

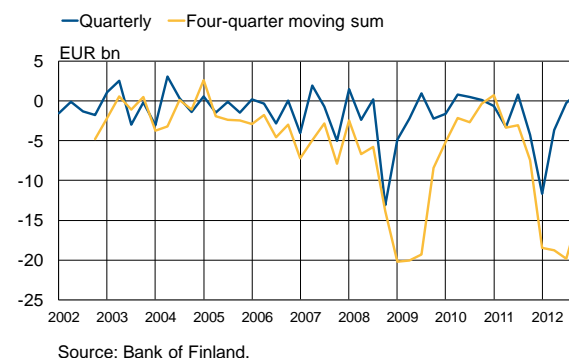
Revisions improve balance of payments

Data on Finnish portfolio investment liabilities have been revised on the basis of an alternative method. These significant revisions will reduce the balance of payments net errors and omissions.

The sum of the components of the balance of payments (BOP) – current account, capital account and financial account – is by definition zero. This is rarely realised in practice, and so the statistical discrepancy is recorded as a separate BOP item, ‘net errors and omissions’. This residual item consists of data that cannot be allocated elsewhere in the BOP, erroneously recorded data and other deficiencies and inconsistencies. In the long term, the cumulated residual item should approach zero.

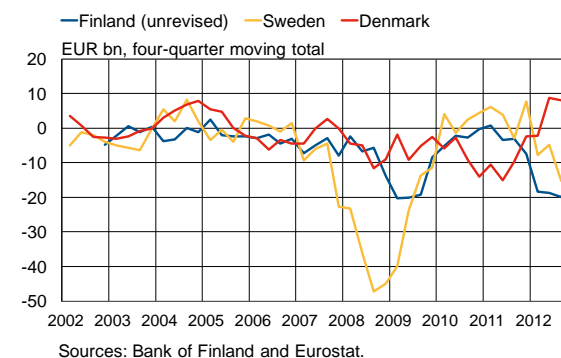
The residual item has traditionally been relatively small in the Finnish BOP, but starting from the end of 2008, in particular, net errors and omissions have increased and the cumulated residual item has been negative (Chart 1).

Chart 1. Net errors and omissions in Finnish balance of payments, quarterly unrevised data, 2002–2012



The increase in the residual item has not been just a Finnish problem; net errors and omissions have also increased in other EU countries since 2008. In addition to Finland, the negative trend is also visible eg in Sweden and Denmark (Chart 2) and in many other European countries.

Chart 2. Net errors and omissions in Finland (unrevised), Sweden and Denmark, four-quarter moving total, 2002–2012



An expert group at the Bank of Finland has been analysing the possible reasons for the growing residual

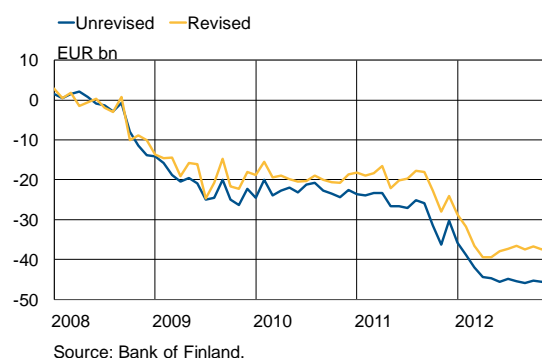
item using several different approaches¹. One of the specific areas of analysis featured the statistical compilation of portfolio investment liabilities and the question of whether the current BOP compilation method overestimates the share of foreign holdings in total portfolio investment liabilities. This could obtain for several reasons, but the increase in foreign custody holdings of securities has drawn particular attention: it is possible that in some instances of foreign custody the domestic owner shows up in the current data sources as a foreign resident, which results in an overstatement of foreign holdings. To test this idea the expert group made a calculation based on alternative sources and compared the results with figures produced by the current method. This method – the residual method – is described in more detail later this article.

Results and their impact on net errors and omissions

The results of the calculation based on the residual method show that the current statistical method indeed overestimates foreign portfolio investment liabilities. The resulting revisions to net errors and omissions are substantial: in data for 2008–2012 the cumulated residual item was revised by EUR 4.4 bn (Chart 3, which also shows other revisions affecting particularly year 2012 data).

¹ See Finland's balance of payments – Annual review 2011–2012/I-II, <http://www.suomenpankki.fi/en/tilastot/maksutase/Pages/vuosikatsaukset.aspx>

Chart 3. Cumulated net errors and omissions, unrevised and revised data, 2008–2012



Of this sum, EUR 2.7 bn was allocated to central government debt securities and EUR 1.7 bn to debt securities of other monetary financial institutions (deposit banks and other MFIs in financial intermediation). The stock of the central government's portfolio investment liabilities was revised by EUR 2.5 bn on average, and the stocks of other MFIs by EUR 1.3 bn on average (Charts 4 and 5). The bulk of revisions affected bond holdings, since their share in the total stock of debt securities is significantly larger than the share of short-term money market instruments.

Chart 4. Stock of central government's foreign debt, unrevised and revised data, 2008–2012

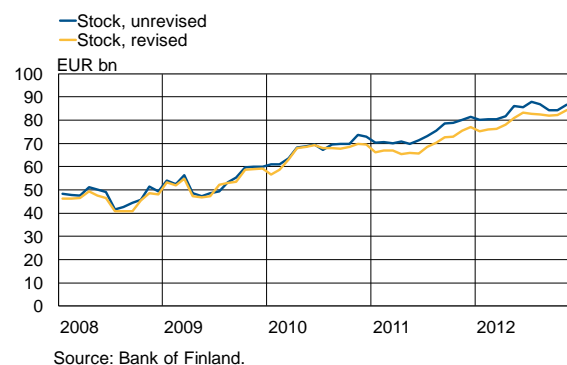
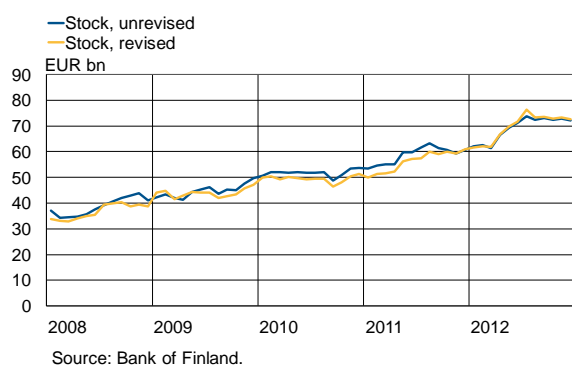


Chart 5. Stock of other MFIs' foreign debt, unrevised and revised data, 2008–2012



Residual method

The residual method is essentially a simple way to calculate foreign holdings of portfolio investment liabilities. Instead of collecting data directly on foreign holdings of domestic securities, the focus is on the domestic counterpart of such holdings. The method requires reliable data on both the total amount of portfolio investment liabilities issued and the amount of domestic holdings of such liabilities. Deducting the domestic holdings of debt securities from total liabilities yields a residual that is the amount of foreign holdings.

In practice, however, a simple calculation turns into a complex analysis that must take account of a large number of different variables. The calculation is done on an instrument-by-instrument basis for each borrowing sector and separately for stocks and flows of portfolio investment liabilities. Besides the usual challenges of source selection and harmonisation of frequency, there are also instrument and sector-specific problems. Even though there are fundamental differences in the treatment of stocks and flows, these cannot be treated separately from each other. Stocks and flows must change consistently, and therefore various interrelations need to be taken into account.

Once source data area selected and processed for calculation, domestic holdings from the selected sources are summed and deducted from the total amount of liabilities issued. This gives the foreign holdings by the residual method, which are compared with foreign holdings for the current statistical method. The difference between these two figures is the revision. Finally, it must be confirmed that the new stocks and flows are consistent and that there are no dubious valuation changes. Such changes can be levelled out by fine-tuning the estimation of monthly stocks and flows.

Selection of sources and treatment of source data

Many of the challenges relate in various ways to the selection of sources and treatment of source data. Possible sources were the Bank of Finland's own data collections for banks, investment funds and custodians, Statistics Finland's financial accounts and outstanding credit statistics and data published by the State Treasury.

Attention had to be paid to the valuation of figures and accrued interest, since the analysis required market value figures including accrued interest. For the reliability of the calculation, the total amount of debt issued is of particular importance, since every inconsistency in the amount affects the outcome. Consequently, particular attention had to be paid to the source of the total amount of debt issued. Selecting the best and most appropriate source was not entirely obvious for all domestic holder sectors, since the sources provided diverging figures for sectors that are more difficult to treat statistically, such as households. Because of a relatively long review period – ie years 2008 to 2012 – the available sources also change over time.

The use of financial accounts as an important source posed a challenge relating to data frequency. The bal-

ance of payments is compiled on a monthly basis, as are other statistics of the Bank of Finland, while the financial accounts are published at quarterly intervals. In order to use financial accounts as a source in a monthly calculation, monthly changes need to be estimated from quarterly data in a reliable manner. Construction of estimation methods, especially for monthly flows, proved to be one of the most difficult elements of the residual analysis.

Estimation of monthly changes in stocks from quarterly observations is based on benchmark monthly data that can be assumed to move similarly to the estimated data. Monthly changes are estimated by following the path of the benchmark data and fixing the last observation of a quarter at the original quarterly observation.

Estimation of monthly flows from quarterly flows, in turn, is based on the distribution of the changes in reliably-estimated monthly observations, ie the distribution of total changes. Such an estimation method performs well, if there are no major valuation changes in a quarter. If the distribution of total changes reflects valuation changes more than actual flows, the method may produce doubtful flow figures within quarters. However, in such a case the error affects only the quarter in question.

Next revisions for the corporate sector

In addition to the central government and monetary financial institutions, enterprises also make up an important borrower sector that poses its own challenges for the method. The corporate sector is more heterogeneous and raises more difficult statistical problems than the central government or banks. This makes eg selecting the right source for total corporate debt issuance a matter for more careful consideration. And, besides debt securities, corporate sector analysis also involves equity liabilities, for which a precise

methodology is to be worked out. On the basis of preliminary calculations for corporate debt securities, it is estimated that data revisions for the corporate sector will be similar in size to revisions now made to the data for the other two sectors. It is also likely that revisions to equity liabilities will be of major significance, but the challenges posed will also be considerable. Data revisions for the corporate sector can be expected in autumn 2013.

Residual analysis and developments in net errors and omissions

Revisions to net errors and omissions based on the residual method are a significant step in correcting the residual item, and the results of analysis have so far been encouraging. However, the residual method has not helped our understanding of the changes in net errors and omissions since 2008. The residual analysis has not revealed any factors that would clearly correlate with developments in net errors and omissions. For example, changes in the breakdown of domestic holdings between holder-sectors do not seem to be relevant for net errors and omissions. Work on residual analysis and other aspects of errors and omissions scrutinisation continues and will hopefully shed new light on the behaviour of the residual item.

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