

Seasonal adjustment of the monetary aggregates

In December 1986 a small group chaired by the head of the Government Statistical Service was set up to review the seasonality and method of seasonal adjustment of the monetary aggregates.⁽¹⁾ This group, which included independent representatives as well as representatives of the Bank and the Treasury, has now completed its work. Its findings are set out in Report of the Working Party on Seasonal Adjustment of the Monetary Aggregates, Central Statistical Office, 8 September 1988, obtainable from the CSO.⁽²⁾

The Bank, the Treasury and the Central Statistical Office have now considered the working party's report. A number of recommendations were made. This note⁽³⁾ sets these out and explains the Bank's response to them. Technical terms used in this note are explained in the glossary on page 89.

The working party's terms of reference

The terms of reference of the working party were as follows:

- 1 To review the extent of seasonality in the monetary aggregates.
 - 2 To examine the technical merits of different available methods of seasonal adjustment of the aggregates, taking into account:
 - (a) The need to provide maximum assistance in interpreting the aggregates.
 - (b) The treatment of non-seasonal influences that affect the underlying trend.
 - (c) Any significant differences in the resource costs between one method and another.
 - (d) The need to ensure consistency among different seasonally adjusted series.
 - (e) The stability of the seasonal factors produced by the different methods.
 - 3 To consider whether any changes should be made, and to make recommendations.
- (c) Revisions to the seasonal factors for the monetary aggregates have been much greater than for non-monetary series, compared with the respective levels of the series. Nevertheless, the observed instability of the seasonal adjustments is no larger, in proportion to the irregularity of the aggregates, than for other non-monetary data. There is no evidence that the revisions are due to any technical deficiency of the Bank's methods.
 - (d) Nevertheless, some courses are open to the Bank which might reduce revisions to seasonal factors. One is to use current updating, which would be expensive to operate globally but on the basis of other studies might be expected to reduce revisions by about 15%. Current updating of deterministic adjustments only would be less expensive but still worthwhile. A second is to minimise changes to methodology.
 - (e) The choice between stochastic and deterministic adjustments should be reviewed regularly. There is now a good case for changing the bank interest adjustment to stochastic.
 - (f) The Bank should continue to ensure that the seasonally adjusted flow of funds matrix is balanced.
 - (g) Apart from the question of current updating, none of the issues discussed has any significant resource cost implications.

The working party's conclusions

The working party reached the following conclusions:

- (a) The broader monetary aggregates display less seasonality than many other typical economic series. Nevertheless, they have a seasonal component comparable in strength with that in other series which are published in adjusted form.
 - (b) External users of the data feel that they would need adjustments to cope with the seasonality. If no official series were produced, users would have to invent their own. The outcome would be confusing and inefficient.
- ## The working party's recommendations
- The working party made the following recommendations:
- (a) The Bank should continue to publish seasonally adjusted monetary aggregates in the framework of a balanced flow of funds matrix.
 - (b) The Bank should review the choice of components for deterministic adjustment, with a presumption that bank interest is no longer a candidate for this method. The choice should be reviewed regularly.

(1) See the December 1986 *Bulletin*, page 522.

(2) Contact Mr P B Kenny, Central Statistical Office, Great George Street, London SW1P 3AQ. The report costs £2, including postage. Cheques should be made payable to 'Treasury Votes Cash Account'.

(3) An earlier version of this note was issued by the Bank as an accompaniment to the monetary statistics press release of 29 November 1988.

- (c) The Bank should minimise changes in the methodology. This means that the potentially beneficial effects of any proposed change need to be weighed carefully against the disruption which users are liable to suffer in consequence. Before making any major change, the Bank should consult with the CSO and the Treasury to ascertain the balance of advantage.
- (d) The Bank should use current updating of deterministic adjustments wherever feasible. The restriction on changing previously published seasonal adjustments should be relaxed where this will improve the effectiveness of current updating.
- (e) The CSO should review the policy of updating seasonal adjustments, considering in particular the practicability of using current updating for stochastic adjustments. The Bank and the CSO should discuss the applicability of this review to the monetary aggregates.

The Bank's response

The Bank accepts the working party's recommendations in full. The Bank's response to these recommendations is set out below.

The Bank's monthly press releases showing the monetary aggregates have been extended to show growth rates over one, three, six and twelve months in seasonally adjusted form. This change took effect with the press release showing the November money figures, published on 20 December 1988.

In accordance with recommendation (c), the consultation procedures concerning proposed changes to methodology have been enhanced. These procedures were used during the recent annual exercise to update the seasonal adjustments in the light of the latest data. It has been agreed that bank interest should no longer be subject to deterministic adjustments (recommendation (b)). It is not intended at this stage to make any other changes to components subject to deterministic adjustment. Thus, the only deterministic adjustments in the present seasonal adjustments are in respect of payment of Petroleum Revenue Tax (see the June 1981 *Bulletin*, pages 200–201, and the June 1983 *Bulletin*, page 257) and in respect of a change in 1986/87 in the timing of payments of Composite Rate Tax by building societies.

The CSO is to undertake the review suggested in recommendation (e). When the review is complete, the Bank and the CSO will discuss its applicability to the monetary aggregates. For the time being, the Bank has responded to recommendation (d) by introducing a procedure for the current updating of deterministic adjustments. Hitherto, it has been the Bank's practice to revise seasonal adjustments only once a year, following the completion of the annual updating exercise. In

Glossary of terms

Stochastic adjustments assume that the pattern of seasonal variation in a series is stable or evolving smoothly in time, and hence may be estimated by some form of moving average of the data.

For some series it is judged that the assumptions underlying stochastic methods do not apply. Usually these are series for which the seasonal pattern undergoes an abrupt change, or for which the size of the seasonal effect changes with some external factor. For these series a method known as *deterministic adjustment* is used. This method treats the objective of the adjustment as being to achieve a smooth path for the adjusted series within the year. The adjusted series is therefore defined by setting each monthly value to the average of the unadjusted values. The adjustment of the current year requires forecasts of the unadjusted values for the remainder of the year. In some cases, a smoothing period other than a year is appropriate; periods of six months or three months are used.

Current updating means re-running the seasonal adjustment procedure each month as new figures are included in the series, or as new forecasts become available which affect the assessment of seasonal patterns in the latest year.

The *bank interest adjustment* is a deterministic adjustment to interest-bearing bank deposits, to allow for the regular increases in bank deposits that occur when accrued interest is credited to deposit accounts. With many types of account it is the practice to credit interest at three, six or twelve-monthly intervals although monthly interest crediting is becoming more common.

A *balanced* seasonally adjusted flow of funds matrix is one in which the rows and columns of the matrix are subject to the same accounting constraints as the unadjusted matrix. For example, in Table 19.1 of the statistical annex, row 5 is the sum of rows 39 and 40, and most rows of the table sum to zero.

future, stochastic adjustments will be reviewed, as before, in an annual updating exercise, and promulgated in November or December each year. But deterministic adjustments are being reviewed regularly throughout the year, and if changes are thought to be appropriate they will be introduced as soon as possible. Such changes would, of course, affect not only the adjustment to the most recent month or two, but possibly those to a much longer run of earlier months as well. On past experience, it seems unlikely that it will be necessary to make such changes more than three times a year. When changes are made, they will be promulgated in the first monthly press release

(*Provisional Estimates of Monetary Aggregates*, published around the 19th of each month). Tables will be provided showing the seasonally adjusted data on both the 'old' and 'new' bases for the latest month and for a run of recent months. The second monthly press release (*Monetary Statistics*, published around the end of the month) will use the same updated adjustments as the provisional press release. This second press release will continue to give an indication of the seasonal adjustments for the

forthcoming month. It will not be possible in either of the press releases to give any indication of the reasons which gave rise to the need for an update to seasonal adjustments, except in cases where the information which gave rise to the update is already publicly available. This new procedure was introduced after the promulgation of the annual update of seasonal adjustments with the publication of the November figures on 20 December 1988.