

The DWA aim to provide time series on the distribution of wealth. Since the HFCS is produced every three years, it is necessary to interpolate data between waves. Currently, HFCS data are available for the years 2011, 2014, 2017, and 2020.

The relative stability of HFCS results across different waves supports the assumption that wealth distribution changes gradually. Variations in wealth distribution between two periods may be due to both transactions and revaluations of asset holdings. In both cases, changes in wealth holdings recorded in national accounts also provide relevant information for estimating quarterly DWA. For example, a sharp increase in stock prices will shift the interpolated or extrapolated distribution of net wealth in favour of households that are typically wealthier and own stocks. However, national accounts do not provide information on possible changes in the rates of household participation in specific financial instruments, such as changes in the proportion of asset or liability holders between two periods. Data on such variations can only be obtained from the following HFCS wave.

Quarterly estimates of more precise inequality indicators, such as the Gini coefficient, can be obtained by applying the interpolation and extrapolation method to the full set of microdata.

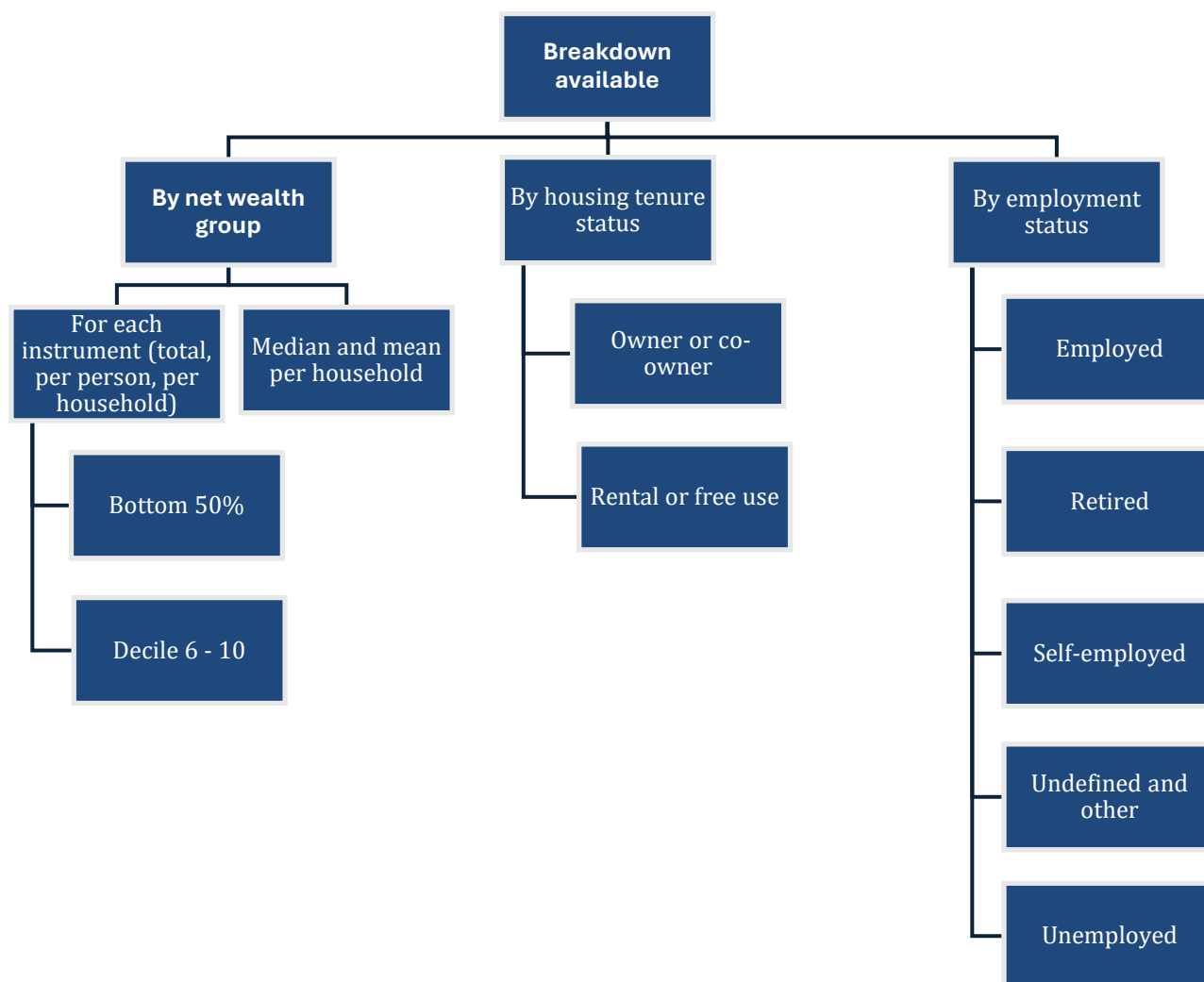Thus, the interpolation process consists of:

- Selecting the reference quarter closest to the HFCS wave.

- Applying adjustments for each intermediate quarter between two HFCS waves using the trends observed in the aggregate data from national accounts.

- Smoothing transitions between waves using statistical techniques. In particular, linear interpolation is applied to population weights under the assumption that the population changes linearly between waves. Therefore, the weight of each household in a given wealth instrument for a specific quarter varies according to the interpolation between waves based on the value it had in the previous wave. Once the interpolated household weight for the wealth instrument is obtained, it is multiplied by the total value of the instrument in the corresponding quarter according to national accounts.

For more technical details, see the ECB's methodological note on DWA [here](#).

This procedure allows for the generation of quarterly distributional series for the main wealth instruments, which are aligned with the changes in macroeconomic magnitudes in national accounts and capture trends in wealth distribution over time.

## 5. Published Data

The breakdown available in the published time series is as follows:

In addition, the DWA also provide information on the following indicators:

- Gini index

- Debt-to-asset ratio by wealth decile

- Share of wealth held by the bottom 50%, the top 10%, and the top 5%

## 6. Sensitivity Analysis of the results

Since the reconciliation process between HFCS data and national accounts requires multiple assumptions, the ECB conducted simulations to assess the variability of results depending on such assumptions. Two sensitivity analysis rounds were carried out:

- Autumn 2021: around 90 scenarios, focused on 12 countries (including Spain).

- November 2023: 19 countries, including Spain, with a reduced set of scenarios.

The types of simulated scenarios were as follows:

1. Exclusive use of HFCS data without adjustments.

2. Proportional allocation of differences between HFCS and national accounts, instrument by instrument.

3. Modifications to the method for including wealthy households (adjustment of the alpha parameter in the Pareto distribution).

4. Adjustments to non-financial business wealth and other debts, under the assumption that business wealth is reported net of liabilities.

5. Assumptions of underreporting of liabilities among the wealthiest deciles.

The results for Spain discussed in this note refer to the November 2023 analysis, which used data from the fourth wave of the HFCS. According to the ECB's sensitivity tables, the results for Spain fall within the expected margins. The Gini coefficient for Spain varies by less than 4% across scenarios, indicating reasonable stability in inequality measurement. In Spain, the share of net wealth attributed to the top decile increases by less than 3 percentage points across scenarios. In some cases, the DWA method results are closer to the proportional allocation than to the original HFCS data. The net wealth of the poorest 50% in Spain remains within a variation range of up to 2.2%, suggesting that the adjustments do not significantly alter the wealth estimates for lower-income households.

# 7. References

- Alvargonzález, P., M. Asensio, C. Barceló, O. Bover, L. Cobreros, L. Crespo, N. El Amrani, S. García-Uribe, C. Gento, M. Gómez, P. Urcelay, E. Villanueva and E. Vozmediano. (2024). "The Spanish Survey of Household Finances (EFF): Description and methods of the 2020 wave". Documentos Ocasionales, 2405, Banco de España. https://doi.org/10.53479/36089
- European Central Bank. (2020). "Understanding household wealth: linking macro and micro data to produce distributional financial accounts". Statistics Paper Series No 37. https://www.ecb.europa.eu/pub/pdf/scpsps/ecb.sps37~433920127f.en.pdf
- European Central Bank. (2024). "Experimental Distributional Wealth Accounts (DWA) for the household sector: Methodological note". European System of Central Banks. https://data.ecb.europa.eu/sites/default/files/2024-01/DWA%20Methodological%20note_0.pdf

- Banco de España. (2024). "Financial Accounts of the Spanish Economy. Methodological Note". https://www.bde.es/webbe/en/estadisticas/compartido/docs/resumenmet_en.pdf

- Barceló, C. (2006). "Imputation of the 2002 wave of the Spanish Survey of Household Finances (EFF)". Documentos Ocasionales, 0603, Banco de España. https://repositorio.bde.es/handle/123456789/6313

- Bover, O. (2004). "The Spanish survey of household finances (EFF): description and methods of the 2002 wave". Documentos Ocasionales, 0409, Banco de España. https://repositorio.bde.es/handle/123456789/6302

- Bover, O., L. Crespo, S. García-Uribe, M. Gómez-García, P. Urcelay and P. Velilla. (2024). "Micro and macro data on household wealth, income and expenditure: comparing the Spanish Survey of Household Finances (EFF) to other statistical sources". Documentos Ocasionales, 2407, Banco de España. https://doi.org/10.53479/36212

- Cobreros, L., S. García-Uribe, and M. Gómez-García. (2023). "Distributional accounts: a tool for monitoring the distribution of household wealth and debt components". *Economic Bulletin - Banco de España, 2023/Q4 02*. https://doi.org/10.53479/33800

- Instituto Nacional de Estadística. (2024). *Methodological Note on Balance Sheets for Non-financial Assets*. https://www.ine.es/en/daco/daco42/cne15/nota_meto_bal_en.pdf