EUROPEAN CENTRAL BANK

EUROSYSTEM

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Experimental Distributional Wealth Accounts for the household sector

Overview

The purpose of the Distributional Wealth Accounts (DWA), produced by the European System of Central Banks (ESCB), is to meet the growing interest in adding distributional information to macroeconomic sector accounts. This note provides information on how the DWA are compiled and what results are available. For a more detailed explanation, please see the related [Methodological note.](#)

The ESCB compiles [Quarterly Sector Accounts](#) (QSA) statistics for all euro area/EU countries and the euro area as a whole. These show financial transactions and positions, as well as non-financial transactions as compiled by national statistical institutes and Eurostat, for the main institutional sectors, including the household sector. The time series start in the first quarter of 1999 and cover the last reference quarter with a lag of about three to four months. They follow the methodology of the [European System of Accounts](#) (ESA 2010).

In parallel, the ESCB also produces the [Household Finance and Consumption Survey (HFCS)](#), which provides information on the distribution of wealth among households in all euro area countries. Four waves of the survey have been released, approximating to the years 2010, 2013, 2017 and 2021. These data are published with a lag of around 18 months.

The DWA link these two different datasets[1], with a view to providing an assessment of the distribution of household wealth that is consistent with the aggregates compiled in the sector accounts. The method and results have been developed and compiled by the ECB and the ESCB's Expert Group on Distributional Financial Accounts (EG DFA).[2] The method for producing DWA results may be further enhanced over time, e.g.by taking into account additional data sources, and revisions to experimental data may occur.

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[1] The Netherlands publishes distributional accounts consistent with National Accounts totals for some years. These data are used as input for the DWA of the Netherlands, instead of the HFCS. The methodology applied for the DWA for the Netherlands in the ESCB dataset therefore differs from the methodology explained in this note.

[2] Eurostat and national statistical institutes have taken steps in parallel to compile distributional data on income and consumption for EU countries (see the [Eurostat website](#)).

1. Compiling experimental DWA

DWA results are generally consistent with the QSA.[3] The distributional breakdown is produced by combining information from the HFCS with additional estimates.

The QSA and the HFCS have different aims and are therefore compiled in different ways. The HFCS collects, among others, a self-assessment of wealth from a representative sample of households and provides results on the distribution of wealth at specific time points. The QSA are mainly based on reporting by financial institutions which provide financial services to the household sector under ESCB statistics. [4] The aim is to produce a time series and complete coverage of household assets and liabilities consistent with data recorded for other sectors in the economy. At aggregated level, the two datasets show somewhat different results: in most cases, as shown in Chart 1, estimates of aggregate totals based on the HFCS are lower than those in the QSA. Apart from aligning some differences in definitions of instruments, the main reconciliation step needed when compiling DWA is to close the "gap" between the HFCS and the QSA.
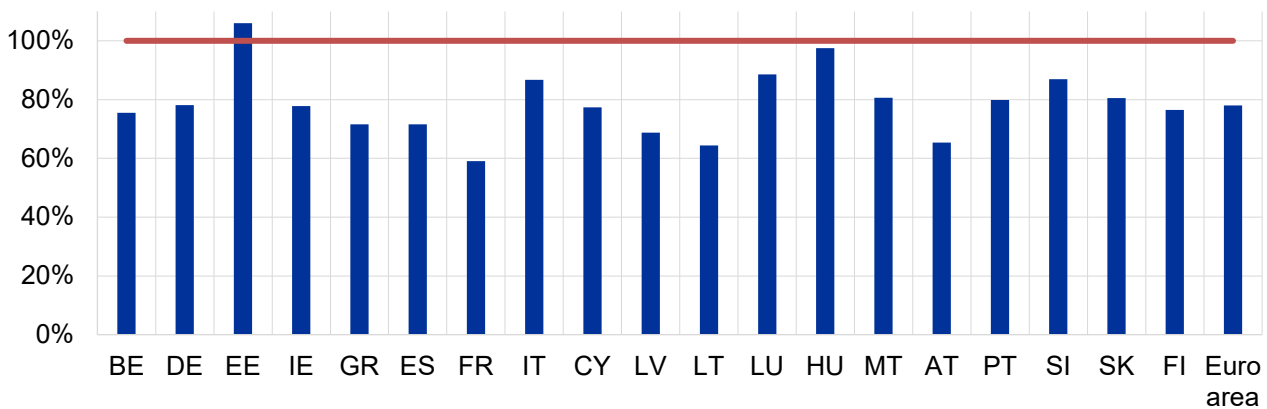

Chart 1: Initial HFCS/QSA[5] coverage ratios, HFCS wave 4 (net wealth)

Chart 2 summarises the steps implemented to link the HFCS results with those of the QSA. First, all components of household wealth in the HFCS and QSA are compared, if needed adjusted and then linked to produce a common concept of wealth for the DWA (see also further below). Then small differences in the reference periods of the HFCS and the QSA are adjusted, along with small differences in the population coverage of the two sources. The third step includes measures to close the gap typically observed between instrument totals in the HFCS and the QSA. One important adjustment is to enhance the estimates for wealthy households which are not always fully covered in survey data.[6] This estimate takes into account the size of the gap between the wealth of the richest households covered in the HFCS and those identified

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3   A few exceptions are explained in the Methodological note mentioned above.

4   e.g. banks reporting deposits received from households.

5   The QSA data used in this chart incorporate a few adjustments performed for some countries and instruments to the final target used in DWA: see Section 3 of the Methodological note.

6   See, for example, Vermeulen, P. (2016), "Estimating the top tail of the wealth distribution", American Economic Review: Papers & Proceedings, Vol. 106, No 5, p.p. 646-650, and Chakraborty, R. and Waltl, S. R. (2018), "Missing the wealthy in the HFCS: micro problems with macro implications", Working Paper Series, No 2163, European Central Bank.

in ad hoc studies available at country level (and often published in the media as "rich lists"), and assumes that the wealth of these richest households follows a Pareto distribution[7]. The final step is to close any remaining gaps by proportionally grossing -up the DWA estimates to the aggregates available in the QSA.

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│  │  Define wealth concept│      │   Adjust instruments │ │
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│  │   Adjust timing  │          │   Adjust population  │ │
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│  │   Estimate missing breakdowns and distributions    │ │
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│      │        Correct for under-reporting       │       │
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│      │        Correct for missing wealthy       │       │
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│      ┌──────────────────────────────────────────┐       │
│      │        Gross-up for remaining gaps       │       │
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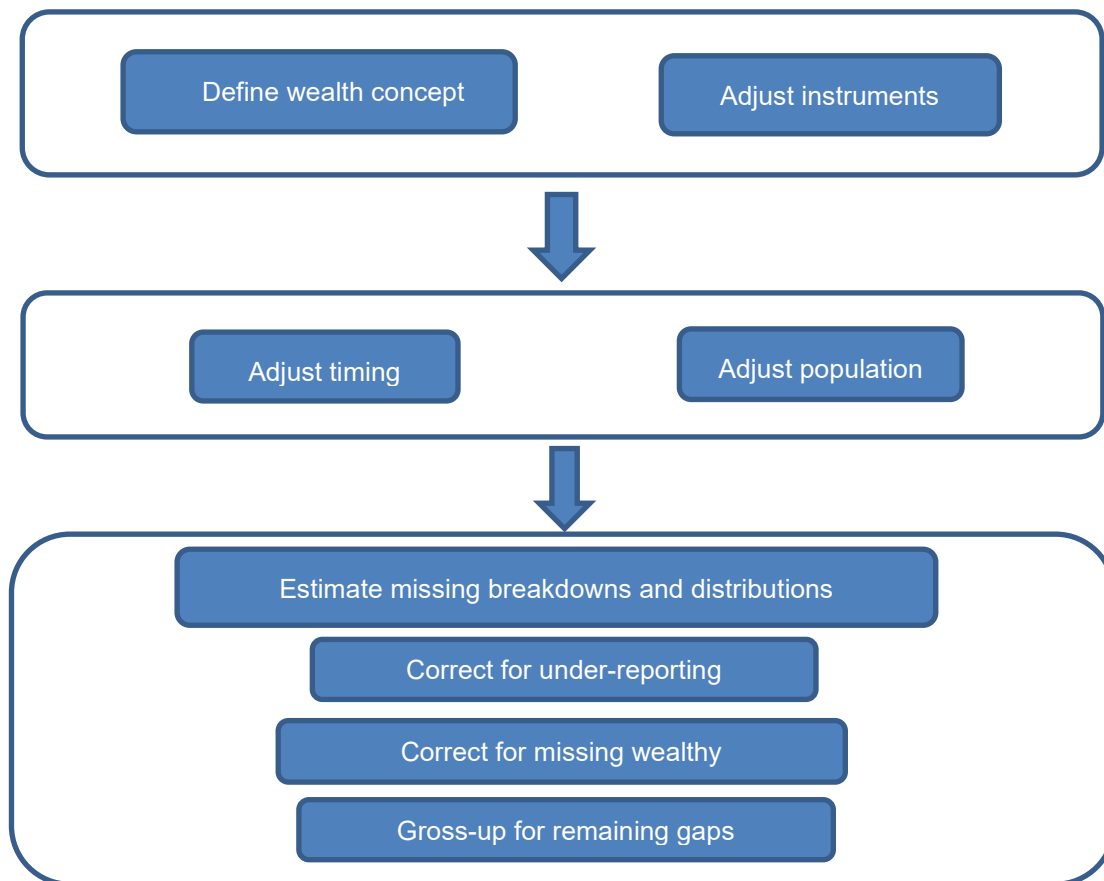
Chart 2: Main steps to reconcile HFCS and QSA

Some of the instruments covered in the HFCS and the QSA cannot be easily reconciled due to differences in definitions or data gaps. Consequently, the DWA data focus on an adjusted wealth concept covering most but not all instruments available in the HFCS and the QSA. Currency holdings, i.e. coins and notes, non-life insurance reserves, i.e. funds set aside by insurance company for the purpose of meeting obligations, occupational pensions and other accounts receivable and payable, i.e. money to be paid or received by households for goods or services delivered but not yet paid, are covered only by the QSA (or treated in a different manner in the QSA and the HFCS) and are currently excluded.[8] The net wealth concept used in the DWA covers asset holdings in deposits, debt securities, listed shares, unlisted shares

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[7]   The right tail of the wealth and income distributions follows a power law, such that the distribution of a quantity of interest, such as wealth, varies as a power of the cumulative distribution of households. See, for example, Blatnik, Felici and Ferrer-Hernández (2023), "Distributional Wealth Accounts for the Euro Area: Capturing the Right Tail", 64th ISI World Statistics Congress.

[8]   In addition, financial derivatives held and loans granted by households are covered in sector accounts, but given that they represent in most countries negligible amounts, they are not covered by the process linking them with the HFCS.

and other equity, investment fund shares, life-insurance, housing wealth and non-financial business wealth (i.e. non-financial assets used for production purposes by households[9]). Household liabilities are covered in the form of loans (mortgage and non-mortgage debt). Overall, at euro area level the instruments covered represent about 90% of the value of households' financial and non-financial assets as recorded in the QSA, and the same share of household liabilities (Table 1).

Code	Instruments	Assets		Liabilities	
		Included in DWA	Not included	Included in DWA	Not included
F21	Banknotes and coins		1%		
F2M	Deposits	13%			
F3	Debt securities	1%			
F4	Loans		0%	88%	
F5	Equity	12%			0%
F62	Life insurance	6%			
F6O	Non-life insurance		0%		
F6M	Pension entitlements		5%		
F8	Trade credits and other accounts receivable		1%		12%
	Housing wealth	54%			
	Business assets	7%			
	Total coverage in DWA	**93%**	**7%**	**88%**	**12%**
	Total sector accounts	**100%**		**100%**	

Table 1: Coverage of Distributional Wealth Accounts (euro area, as a share of QSA totals at mid-2023)

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[9] e.g. buildings other than dwellings (industrial buildings, shops, offices, farms) and land not underlying dwellings. Some households acting as self-employed are shown in the household sector, rather than the non-financial corporation sector, in National Accounts, depending on specific criteria.

2. Time series, breakdowns and indicators available

The DWA include data for the euro area as a whole, all euro area countries (except Croatia), and Hungary.

Quarterly DWA time series have been compiled taking advantage of the quarterly frequency of the QSA:

- ✓ The DWA starting date refers to the first available HFCS wave, for each country, and 2009 for the euro area aggregates,
- ✓ DWA data for quarters between HFCS waves are interpolated,
- ✓ DWA data since the latest HFCS wave (generally carried out around 2021[10]) are extrapolated up to the latest reference quarter in the QSA by incorporating the changes in total positions as available from the QSA.

The complete list of DWA breakdowns and indicators released is provided in the Annex. These were selected based on user needs and statistical quality. Chart 3 gives a summary of the items available:

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[10] Although the survey does not refer to the same time period in all countries, the most common reference period for the data is 2021. More details are available in HFCS report on the results from the 2021 wave.
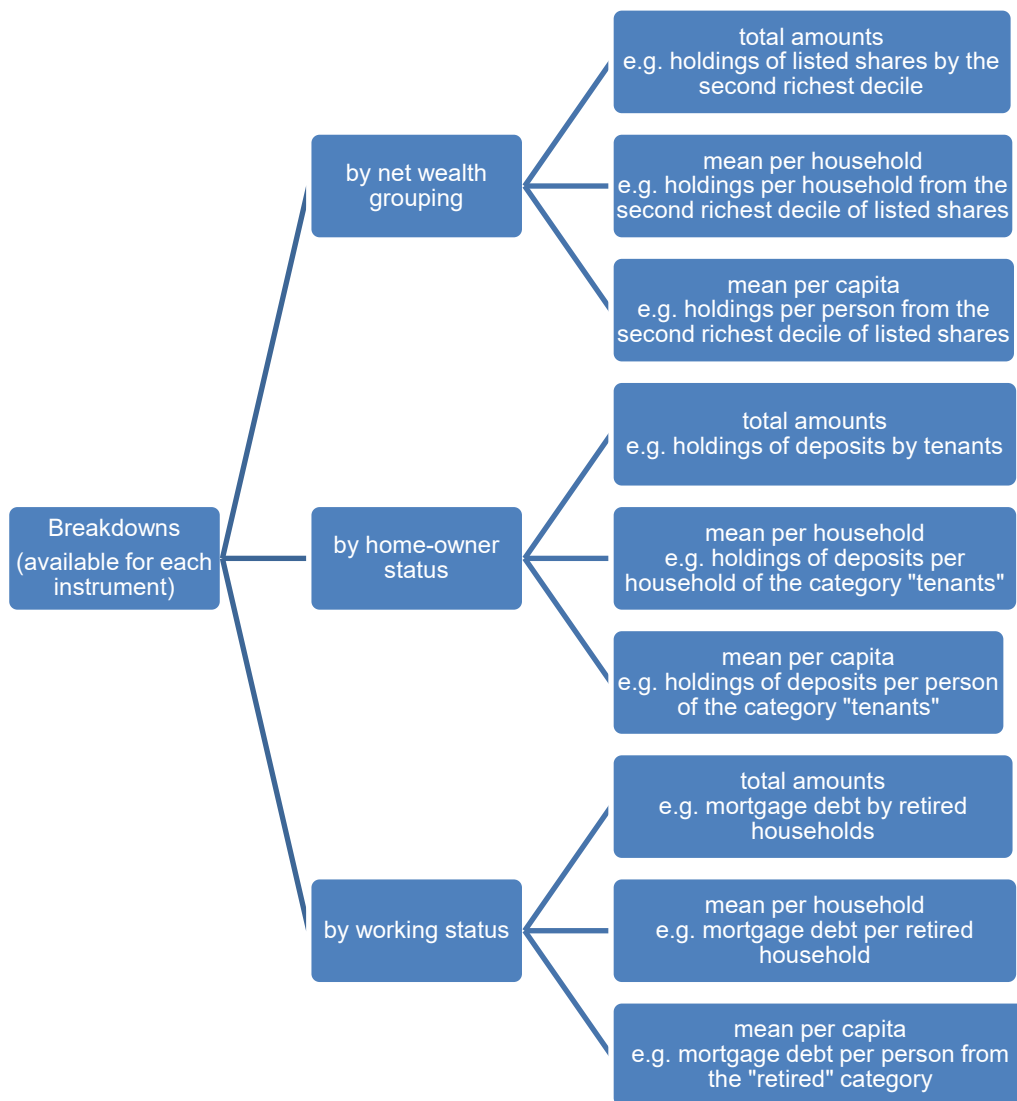
Chart 3: Main DWA results

The DWA also provide a number of indicators:

- ✓ Gini coefficient
- ✓ Top 5%, top 10% and lowest 50%
- ✓ Mean and median wealth
- ✓ Debt-to-asset ratio by net wealth deciles

The data are made available in the ECB Data Portal, as well as in csv file and pivot table available on the ECB Data Portal.

DWA are published quarterly and are available no later than five months after the end of the quarter, meaning that results for the fourth quarter of a year will be released by the end of May of the following year, for instance.

3. Main quality features of the experimental data

The QSA and the HFCS are two established statistical sources, for which data quality is regularly monitored and improved. When analysing the DWA, however, it should be kept in mind that integrating HFCS and QSA data requires a series of estimates and assumptions. The choices made have been closely analysed and compared with alternatives, and the plausibility of the resulting DWA has been assessed by comparisons with the HFCS and other sources of distributional results, as well as over time. Nevertheless, users should be aware that the accuracy of the new distributional breakdowns is lower than that of the QSA totals, and that further improvements will be integrated as they become available. For this reason, the DWA are labelled 'experimental'.[11]

For example, the DWA make use of additional information on the wealthiest households in each country, generally based on media sources ("rich lists"), complemented by additional information if available to national compilers. Moreover, they employ additional estimates and assumptions to produce figures for the distribution of deposits and loan liabilities. Finally, the "wealth gap" between the HFCS and the QSA remaining after these adjustments is allocated proportionally to the observed wealth across household groups. This method was chosen as in the absence of data sources enabling a more accurate correction, a method that would change the shape of the wealth distribution for an instrument seems unwarranted.

It should also be kept in mind that the data for the latest quarters after the last available HFCS wave are extrapolated under the assumption that the distribution of each individual instrument has remained stable. However, DWA distributions of net wealth change in the extrapolation period in line with the trends in the underlying QSA totals for the instruments and the holdings of different household groups. For example, strong increases in share prices will tend to shift wealth distribution towards those household groups which typically hold shares as part of their financial investments.

Finally, some limitations to the comparability between DWA country results need to be taken into account. As described in the HFCS FAQ documentation, both institutional and methodological issues impact the cross-country comparability of HFCS indicators: for instance differences in the size of households, or in the rates of home or land ownership. The caveats applying to the comparability of HFCS country results also apply to a large extent to the comparison between DWA country results. Moreover, the different extent to which additional information is available to enhance national DWA estimation steps (e.g. on missing wealthy or administrative data sources) may impact on cross-country comparability of the results.

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[11] See also ECB statistical quality framework experimental data on the ECB's website.

Annex: DWA breakdowns and indicators

Indicators	Top 5% share of wealth	Top 10% share of wealth	Bottom 50% share of wealth	Gini coefficient	Median wealth	Mean wealth	Debt-to-asset ratio	Debt-to-asset ratio in deciles D1 to D10

Breakdowns *(each empty cell presents one DWA series)*	Net wealth grouping						Home-owner status		Working status				
	Bottom 50%	D6	D7	D8	D9	D10	Owner-occupier	Tenant/free use	Employee	Self-employed	Retired	Unemployed	Undefined and other
Holding amounts													
Net wealth													
Total assets													
Total liabilities													
Deposits													
Debt securities													
Listed shares													
Investment funds shares													
Life insurance													
Financial business wealth													
Non-financial business wealth													
Housing wealth													
Mortgage debt													
Other debt													
Holding amounts per household													
Net wealth													
Total assets													
Total liabilities													
Deposits													
Debt securities													
Listed shares													
Investment funds shares													
Life insurance													
Financial business wealth													
Non-financial business wealth													
Housing wealth													
Mortgage debt													
Other debt													
Holding amounts per capita													
Net wealth													
Total assets													
Total liabilities													
Deposits													
Debt securities													
Listed shares													
Investment funds shares													
Life insurance													
Financial business wealth													
Non-financial business wealth													
Housing wealth													
Mortgage debt													
Other debt													

Countries	Euro area, BE, DE, EE, IE, GR, ES, FR, IT, CY, LV, LT, LU, HU, MT, NL, AT, PT, SI, SK, FI