

# Revisions to historical time series in external statistics and the financial accounts (2024)

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## 1. Introduction

As agreed at the European level, the OeNB participated in a coordinated benchmark revision of data from external statistics and the financial accounts in September 2024. The revision, which takes place every five years, aims to review the methodology used to calculate, and the comparability of, key macroeconomic indicators. To this end, new data sources or new methodological requirements are applied to the entire time series under review. The revision periods were 2013 to 2020 for external statistics and 1995 to 2020 for financial accounts. The revision period for external statistics starts with the 2013 reporting year because there has already been a comprehensive revision and reconciliation between the balance of payments and the system of national accounts for the period up to the 2012 reporting year. The revision of data was carried out in close coordination with Statistics Austria, which revised its data on the system of national accounts back to the year 1995.

## 2. Current account revisions

The previous benchmark revision covered the period until 2012. It followed the introduction of the IMF's sixth Balance of Payments Manual (BPM6), which was brought into force by regulation in the EU, and hence in the euro area, in 2013. This revision already included far-reaching changes to the presentation of the real external sector. Notably, processing abroad (i.e. exports and imports of goods owned by others for further processing) was removed from the goods trade balance and reclassified as a service.

Consequently, there was no need to focus the 2024 benchmark revision on methodological adjustments in the current account. Instead, the revisions to the real external sector aimed at a more comprehensive presentation of household imports and the incorporation of the results of selected business case reconciliations. This means that the aim was not to close methodological gaps in the implementation of BPM6, but to include new data sources (such as the ECB's payment statistics) and to achieve a further harmonization with the system of national accounts.

Looking at Austrian households' imports in particular is important as external sector data are collected mainly in business surveys. While there are household surveys for selected areas such as tourism, and merchandise imports by household are covered by foreign trade statistics, households' digital transactions are a statistical challenge that is widely discussed among experts at the international level. The collection of data on households' digital transactions is based on the corresponding OECD manual, which was drawn up in cooperation with the IMF, the UN and the WTO. "Technological change has provided individual consumers (households) with increased possibilities to purchase goods and services from foreign suppliers...", says the report.<sup>2</sup> This situation has created new challenges and a need for new data sources.

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<sup>2</sup> International Monetary Fund, OECD, United Nations Conference on Trade and Development, World Trade Organization. 2023. Handbook on Measuring Digital Trade. Second Edition.

Austria has decided to make use of administrative and tax office data sources which allow for the recording of cross-border digital transactions, especially within the EU. Among the reasons for this approach are the effective EU VAT rules on e-commerce and digital services ("VAT One Stop Shop"), which have been in force since 2021. They stipulate that companies engaged in cross-border e-commerce or services in the EU (including provision via digital platforms) only need to register for VAT in one member state. For this reason, advance VAT returns lost their role as central data source for statistical records of trade in goods and services in Austria and had to be supplemented by new administrative data sources.

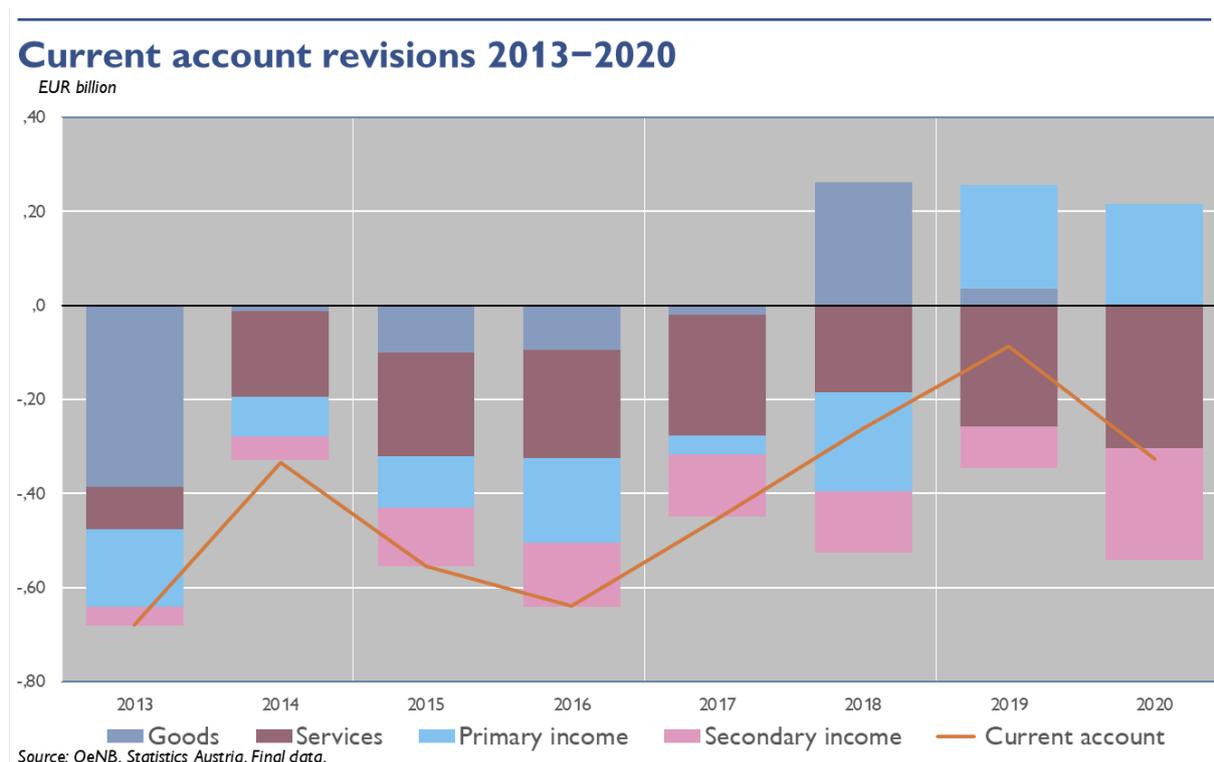
In addition to the comprehensive and coordinated coverage of tax-based data for household digital imports, the changes focused on the use of new and enhanced statistical data. This concerned, in particular, the ECB's payments statistics. In a joint initiative of the EU and euro area countries, the statistics were extended by merchant category codes and aligned with the classification of the balance of payments statistics (i.e. the separation between goods and different categories of services). This way, we are able to obtain more information about online transactions by households. This also includes online gambling, which is exempt from VAT and which had been underrepresented so far. Information from the system of national accounts that approximates the share of service charges in gambling transactions with domestic gambling companies was used to feed payment transaction information into the balance of payments.

As mentioned above, new data from business case reconciliations have been included in the benchmark revision of the current account. In a small, open economy like Austria, transactions in individual areas of the external sector tend to be dominated by few large enterprises and multinational groups. Therefore, the OeNB and its cooperation partner Statistics Austria have investigated the transactions of these firms using all available statistical and administrative data ("large case units approach"), thereby gaining new insights into the volume of transactions and their regional distribution.

In summary, the quality measures concerned both the goods trade balance (notably merchanting, goods not crossing borders and the reconciliation with the input-output analysis) and the balance of services (especially fees for processing, patents and licenses and fees for personal services). This led to follow-up revisions to secondary income (i.e. counterpart entries in current transfers), such as the recording of provisions and payouts in online gambling. In addition to changes in global gross flows and in balances, the revisions brought about changes in regional structures, mainly due to the company information specified above.

Overall, the revisions led to a reduction in external trade and the "real" part of the current account (i.e. the balance of goods, services, labor income and current transfers) over the benchmark years. In total, the revisions (excluding investment income) remained below EUR 0.5 billion in all reporting years. The revision of investment income resulted in changes between around –EUR 0.2 billion and +EUR 0.2 billion. In total, the maximum revised amount was EUR 680 million (in 2013).

Chart 1



### 3. Revisions to the financial account and the international investment position

The revisions to the financial account focused on the consistent integration of new data sources that have already been used for most recent calculations and estimates into calculations of past data. Moreover, for the first time, Austria reported data based on the extended ECB Guideline<sup>3</sup> for the period 2013 to 2020 to the ECB. Notably, this extension includes data on special purpose entities (SPEs). SPEs have already been covered by Austrian FDI data, but SPE data have not yet been reported to the ECB. In the other functional categories, such as portfolio investments and other investments, the SPE position is a new piece of information.

#### 3.1. Direct investment

Revisions to foreign direct investment (FDI) concerned primarily quality assurance of SPE positions, the new breakdown of FDI debt instruments and revisions of major individual cases. Particular attention was paid to the retroactive submission of SPE data for the period 2013 to 2020 to the ECB. Also, for the first time, the OeNB submitted a more detailed breakdown of FDI debt instruments (by debt securities, loans, trade credits, and other assets and liabilities). To ensure the quality of the submitted data, we systematically analyzed and, where necessary, corrected the microdata for the respective time series. In general, the revisions to the SPE data mostly increased the holdings of financial corporations, especially intragroup lending, as well as the holdings of equity claims (in 2020). Research and late reports helped obtain a more complete picture of FDI.

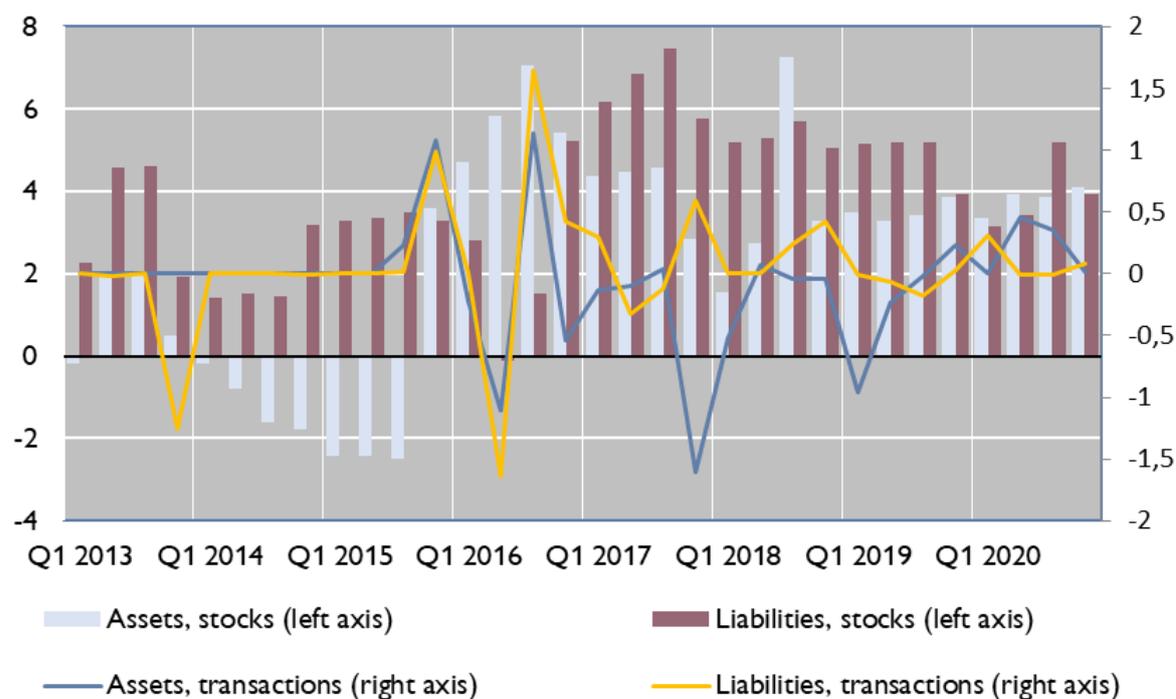
<sup>3</sup> Guideline of the European Central Bank of 9 December 2011 on the statistical reporting requirements of the European Central Bank in the field of external statistics (recast) (ECB/2011/23), see [EUR-Lex - 32011O0023 - EN - EUR-Lex](https://eur-lex.europa.eu/eli/reg/2011/23/oj).

Chart 2

## Revisions to direct investments 2013–2020

### Changes to stocks and transactions

EUR billion



Source: OeNB.

Chart 2 shows the changes (current data minus the data that were last reported) in stocks and transactions for assets and liabilities. Stocks increased throughout the entire period, with the exception of assets from Q1 2014 to Q4 2015. Transactions (purchases and sales) on the assets and liabilities sides have led to revisions concerning all relevant financial instruments and almost all periods. Since these revisions are driven by individual cases, no clear pattern can be identified in transactions over time. Throughout the whole period under review, transactions show average changes of around –EUR 60 million per quarter on the assets side and +EUR 44 million on the liabilities side. In absolute terms<sup>4</sup>, the revisions amounted to EUR 286 million for assets and EUR 271 million for liabilities. We also systematically examined other flows, reviewing individual large cases in the microdata, thereby achieving improvements. Flows previously classified as other changes were reclassified as transactions, price effects or exchange rate effects.

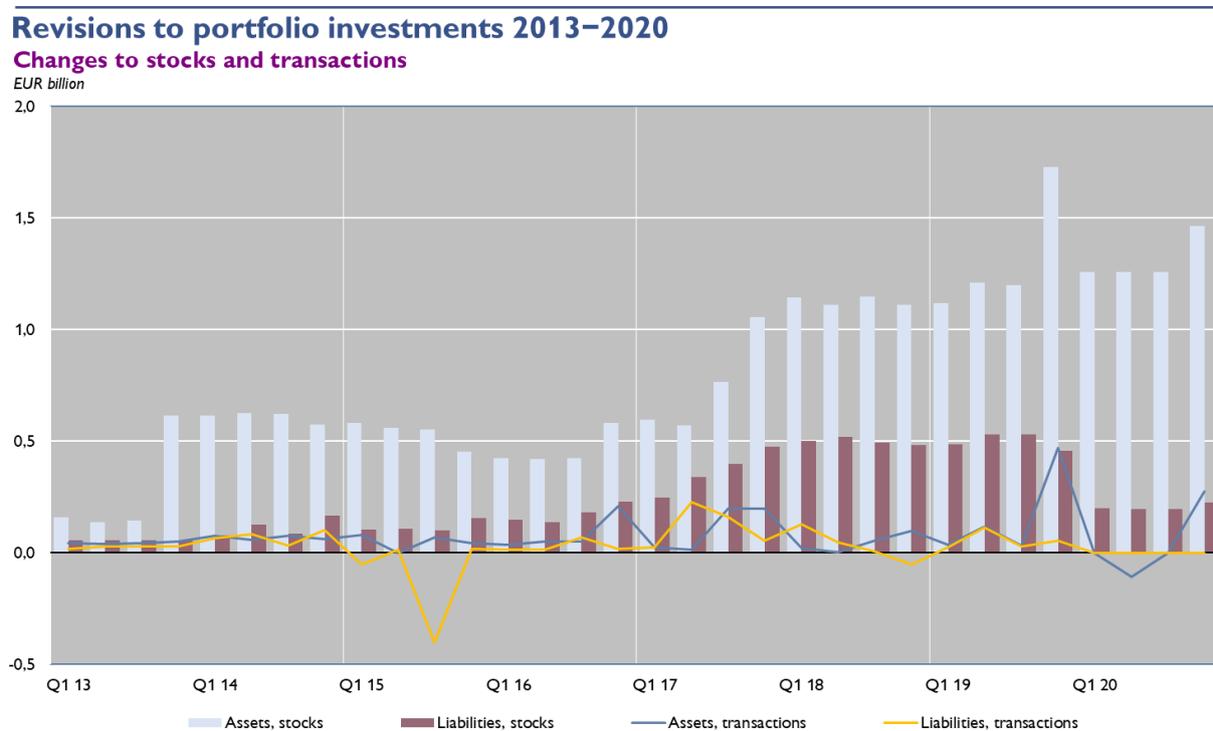
For property, we developed a new model based on the residential property price index of the Bank for International Settlements (BIS)<sup>5</sup> and retroactively integrated it into our calculations. The price effects we obtained increased the corresponding stocks; we also recalculated exchange rate effects. As a result, stocks of assets and liabilities in 2013 were, respectively, around EUR 0.5 billion and EUR 0.7 billion higher than before the revision. By 2020, the difference had increased to EUR 3.8 billion on the assets side and EUR 3.6 billion on the liabilities side. The recalculation of income from real estate investment over the whole time series resulted in an average increase by EUR 16.5 million (income received) and EUR 17.8 million (income paid) per quarter.

<sup>4</sup> Absolute value on a quarterly basis, not on a case-by-case basis.

<sup>5</sup> [Residential property prices - overview | BIS Data Portal](#).

## 3.2. Portfolio investment

Chart 3



Source: OeNB.

Revisions to portfolio investment were moderate. This is because the monthly reports on domestic banks' and investment funds' own holdings and customer holdings are relatively stable in terms of revisions. On the assets side, revisions were largely due to retrospective self-reports by nonfinancial corporations and households, which had a positive impact on the stock of claims (of up to EUR 1.7 billion or 0.5% of claims). On the liabilities side, the revisions were mainly due to adjustments to government and bank bonds (up to EUR 0.5 billion or 0.1% of liabilities). Furthermore, the migration of security-by-security data to a new system led to minor system breaks in Q1 2020.

## 3.3. Other investments

In other investments, several revisions were made for different reasons. As was the case in direct investments, a number of error and late reports at individual case or microdata level led to corrections. Together with detailed plausibility checks, they were a driver of shifts in claims and liabilities stocks. These shifts can mainly be attributed to various reclassifications of business cases, most of which have been reported by domestic nonfinancial corporations. Therefore, they are not visible in chart 4, which shows the aggregated revisions. Another aim of the revision was to achieve consistency in the presentation of external statistics, money and banking statistics (concerning Austrian credit institutions and insurance companies) and financial accounts where there had been minor differences in the time series, e.g. regarding insurance data or intra-group lending. For the current periods, we had already implemented these conceptual adjustments while maintaining the highest possible granularity.

The largest revisions (in terms of value) to the main other investment aggregates were due to methodological improvements concerning stocks and transactions. These mainly concerned the revision of the estimation model for the sectoral allocation of euro banknotes and coins in circulation attributable to the OeNB (cash estimate) and an estimate of domestic nonbanks' deposit claims and credit liabilities vis-à-vis foreign banks (BIS estimate).

The OeNB has liabilities related to cash issuance vis-à-vis both domestic and foreign entities. While domestic cash in circulation is shown in the financial accounts, cash outflows and inflows are reflected in the balance of payments statistics.<sup>6</sup> The new estimation model for euro cash uses various data sources (such as payments statistics or data on travel and compensation of employees) to estimate cash inflows to and outflows from Austria. Over the period from 2014 to 2020, cash outflows exceeded inflows. As a consequence, the OeNB's external liabilities on euro banknotes and coins increased, in total, by EUR 7.6 billion (revision +EUR 4.9 billion). This resulted in a stock revision of +EUR 4.3 billion for Q4 2020.

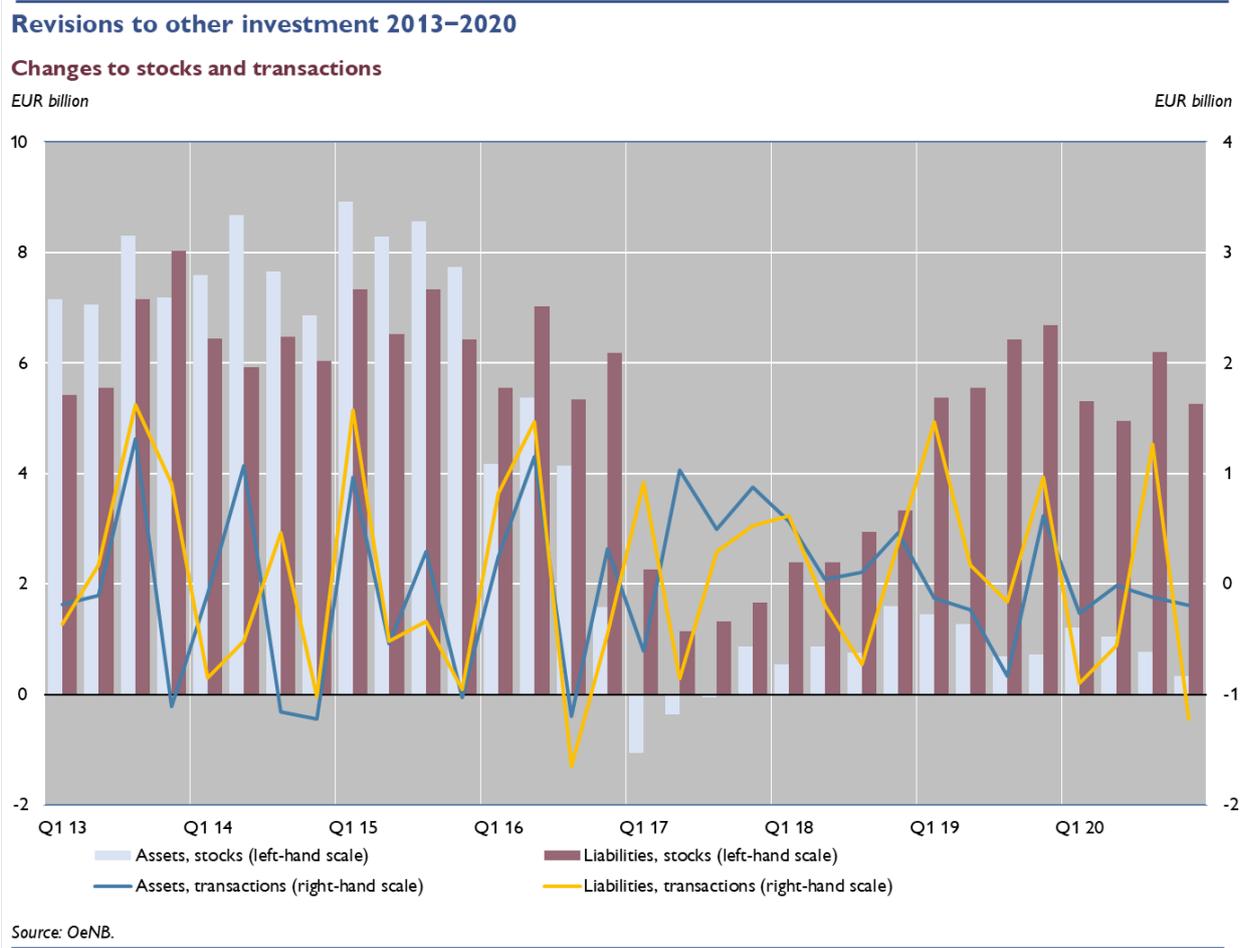
Another major revision resulted from the application of the BIS estimate. The estimate is based on the reconciliation of aggregated direct reports of transactions vis-à-vis foreign banks and banks' balance sheet statistics.<sup>7</sup> This estimate had already been implemented for the years from 2016 onward. Now we have also implemented this method, using mirror data, for claims and liabilities of domestic households, nonfinancial corporations and other financial corporations for the years 2013 to 2015. Relative to the overall revision in the main aggregates, the BIS estimate accounted for an average of around 93% of claims and around 70% of liabilities during this period. The estimated transactions derived from the stocks resulted in comparable shares of the revisions shown in chart 4 (in absolute terms). For the period from 2016 on, revision volumes were much smaller (with the exception of 2016), as they were only revisions to the existing BIS estimates.

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<sup>6</sup> Within the European System of Central Banks (ESCB), the total value of euro banknotes in circulation is allocated to the participating national central banks in accordance with the banknote allocation key. This means that the banknotes and coins actually put into circulation by the OeNB do not correspond to its liability according to the allocation key. For example, an underissuance leads to an intra-Eurosystem claim. Further details can be found in the financial statements of the Oesterreichische Nationalbank.

<sup>7</sup> For positions vis-à-vis euro area countries, the [Balance Sheet Items \(BSI\)](#) are used, while for non-euro area countries, the BIS' [Locational Banking Statistics by residency \(LBSR\)](#) are used as a source of mirror data.

Chart 4



### 3.4. Financial derivatives

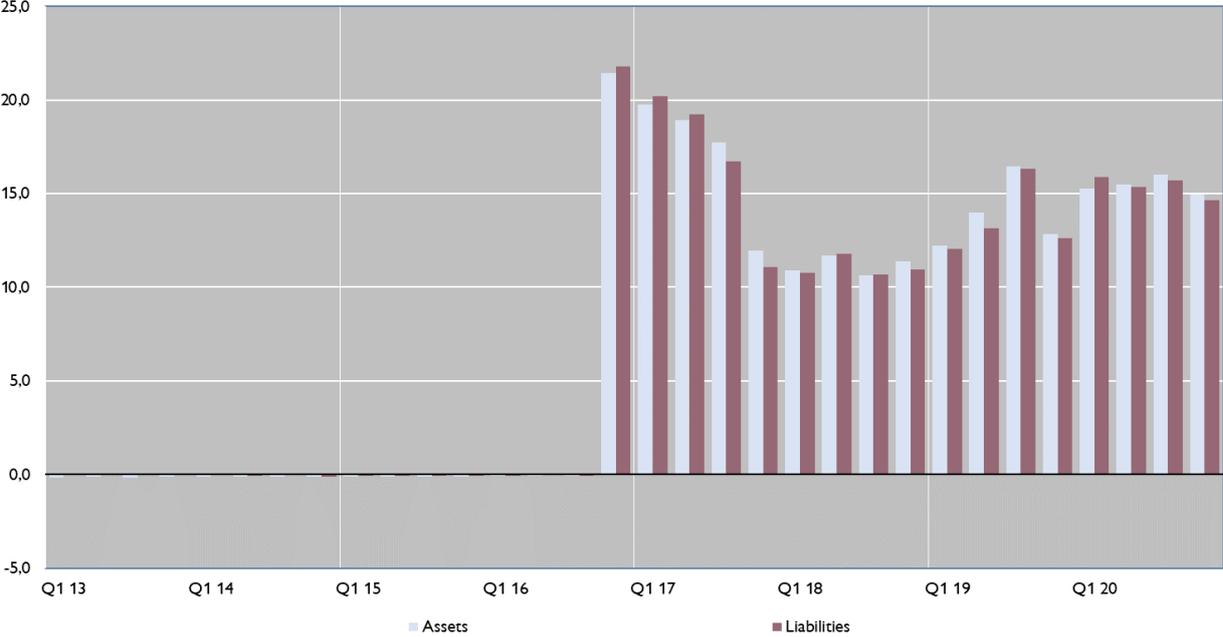
The stocks of financial derivatives (FD) were subject to very large revisions. However, since the revisions were parallel on the assets and liabilities side, they hardly affected the balance. In analogy to the current end, the stocks of claims and liabilities from banks' financial derivatives were adjusted to the holdings according to the money and banking statistics. The improvement of reporting information due to the changes implemented in early 2022 and the reconciliation with data from the European Market Infrastructure Regulation (EMIR) have shown that past stocks were too low and that the use of data from money and banking statistics (available from 2016 onward) leads to better data quality and enhanced consistency with other statistics.

Chart 5

### Revisions to financial derivatives 2013–2020

#### Changes to stocks

EUR billion



Source: OeNB.

Table 1: Average revisions to the financial account:

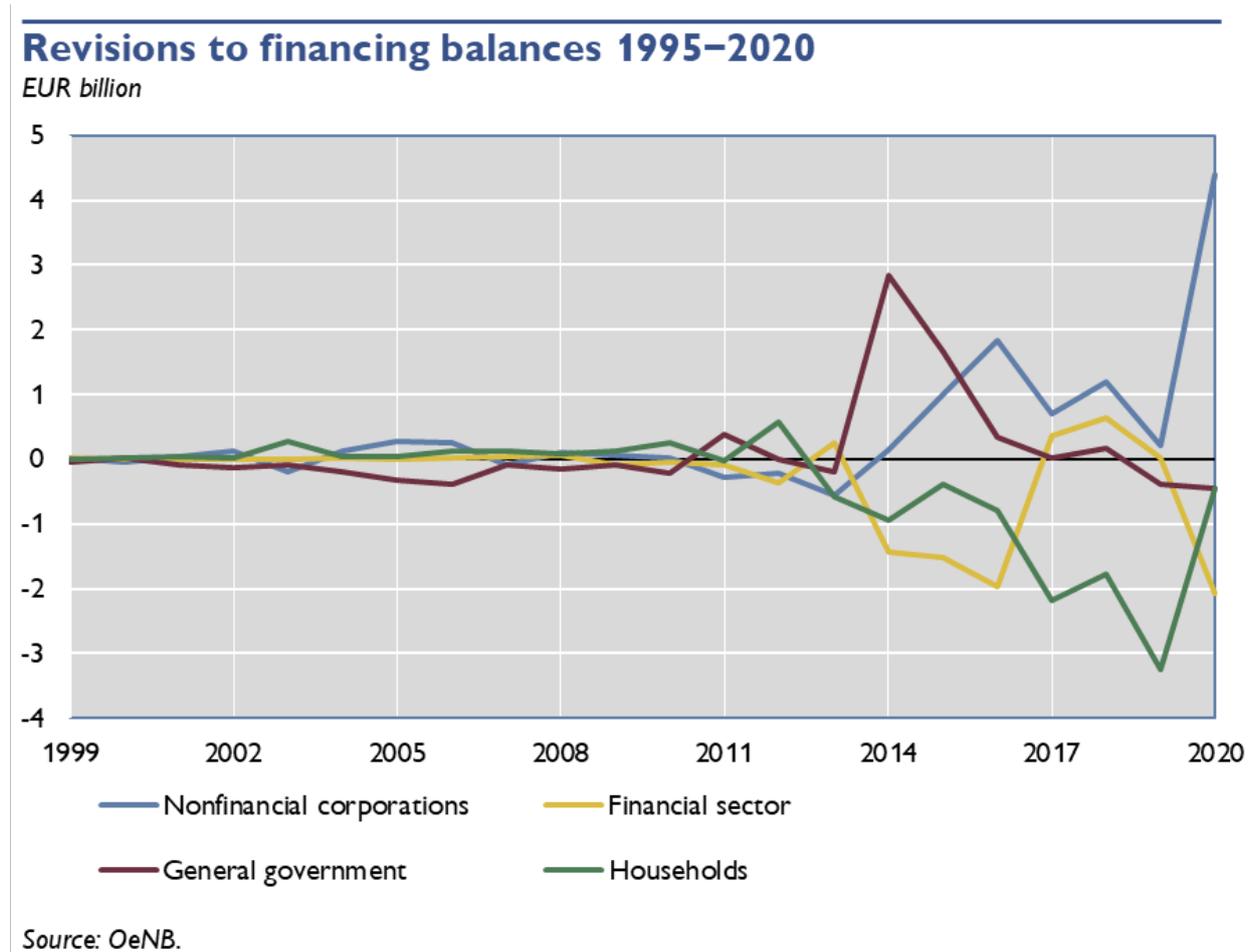
Time period	Functional category	Revision	Average amount of revision per quarter
2013–2020	FDI	Revisions of individual cases, systematic analysis of other flows and more detailed breakdown of FDI debt instruments	Change in stocks: claims: +EUR 2.5 billion liabilities: +EUR 3.9 billion change in transactions: claims: –EUR 60 million liabilities: +EUR 44 million
2013–2020	FDI	SPE, first report and granular analysis of stocks	Change in stocks: claims: +EUR 1.3 billion liabilities: +EUR 0.8 billion
2013–2020	FDI	Property, improved model for price effects and recalculated exchange rate effects and income	Change in stocks: claims (2013: +EUR 0.45 billion; 2020: +EUR 3.8 billion) liabilities (2013: +EUR 0.66 billion; 2020: +EUR 3.6 billion) changes in income: +EUR 16.5 million received, +EUR 17.8 million paid
Q4 2013– Q4 2020	Portfolio investment	Retrospective data entry of self-reports by nonfinancial corporations and households	Change in stocks: claims: between +EUR 0.5 billion and +EUR 1.5 billion
Q1 2013– Q4 2015	Other investments	First BIS estimate of credit liabilities and deposit claims of nonbanks vis-à-vis foreign banks	Change in stocks: claims: +EUR 7.25 billion liabilities: +EUR 4.54 billion change in transactions: claims: –EUR 138 million liabilities: –EUR 31 million
Q1 2016– Q4 2020	Other investments	Revised BIS estimate of credit liabilities and deposit claims of nonbanks vis-à-vis foreign banks	Change in stocks: claims: +EUR 1.56 billion liabilities: +EUR 0.09 billion
Q1 2014– Q4 2020	Other investments	Revision of foreign liabilities arising from euro banknotes and coins	Change in stocks: liabilities: +EUR 2.58 billion change in transactions: liabilities: between –EUR 1.23 billion (2020) and +EUR 2.76 billion (2019)
Q4 2016– Q4 2020	FDI	Revision of stocks by adjustment to reported data from money and banking statistics	Change in stocks: claims: +EUR 14.8 billion liabilities: +EUR 14.6 billion

Source: OeNB.

## 4. Revisions to the financial accounts

In the financial accounts, the current major revision has covered the entire time series starting from 1995; however, the revisions for the years before 2013 mostly entailed only minor adjustments in the government sector. The revisions were more significant for the years from 2013 onward, not least because revisions to the balance of payments also affect the financial accounts. Chart 6 shows the revisions to the financing balances of the individual economic sectors from 1999 to 2020. The reasons for the revisions and their impact on the respective sectors are explained in the following subsection.

Chart 6



### 4.1. Revisions to the financial sector (S.12)

As regards the financial sector, revisions not only concerned the balance of payments, but also pension funds and insurance companies. In addition, the sector breakdown was refined so that certain sectors for which the data had been jointly reported before the benchmark revision are now shown separately from 2013 onward. This concerns other financial institutions (sector 125), financial auxiliaries (sector 126) and captive financial institutions and money lenders (sector 127). This new classification has been applied to the data reported to the ECB from 2023 on, and, as required by the ECB, data revisions were performed back to 2013. To implement the new classification, banks' reporting data from money and banking statistics and reporting data from the balance of payments were used along with estimates.

Revisions to insurance companies and pension funds were only implemented for one quarter back. Nevertheless, they are relevant in terms of their amounts, which can be attributed to insurance technical reserves. Because of the introduction of the ECB insurance statistics on the basis of Solvency II, a new data source for calculating insurance technical reserves with domestic counterparts for the financial accounts has already been in use for reporting periods from 2017 on. Now, under the benchmark revision, insurance statistics data were also implemented for Q4 2016 (in line with the approach used for current periods).

The implementation of Solvency II data had already previously brought about significant revisions to stocks given reclassifications from non-life insurance to life insurance. According to Solvency II requirements, a distinction must be made in health insurance between life insurance and non-life insurance. This also allows for more precise statistical classifications and thus improved data quality. Data for periods prior to the implementation of Solvency II show the total volume of health insurance as part of non-life insurance. The revisions are clearly visible in chart 8 (subsection 4.3.2) for the year 2020. This chart shows an increase in "old-age provision" and a corresponding decrease in "other financial assets".

Along with the implementation of Solvency II data from Q4 2016 on, the calculation of transactions was also revised and adapted, as closely as possible, to the calculation logic of the ECB insurance statistics. This led to major revisions to balances, especially for 2017.

#### 4.2. Revisions to the government sector (S.13)

The revisions to the government sector, which were also included in the financial accounts, are described in detail in Statistics Austria's explanations on the mid-term-revision 2024 published as ["Erläuterung zur Mid-Term-Revision 2024 - Sektor Staat"](#) (available in German only).

#### 4.3. Revisions to the private sector (household sector S.14/15 and nonfinancial corporations S.11)

The largest revisions to the private sector are due to the incorporation of new data sources for other equity and improved estimates of currency holdings and transactions.

##### *4.3.1. Other equity held by nonfinancial corporations and the household sector*

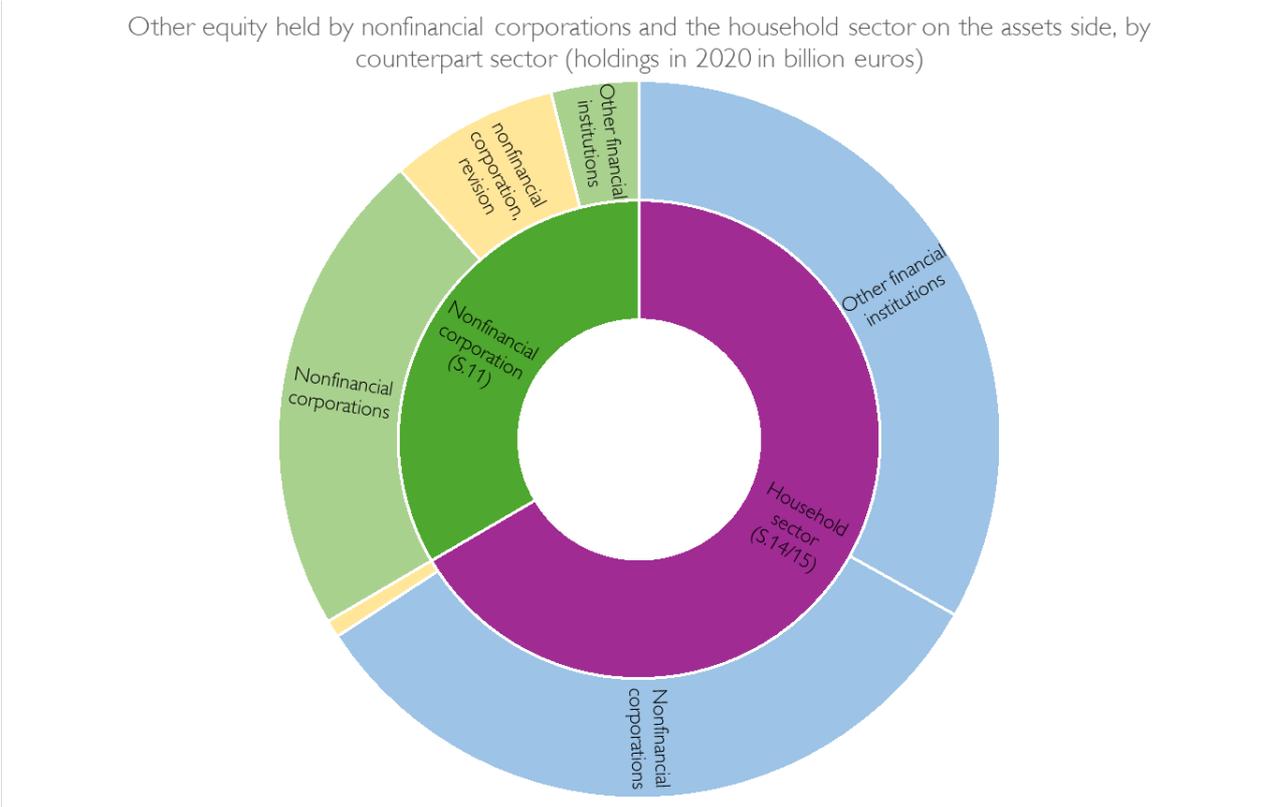
The statistical treatment of other equity is generally based on balance sheet data of nonfinancial corporations. The OeNB gets these data from SABINA, a company database operated by Moody's. Owing to an expanded database and a more detailed analysis of data, the benchmark revision in September 2024 mainly concerned intra-sector equity investments of nonfinancial corporations, but also households' equity investments in enterprises for the time series up to 2012.<sup>8</sup>

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<sup>8</sup> The available information regarding counterpart sector classification depends on the respective company's legal form. In the case of limited liability companies (GmbH), the company register shows what entities (and hence which sectors) have holdings in a company. This is not the case for partnerships (Personengesellschaften), general partnerships (Offene Gesellschaften) and cooperatives. For the latter legal forms, the counterpart classification is based on estimates.

Chart 7 shows total other equity held by households and nonfinancial corporations at the end of 2020, broken down by debtor sector. The areas highlighted in yellow indicate the holdings created by the major revision. At the end of 2020, this revision amounted to EUR 21.3 billion for intra-sector equity investments in the corporate sector, while the figure for households' equity investments in enterprises was EUR 3.8 billion.

Chart 7



Source: OeNB.  
 Note: Inner circle: creditor sectors, outer circle: debtor sector.

**4.3.2. Revisions to the household sector and their impact on financial wealth**

The revisions in September 2024 affected the financial wealth of households, increasing it slightly for the years 2011 to 2015 and decreasing it for the years 2017 to 2020. Chart 8 shows the revisions in households' financial wealth by financial instruments. The revisions are the result of the introduction of new estimation methods, but also of the implementation of new data sources, such as, in particular, the new cash estimate as well as revisions in other equity (4.3.1), old-age provisions (4.2) and the balance of payments.

Cash holdings of the individual domestic sectors as well as cash holdings abroad are assigned to sectors with the help of an estimation model which was first used for the 2014 reporting year. The application of this estimation model, which is described in section 3.3, led to revisions to households' cash holdings by an average EUR 3.3 billion per year.

The revisions to other equity described in section 4.3.1 increased the holdings of other equity by an average of EUR 1.5 billion per year for the time series up to 2012.

Revisions to the balance of payments with an impact on the domestic household sector from the sectoral perspective of the financial accounts include the revision of the BIS estimate of deposits and loans (see 3.3) and the revision of property under other equity (see section 3.1).

Chart 8 on the financial wealth of the household sector shows that the revision of the BIS estimate affected households' deposits, especially in the years 2013 to 2017.

In chart 8, "old-age provisions" (insurance and pension entitlements) and "other financial assets" (non-life insurance entitlements) were revised due to the implementation of a new data source. This is based on the implementation of Solvency II data from Q4 2016 (as described in section 4.1).

Chart 8

