

# 1991 half-yearly update of seasonal adjustments

The figures in this issue of the Bulletin incorporate the results of the latest update of seasonal adjustments (the monthly Monetary statistics have, since 31 May, also included the results of the latest update). This move from an annual to a half-yearly update was foreshadowed in the note on pages 93–8 of the February Bulletin.

The method of seasonal adjustment used in the latest update is the same as used in the previous update. Full details of the method will be given in a discussion paper to be published shortly. One refinement has been introduced in the treatment of M0: the estimated proportionate effects on the note circulation of those bank holidays which are not fixed in the calendar (ie holidays other than Christmas and New Year) are now allowed to vary from year to year. The other main features of this update are described below.

## (a) Date ranges

The seasonal adjustments are now derived from the following data periods:

- (i) M0: June 1969 to 1 May 1991;
- (ii) monthly M2, M4 and lending (financial year constrained): July 1982 to March 1991;
- (iii) quarterly M4 and its counterparts (financial year constrained): Q3 1982 to Q1 1991;
- (iv) quarterly M4 and its counterparts (calendar year constrained): Q2 1963 to Q1 1991.

## (b) Treatment of outliers

As mentioned in the previous note, atypical observations, which may be manifested as 'outliers', possess the potential to distort estimates of the trend and the seasonal patterns in the series. The treatment of such observations, under the method introduced in the previous update, has been to investigate them fully before deciding whether to modify them. Where an outlying observation has been modified, appropriate offsetting adjustments need also to be applied to other series in order to preserve the accounting relationships.

In addition to those detailed in the February *Bulletin*, the following amounts (in £ millions) have been added—with due regard to sign—to the unadjusted data before deriving the new seasonal adjustments on the following monthly monetary series:

1990 Nov. Interest-bearing bank deposits in M2 and bank retail deposits in M4: **-800**

Building society shares and deposits in M2 and building society retail shares and deposits in M4: **+800**

(associated with the privatisation of the regional electricity companies in early December)

## (c) Deterministic adjustments

In the previous update, petroleum revenue tax (PRT) and building societies' composite rate tax (CRT) were treated in a special 'deterministic' way.

In this update the deterministic adjustment for CRT has been dropped because its impact on the two quarterly series it affects—the PSBR and building societies' net non-deposit sterling liabilities—has always been small and there seems to be no substantial advantage in retaining it.

## (d) Comparison of old and new seasonally adjusted series

The attached table presents the results of the 1991 update. It compares, *inter alia*, the new M0, M4 and lending growth rates (one and twelve-month) with the old.

For M0, the one-month rates are generally smoother around Easter and other bank holidays; other changes reflect the use of the recent data. The new and old twelve-month growth rates are broadly similar although there are modest divergences at some points (even twelve-month growth rates will be affected by the different timing of Easter and other bank holidays from year to year).

For M4 and lending, the recent one-month rates also show a smoother pattern, again as a consequence of using the recent observations. The new twelve-month rates are very similar to the old.

## (e) The next update

The Bank intends to carry out the next update of the adjustments when the data to September 1991 become available and expects to promulgate the results with the October or November 1991 outturn statistics published in November or December. As mentioned in the note on the previous update, the Bank is examining the feasibility and desirability of introducing more frequent updating.

Revised seasonal adjustments: a comparison of 'old' and 'new' seasonally adjusted series<sup>(a)</sup>

Changes (£ millions) and one and twelve-month percentage growth rates

		M0				M4				Sterling lending to M4 private sector									
		Change		Growth rates		Change		Growth rates		Change		Growth rates		Change		Growth rates			
		Old	New	1 month		12 month		Old	New	1 month		12 month		Old	New	1 month		12 month	
				Old	New	Old	New			Old	New	Old	New			Old	New		
1986	Jan.	30	18	0.2	0.1	3.8	3.9	3,834	3,834	1.7	1.7	13.5	13.5	2,385	2,385	1.0	1.0	16.1	16.1
	Feb.	88	86	0.6	0.6	3.9	4.0	3,415	3,415	1.5	1.5	15.0	15.0	4,544	4,544	1.9	1.9	17.2	17.2
	Mar.	56	32	0.4	0.2	3.9	3.7	2,377	2,377	1.0	1.0	14.5	14.5	3,511	3,512	1.5	1.5	16.7	16.7
	Apr.	-25	17	-0.2	0.1	3.0	3.3	2,741	2,741	1.2	1.2	15.0	15.0	2,847	2,848	1.2	1.2	16.5	16.5
	May	117	96	0.8	0.7	3.8	3.8	4,076	4,077	1.7	1.7	16.0	16.0	3,639	3,641	1.5	1.5	16.6	16.6
	June	10	16	0.1	0.1	3.4	3.5	2,624	2,624	1.1	1.1	16.0	16.0	3,967	3,968	1.6	1.6	17.1	17.1
	July	2	8	—	0.1	3.2	3.3	1,927	1,927	0.8	0.8	15.7	15.7	3,838	3,839	1.5	1.5	17.5	17.5
	Aug.	118	99	0.8	0.7	4.1	4.1	2,209	2,208	0.9	0.9	15.0	15.0	4,819	4,820	1.9	1.9	18.2	18.2
	Sept.	41	66	0.3	0.4	4.5	4.7	2,944	2,943	1.2	1.2	15.4	15.4	2,410	2,411	0.9	0.9	17.9	17.9
	Oct.	40	32	0.3	0.2	4.7	4.8	3,132	3,132	1.2	1.2	15.6	15.6	5,135	5,137	1.9	1.9	18.6	18.6
	Nov.	125	119	0.8	0.8	5.1	5.1	3,187	3,186	1.3	1.3	15.8	15.8	4,974	4,962	1.8	1.8	19.4	19.4
	Dec.	148	123	1.0	0.8	5.2	5.0	2,128	2,128	0.8	0.8	15.3	15.3	4,423	4,423	1.6	1.6	19.9	19.9
1987	Jan.	3	16	—	0.1	5.0	5.0	1,847	1,846	0.7	0.7	14.2	14.2	3,436	3,436	1.2	1.2	20.2	20.2
	Feb.	-21	-21	-0.1	-0.1	4.3	4.2	3,804	3,805	1.4	1.4	14.2	14.2	4,346	4,346	1.5	1.5	19.7	19.7
	Mar.	70	87	0.5	0.6	4.3	4.5	2,533	2,535	0.9	0.9	14.1	14.1	2,906	2,907	1.0	1.0	19.2	19.2
	Apr.	81	50	0.5	0.3	5.1	4.8	4,521	4,534	1.7	1.7	14.7	14.7	4,180	4,191	1.4	1.4	19.5	19.5
	May	62	55	0.4	0.4	4.7	4.5	2,840	2,857	1.0	1.0	13.9	13.9	4,357	4,368	1.5	1.5	19.5	19.5
	June	-49	-8	-0.3	-0.1	4.2	4.3	2,560	2,593	0.9	0.9	13.7	13.7	4,369	4,380	1.5	1.5	19.4	19.4
	July	182	162	1.2	1.1	5.5	5.3	4,428	4,455	1.6	1.6	14.6	14.6	5,003	5,016	1.6	1.7	19.5	19.5
	Aug.	-21	-2	-0.1	—	4.5	4.6	3,626	3,607	1.3	1.3	15.0	15.1	3,916	3,929	1.3	1.3	18.8	18.8
	Sept.	106	72	0.7	0.5	4.9	4.6	2,314	2,322	0.8	0.8	14.6	14.6	5,500	5,521	1.8	1.8	19.8	19.8
	Oct.	112	127	0.7	0.8	5.4	5.3	6,200	6,205	2.1	2.1	15.6	15.6	4,452	4,466	1.4	1.4	19.2	19.2
	Nov.	41	42	0.3	0.3	4.8	4.7	2,699	2,733	0.9	0.9	15.2	15.3	5,559	5,562	1.7	1.7	19.0	19.1
	Dec.	60	59	0.4	0.4	4.2	4.2	4,680	4,614	1.6	1.5	16.1	16.1	5,362	5,367	1.6	1.6	19.1	19.1
1988	Jan.	80	82	0.5	0.5	4.7	4.7	3,141	3,098	1.0	1.0	16.5	16.5	6,667	6,684	2.0	2.0	20.0	20.0
	Feb.	100	97	0.6	0.6	5.5	5.5	3,306	3,299	1.1	1.1	16.0	16.0	5,435	5,380	1.6	1.6	20.0	20.1
	Mar.	146	139	0.9	0.9	6.0	5.8	5,058	5,054	1.6	1.6	16.8	16.8	6,141	6,076	1.8	1.8	21.0	21.0
	Apr.	147	150	0.9	0.9	6.4	6.4	3,983	3,999	1.3	1.3	16.3	16.4	7,898	7,974	2.2	2.3	21.9	22.0
	May	15	35	0.1	0.2	6.0	6.3	3,702	3,636	1.2	1.1	16.5	16.5	6,534	6,516	1.8	1.8	22.3	22.4
	June	164	122	1.0	0.8	7.5	7.1	4,292	4,286	1.3	1.3	17.0	16.9	7,568	7,522	2.1	2.1	23.1	23.1
	July	128	150	0.8	0.9	7.0	7.0	7,749	7,903	2.4	2.4	17.9	17.9	8,437	8,537	2.3	2.3	23.8	23.8
	Aug.	72	69	0.4	0.4	7.6	7.4	3,546	3,542	1.1	1.1	17.6	17.6	6,353	6,306	1.7	1.7	24.3	24.3
	Sept.	204	209	1.2	1.3	8.2	8.3	5,538	5,499	1.6	1.6	18.6	18.6	6,440	6,701	1.7	1.7	24.2	24.2
	Oct.	17	21	0.1	0.1	7.5	7.5	4,281	4,246	1.2	1.2	17.6	17.5	7,786	7,508	2.0	1.9	24.9	24.9
	Nov.	42	44	0.2	0.3	7.5	7.5	4,974	4,578	1.4	1.3	18.2	18.0	7,130	6,844	1.8	1.7	24.9	24.8
	Dec.	89	89	0.5	0.5	7.7	7.7	3,698	4,093	1.0	1.2	17.6	17.6	6,613	6,792	1.6	1.7	24.9	24.9
1989	Jan.	38	29	0.2	0.2	7.4	7.3	4,948	5,060	1.4	1.4	18.0	18.0	7,732	7,745	1.9	1.9	24.7	24.7
	Feb.	8	14	—	0.1	6.7	6.8	5,645	5,430	1.6	1.5	18.5	18.5	6,144	6,171	1.5	1.5	24.6	24.5
	Mar.	95	55	0.6	0.3	6.4	6.2	4,716	4,721	1.3	1.3	18.1	18.1	7,066	7,135	1.6	1.7	24.4	24.4
	Apr.	18	105	0.1	0.6	5.5	5.8	4,545	4,520	1.2	1.2	18.1	18.1	7,046	7,057	1.6	1.6	23.6	23.6
	May	95	46	0.6	0.3	6.0	5.9	5,287	5,323	1.4	1.4	18.4	18.4	7,142	7,116	1.6	1.6	23.4	23.4
	June	105	104	0.6	0.6	5.6	5.7	5,217	5,413	1.4	1.4	18.4	18.5	6,595	6,649	1.5	1.5	22.6	22.7
	July	89	76	0.5	0.4	5.3	5.2	4,555	4,018	1.2	1.0	17.0	16.9	7,959	7,824	1.7	1.7	22.0	22.0
	Aug.	192	189	1.1	1.1	6.0	6.0	6,895	6,751	1.8	1.7	17.8	17.6	8,559	8,411	1.8	1.8	22.2	22.2
	Sept.	7	-21	—	-0.1	4.8	4.5	6,182	5,993	1.5	1.5	17.7	17.5	8,113	8,360	1.7	1.8	22.3	22.2
	Oct.	144	147	0.8	0.8	5.5	5.3	4,576	5,628	1.1	1.4	17.6	17.7	6,737	6,225	1.4	1.3	21.6	21.5
	Nov.	66	126	0.4	0.7	5.7	5.7	6,161	4,472	1.5	1.1	17.7	17.4	6,559	6,061	1.3	1.2	21.1	20.9
	Dec.	161	129	0.9	0.7	6.0	5.9	7,223	8,861	1.7	2.1	18.5	18.5	9,326	9,750	1.9	2.0	21.4	21.3
1990	Jan.	-21	-19	-0.1	-0.1	5.7	5.6	6,347	6,295	1.5	1.5	18.6	18.6	5,744	6,533	1.1	1.3	20.6	20.6
	Feb.	137	189	0.8	1.1	6.4	6.7	5,757	4,898	1.3	1.1	18.3	18.2	8,480	7,707	1.7	1.5	20.8	20.7
	Mar.	5	59	—	0.3	5.9	6.7	4,350	4,924	1.0	1.1	18.0	18.0	7,281	7,848	1.4	1.5	20.5	20.5
	Apr.	317	260	1.8	1.4	7.6	7.5	5,777	5,240	1.3	1.2	18.1	17.9	4,970	4,849	0.9	0.9	19.7	19.7
	May	-9	-65	-0.1	-0.4	7.0	6.9	5,376	5,374	1.2	1.2	17.8	17.7	6,647	6,547	1.3	1.2	19.3	19.3
	June	-1	21	—	0.1	6.3	6.3	4,621	5,442	1.0	1.2	17.4	17.5	5,786	5,983	1.1	1.1	18.9	18.8
	July	-34	-70	-0.2	-0.4	5.6	5.5	4,106	2,913	0.9	0.6	17.1	17.0	5,048	4,750	0.9	0.9	17.9	17.8
	Aug.	74	72	0.4	0.4	4.8	4.8	4,247	4,061	0.9	0.9	16.2	16.0	5,313	5,154	1.0	0.9	16.9	16.8
	Sept.	-16	-62	-0.1	-0.3	4.7	4.5	2,642	2,532	0.6	0.5	15.1	14.9	4,178	4,519	0.8	0.8	15.8	15.8
	Oct.	28	50	0.2	0.3	4.0	3.9	2,378	4,028	0.5	0.9	14.4	14.4	6,749	5,977	1.2	1.1	15.6	15.5
	Nov.	-84	-2	-0.5	—	3.1	3.2	7,390	4,878	1.6	1.0	14.4	14.3	7,461	6,636	1.3	1.2	15.6	15.4
	Dec.	93	43	0.5	0.2	2.7	2.7	-975	1,684	-0.2	0.4	12.3	12.3	2,749	3,317	0.5	0.6	14.0	13.8
1991	Jan.	111	110	0.6	0.6	3.5	3.4	2,720	2,554	0.6	0.5	11.3	11.3	2,862	4,307	0.5	0.8	13.3	13.2
	Feb.	-10	82	-0.1	0.4	2.6	2.8	5,057	3,786	1.1	0.8	10.9	10.9	5,845	4,639	1.0	0.8	12.5	12.4
	Mar.	17	28	0.1	0.2	2.7	2.6	115	1,112	—	0.2	9.9	9.9	732	1,627	0.1	0.3	11.1	11.1

(a) The 'new' series referred to here relate to those published in the *Monetary statistics* on 31 May.