EUROPEAN CENTRAL BANK

ESTIMATION OF QUARTERLY BALANCE OF PAYMENTS CURRENT ACCOUNT DATA FOR THE EURO AREA SINCE 1980

Update: 20 December 2004

Background

1. This note explains the methodology used to estimate historical series for the euro area balance of payments (b.o.p.) on current account and its components (credits and debits) since 1980 on a quarterly basis. The data relate to the 12 countries which form the euro area (Euro 12). They have a value for analysis or as an input in econometric modelling, although caveats should be noted (see paragraph 5).

2. The net current account for the euro area was in the past generally constructed by aggregating national data (intra- and extra-euro area transactions) on the assumption that intra-euro area transactions balance. In practice, however, they do not. This method results in large "intra-euro area asymmetries[1]", which lead to significant discrepancies in the euro area b.o.p. data. It is therefore preferable to compile euro area b.o.p. data by aggregating only *extra-euro area transactions*. This approach, which enables gross flows (credits and debits) to be shown, is considered to be the best way to compile euro area (and EU[2]) aggregates and is used as the basis for the compilation method described below.

3. However, before the introduction of the "Intrastat" system in 1993, the discrepancies were smaller, in particular for the goods item (see paragraph 5).

4. The main data sources used are the extra-euro area data compiled by the ECB on the basis of country contributions from 1997, Eurostat external trade data and IMF b.o.p. data for the period before 1997.

Methodological issues

5. With regard to the comparability of the series (i.e. between the ECB, IMF and Eurostat data) and their consistency over time, the main issues to take into account for the construction of the quarterly series are the following:

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[1] For further explanation of this issue see the Eurostat Working Paper entitled "Asymmetries of Current account in the intra-EU balance of payments".

[2] As compiled by Eurostat.

- Major changes occurred in the methodology and presentation of b.o.p. current account between the fourth and fifth editions of the IMF Balance of Payments Manual (BPM4 in 1977 and BPM5 in 1993). Conversion keys are needed to take account of the following changes:

  – The coverage of *goods* in the BPM5 was expanded to include goods for processing, repairs on goods and goods procured in ports by carriers;

  – The BPM5 makes a clear distinction, in the current account, between international transactions in services and in income. The category *income* was created to encompass the items *investment income* and *compensation of employees*;

  – *Investment income*: the practice of recording investment income on an accruals basis, as recommended in BPM5, is not fully applied in all euro area countries[3] Historical income data provided by the IMF have been compiled on a settlement basis;

  – Since the BPM5 clearly distinguishes between current and capital transfers, the current account only contains current transfers; capital transfers are included in the capital account.

- Some euro area countries send goods data to the IMF using national definitions that exclude "transit" trade, while goods data are transmitted to the ECB according to the European Community definition (i.e. including "transit" trade).

- There is a methodological break in the Eurostat external trade statistics owing to the implementation of the Intrastat system in 1993 for statistics relating to the trading of goods between EU Member States. Intrastat introduced the principle of consignment in the allocation of intra-EU imports, but this was not implemented immediately by all Member States (although most have applied it since 1997).

In addition, methodological changes which have taken place in some euro area countries have been reflected in the most recent data but not in the whole historical time series.

Data availability

6. The b.o.p. aggregate for the Euro 12 (on the basis of extra-euro area transactions, here designated as "step 2"), published by the ECB, is currently available for the period since 1997 on a monthly and quarterly basis.

7. External trade statistics for the Euro 12 (also based on extra-euro area transactions), published by Eurostat, are available on a monthly basis for the period since 1980.

8. National quarterly b.o.p. data (on the basis of intra- and extra-euro area transactions, or "step 1") for euro area countries, published by the IMF, are available for the period since 1980 Q1, except for Ireland, for which the data are available from 1981 Q1.

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[3] The detailed methodology agreed for the compilation of the euro area b.o.p., and as applied in each Member State, is described in the publication entitled "EU b.o.p./i.i.p. statistical methods", ECB, November 2003.

Compilation method

9. The methodology consists in (1) computing the share of extra-euro area flows in total flows, (2) interpolating these ratios (back to 1980 Q1) by assuming a seasonal pattern in all current account items (except for current transfers, for which a different method was required) using the ARIMA airline model (011)(011)[4] and (3) multiplying the calculated ratios by the total flows over the period 1980-1996.

10. The assumptions made in the underlying methodology are as follows:

1) The series are characterised by a stable seasonal pattern, i.e. there is no sign of moving seasonality over time.

2) Adjustment should be made for the remaining behavioural components of the data in the series, i.e. the trend, the cyclical and the irregular components.

11. More specifically, the calculations carried out for the components of the current account (except current transfers) on both the credit and debit sides are based on the following steps:

- Calculation of the following ratios:

$$\text{ECB' Euro 12 step 2} \Big/ \text{source}' \text{ Euro 12 step X}$$

where X is equal to “1” if the source is the IMF, or “2” when the source is the Eurostat external trade in goods data.

- Back-cast of the above ratios using the ARIMA airline model (011)(011) (without a working-day or Easter adjustment) for goods, services and income (credits and debits).

- Application of the back-cast ratios to the source data so as to produce the estimated ECB series.

12. For the goods item (credits and debits), an alternative solution was used, as Eurostat’s external trade statistics quarterly data were available since 1980 Q1. Thus the following ratio was calculated so as to obtain the optimal results:

$$\text{ECB' Euro 12 step 2} \Big/ \text{Eurostat' external trade Euro 12 step 2}$$

These series ratios were back cast to 1980 Q1 (using the ARIMA airline model (011)(011)) and applied to the external trade statistics (Eurostat) series since 1980 Q1 in order to compute the estimated goods data on a step 2 basis.

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[4] For details, see G.E.P. Box and G.M. Jenkins, *Time Series Analysis: Forecasting and Control*, 1970.

13. The results of the estimated extra-euro area series for the goods item calculated under points (10) and (11) were further analysed. It was decided that for the goods item (both credits and debits), the best approximation would be to use the external trade statistics[5].

14. As regards current transfers, two factors have affected this b.o.p. item during the period under review. First, the BPM5 split current and capital transfers into (1) current transfers, shown in the current account and (2) capital transfers, shown in the capital account. This new split was not applied by all Member States from the same date. Second, the recording of the current transfers from and to the EU that take place every January led to a more pronounced seasonal pattern in the series.

15. The resulting breaks in the series made it impossible to apply the methodology described above under point (11); hence, the euro area current transfers series are compiled using the ARIMA airline model (011)(011) (without a working-day or Easter adjustment).

16. The current transfer series do not reflect any break due to the above-mentioned factors because they are based on the BPM5 split and record the EU transfers consistently over time, before as well as after 1994 Q1.

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[5] Besides methodological adjustments, the main difference between external trade statistics (Eurostat) and the goods item in ECB b.o.p statistics is that the first is recorded on a c.i.f./ f.o.b. basis whereas the latter is on a f.o.b./ f.o.b. basis.