

Seasonal adjustment of the British Bankers' Association analysis of advances

Seasonally adjusted changes for the quarterly analysis of advances published by the British Bankers' Association were first given in the September 1963 *Bulletin*; and this series has since been continued in *Financial Statistics*. The method of adjustment used has been the modified version of the United States Bureau of the Census Method II—commonly known as Univac—which was also employed until earlier this year to adjust the London clearing banks' monthly figures of deposits and advances.

As explained in an article in the March *Bulletin*,⁽¹⁾ this Univac method proved to possess certain defects when applied to banking data; and for the monthly figures of the clearing banks' advances, it has already been replaced by a new method. Now, in the figures which follow, the Univac method is also replaced in adjusting the quarterly analysis of advances provided by the British Bankers' Association. Because the seasonal adjustment used for the monthly figures is not suitable for a quarterly series the method now adopted for this series is based on a new moving average method described in 'Moving Seasonal Adjustment of Economic Time Series', by J. P. Burman, in the *Journal of the Royal Statistical Society* (Series A, Volume 128, Part 4, 1965).

This new method has been applied with suitable allowance for the effects of the variable make-up date on the clearing banks' figures—which account for over 80% of the total advances shown in the analysis. The results, which are consistent with the latest seasonally adjusted series of clearing banks' monthly figures, are shown in the tables, for the period from 1957 onwards; the individual groups shown account for over 90% of total advances. The main differences from the previous seasonally adjusted series are in the quarters to mid-February—where the new figures show larger seasonally adjusted increases (or smaller falls) both in total advances and in most individual categories—and to mid-November—when the reverse is true.

It should be noted particularly that any form of seasonal adjustment to the monthly or quarterly figures of advances which is based on past experience will yield results which are of only limited use in the current year. This is because the timing of the Exchequer's receipts of tax—which have a marked effect upon bank advances and deposits—has been radically altered by the change to corporation tax. The seasonal adjustments make no allowance for changes of this kind.

The tables appear overleaf.

(1) Page 46.

British Bankers' Association

Changes from

£ millions

	Original figures				Seasonal variation				Seasonally adjusted figures			
	Feb.	May	Aug.	Nov.	Feb.	May	Aug.	Nov.	Feb.	May	Aug.	Nov.
Total (excluding advances to nationalised industries)												
1957 ...	+103	+ 86	- 23	-131	+ 50	+ 18	- 8	- 60	+ 53	+ 68	- 15	- 71
1958 ...	+ 12	+ 83	+ 59	+117	+ 49	+ 31	- 20	- 65	- 37	+ 52	+ 79	+182
1959 ...	+248	+209	+182	+144	+ 51	+ 45	- 25	- 93	+197	+164	+207	+237
1960 ...	+246	+202	+ 65	+ 38	+ 68	+ 57	- 39	-113	+178	+145	+104	+151
1961 ...	+161	+180	+ 16	-223	+ 80	+ 72	- 45	-116	+ 81	+108	+ 61	-107
1962 ...	+157	+ 83	+ 86	+ 25	+118	+ 33	- 42	- 87	+ 39	+ 50	+128	+112
1963 ...	+266	+203	+ 76	- 21	+ 97	+ 62	- 37	-130	+169	+141	+113	+109
1964 ...	+246	+125	+178	+146	+106	+ 64	- 36	-155	+140	+ 61	+214	+301
1965 ...	+ 96	+118	+ 28	-103	+109	+ 91	- 52	-161	- 13	+ 27	+ 80	+ 58
1966 ...	+204	+145			+111	+ 94			+ 93	+ 51		
Total manufacturing industries^(a)												
1957 ...	+ 65	+ 39	- 24	- 48	+ 26	+ 6	- 13	- 19	+ 39	+ 33	- 11	- 29
1958 ...	+ 3	+ 33	+ 3	+ 16	+ 25	+ 11	- 16	- 22	- 22	+ 22	+ 19	+ 38
1959 ...	+ 48	+ 42	+ 9	+ 21	+ 26	+ 14	- 20	- 23	+ 22	+ 28	+ 29	+ 44
1960 ...	+ 47	+ 41	+ 20	+ 57	+ 31	+ 13	- 21	- 35	+ 16	+ 28	+ 41	+ 92
1961 ...	+104	+ 60	- 10	- 33	+ 41	+ 14	- 22	- 40	+ 63	+ 46	+ 12	+ 7
1962 ...	+ 84	+ 32	+ 15	- 48	+ 59	—	- 18	- 35	+ 25	+ 32	+ 33	- 13
1963 ...	+ 95	+ 29	- 8	- 52	+ 57	+ 4	- 17	- 48	+ 38	+ 25	+ 9	- 4
1964 ...	+ 77	+ 18	+ 47	+ 54	+ 61	+ 4	- 15	- 58	+ 16	+ 14	+ 62	+112
1965 ...	+ 89	+ 25	+ 97	+ 5	+ 67	+ 9	- 20	- 64	+ 22	+ 16	+117	+ 69
1966 ...	+122	+ 29			+ 74	+ 10			+ 48	+ 19		
Engineering, etc.^(b)												
1957 ...	+ 17	+ 11	—	- 20	+ 10	- 7	+ 4	- 7	+ 7	+ 18	- 4	- 13
1958 ...	+ 8	—	+ 10	+ 9	+ 10	- 5	+ 2	- 8	- 2	+ 5	+ 8	+ 17
1959 ...	+ 24	+ 3	+ 20	—	+ 11	- 6	+ 4	- 10	+ 13	+ 9	+ 16	+ 10
1960 ...	+ 23	+ 14	+ 47	+ 34	+ 13	- 8	+ 4	- 14	+ 10	+ 22	+ 43	+ 48
1961 ...	+ 56	+ 8	+ 13	- 1	+ 18	- 9	+ 4	- 15	+ 38	+ 17	+ 9	+ 14
1962 ...	+ 33	+ 8	+ 4	- 4	+ 25	- 15	+ 4	- 10	+ 8	+ 23	—	+ 6
1963 ...	+ 26	- 19	- 3	- 18	+ 21	- 12	+ 5	- 14	+ 5	- 7	- 8	- 4
1964 ...	+ 18	- 11	+ 35	+ 22	+ 21	- 12	+ 5	- 16	- 3	+ 1	+ 30	+ 38
1965 ...	+ 54	+ 16	+ 54	+ 22	+ 23	- 13	+ 6	- 20	+ 31	+ 29	+ 48	+ 42
1966 ...	+ 62	- 22			+ 27	- 16			+ 35	- 6		

(a) Includes the following groups: chemicals, iron and steel and allied trades, non-ferrous metals, engineering, etc., cotton, wool, other textiles, leather and rubber, and food, drink and tobacco.

(b) Included in "total manufacturing industries".

quarterly analysis of advances

previous quarter

£ millions

	Original figures				Seasonal variation				Seasonally adjusted figures			
	Feb.	May	Aug.	Nov.	Feb.	May	Aug.	Nov.	Feb.	May	Aug.	Nov.
Food, drink and tobacco^(a)												
1957 ...	+ 7	+18	-27	- 4	- 3	+15	-17	+ 6	+10	+ 3	-10	-10
1958 ...	-10	+31	-13	+16	- 3	+14	-17	+ 6	- 7	+17	+ 4	+10
1959 ...	+14	+19	-25	+26	- 4	+16	-18	+ 4	+18	+ 3	- 7	+22
1960 ...	- 1	+ 2	-26	+19	- 1	+14	-17	+ 3	—	-12	- 9	+16
1961 ...	+22	+14	-12	-10	—	+13	-16	+ 1	+22	+ 1	+ 4	-11
1962 ...	+ 2	+13	- 4	-12	+ 4	+ 8	-12	—	- 2	+ 5	+ 8	-12
1963 ...	+11	+21	- 1	-11	+ 6	+ 6	- 8	- 4	+ 5	+15	+ 7	- 7
1964 ...	+ 4	+ 8	+15	+22	+ 7	+ 4	- 7	- 5	- 3	+ 4	+22	+27
1965 ...	- 3	- 5	+33	+ 1	+ 8	+ 3	- 6	- 6	-11	- 8	+39	+ 7
1966 ...	+15	+ 5			+ 8	+ 5			+ 7	—		
Iron and steel and Non-ferrous metals^(a)												
1957 ...	+25	- 4	- 1	- 9	+ 9	- 6	+ 1	- 4	+16	+ 2	- 2	- 5
1958 ...	—	- 5	+10	+ 5	+ 8	- 4	- 1	- 2	- 8	- 1	+11	+ 7
1959 ...	+ 2	+11	- 2	- 1	+ 6	- 1	- 4	- 2	- 4	+12	+ 2	+ 1
1960 ...	+ 6	+10	+ 1	+14	+ 7	+ 1	- 7	- 3	- 1	+ 9	+ 8	+17
1961 ...	+ 5	—	—	- 4	+ 9	—	- 6	- 4	- 4	—	+ 6	—
1962 ...	+13	—	+ 7	- 7	+12	- 2	- 7	- 2	+ 1	+ 2	+14	- 5
1963 ...	+26	+16	—	- 6	+12	- 1	- 7	- 6	+14	+17	+ 7	—
1964 ...	+21	+ 3	- 6	+14	+15	- 1	-10	- 5	+ 6	+ 4	+ 4	+19
1965 ...	+25	- 2	-12	+11	+15	+ 2	-13	- 2	+10	- 4	+ 1	+13
1966 ...	+18	+15			+13	+ 3			+ 5	+12		
Textiles^{(a)(b)}												
1957 ...	+18	+10	+ 9	-14	+ 5	+ 2	+ 2	-10	+13	+ 8	+ 7	- 4
1958 ...	+ 1	+ 2	- 1	- 8	+ 6	+ 3	+ 1	-11	- 5	- 1	- 2	+ 3
1959 ...	+ 3	+ 5	+11	- 1	+ 6	+ 4	—	-10	- 3	+ 1	+11	+ 9
1960 ...	+12	+ 6	+ 2	- 6	+ 7	+ 4	—	-14	+ 5	+ 2	+ 2	+ 8
1961 ...	+14	+15	—	-11	+ 9	+ 5	+ 1	-17	+ 5	+10	- 1	+ 6
1962 ...	+10	+ 8	+ 4	-13	+11	+ 6	—	-14	- 1	+ 2	+ 4	- 4
1963 ...	+11	+14	+ 2	-11	+ 9	+ 6	—	-17	+ 2	+ 8	+ 2	+ 6
1964 ...	+25	+17	+10	- 3	+10	+ 8	+ 1	-23	+15	+ 9	+ 9	+20
1965 ...	—	+ 7	+ 9	-29	+13	+11	- 1	-24	-13	- 4	+10	- 5
1966 ...	+10	+14			+14	+10			- 4	+ 4		

(a) Included in "total manufacturing industries".

(b) Cotton, wool, and other textiles.

British Bankers' Association

Changes from

£ millions

	Original figures				Seasonal variation				Seasonally adjusted figures			
	Feb.	May	Aug.	Nov.	Feb.	May	Aug.	Nov.	Feb.	May	Aug.	Nov.
Chemicals^(a)												
1957 ...	- 4	—	- 3	+ 1	+ 3	—	- 1	- 2	- 7	—	- 2	+ 3
1958 ...	+ 2	—	- 1	—	+ 3	—	- 1	- 2	- 1	—	—	+ 2
1959 ...	—	+ 4	+ 2	- 2	+ 2	+ 2	- 2	- 2	- 2	+ 2	+ 4	—
1960 ...	+ 2	+ 5	- 4	+ 1	+ 3	—	- 2	- 1	- 1	+ 5	- 2	+ 2
1961 ...	+ 5	+20	-12	- 6	+ 3	+ 1	- 3	- 1	+ 2	+19	- 9	- 5
1962 ...	+20	+ 2	+ 2	—	+ 3	+ 1	- 3	- 3	+17	+ 1	+ 5	+ 3
1963 ...	+18	- 7	- 3	- 3	+ 6	+ 2	- 4	- 4	+12	- 9	+ 1	+ 1
1964 ...	+10	- 2	- 8	+ 2	+ 5	+ 3	- 4	- 4	+ 5	- 5	- 4	+ 6
1965 ...	+ 5	+ 6	+ 9	+ 3	+ 6	+ 2	- 5	- 4	- 1	+ 4	+14	+ 7
1966 ...	+17	+ 7			+ 7	+ 2			+10	+ 5		
Unclassifiable industry and trade												
1957 ...	- 2	+ 2	+13	- 5	- 1	- 1	+ 6	- 5	- 1	+ 3	+ 7	—
1958 ...	- 2	+ 3	+ 9	—	—	—	+ 5	- 5	- 2	+ 3	+ 4	+ 5
1959 ...	+13	+ 7	+15	+ 9	—	—	+ 5	- 5	+13	+ 7	+10	+14
1960 ...	+16	+ 3	+13	+ 2	- 1	—	+ 7	- 8	+17	+ 3	+ 6	+10
1961 ...	+ 8	+21	+ 8	-22	—	—	+ 8	- 9	+ 8	+21	—	-13
1962 ...	+22	+ 5	+ 8	+13	+ 2	—	+ 6	- 5	+20	+ 5	+ 2	+18
1963 ...	+14	+12	+15	- 3	- 1	—	+ 9	- 8	+15	+12	+ 6	+ 5
1964 ...	+16	- 2	+31	+13	- 2	+ 1	+11	-12	+18	- 3	+20	+25
1965 ...	+ 2	+20	+26	-18	- 1	+ 2	+11	-13	+ 3	+18	+15	- 5
1966 ...	+16	+28			- 2	+ 3			+18	+25		
Retail trade												
1957 ...	+ 1	+10	- 9	+ 1	+ 5	+ 4	- 8	—	- 4	+ 6	- 1	+ 1
1958 ...	+ 3	+18	- 9	+25	+ 6	+ 6	-12	- 1	- 3	+12	+ 3	+26
1959 ...	+34	+20	+14	+33	+ 7	+ 8	-16	- 2	+27	+12	+30	+35
1960 ...	+36	+31	-11	+ 5	+10	+12	-24	—	+26	+19	+13	+ 5
1961 ...	+ 7	+14	-16	-13	+11	+13	-25	—	- 4	+ 1	+ 9	-13
1962 ...	+26	+25	-18	+12	+15	+11	-28	+ 4	+11	+14	+10	+ 8
1963 ...	+48	+25	-21	+17	+13	+16	-32	+ 2	+35	+ 9	+11	+15
1964 ...	+34	+16	-18	+19	+16	+15	-34	+ 1	+18	+ 1	+16	+18
1965 ...	+20	+28	-35	-10	+16	+19	-38	+ 3	+ 4	+ 9	+ 3	-13
1966 ...	+29	+36			+15	+20			+14	+16		

(a) Included in "total manufacturing industries".

quarterly analysis of advances (continued)

previous quarter

£ millions

	Original figures				Seasonal variation				Seasonally adjusted figures			
	Feb.	May	Aug.	Nov.	Feb.	May	Aug.	Nov.	Feb.	May	Aug.	Nov.
Builders and Building materials												
1957 ...	+ 2	+ 1	—	- 5	+ 3	+ 2	—	- 5	- 1	- 1	—	—
1958 ...	+ 1	+ 2	+ 5	+ 4	+ 4	+ 1	- 1	- 4	- 3	+ 1	+ 6	+ 8
1959 ...	+13	+10	+10	+ 5	+ 3	+ 2	+ 1	- 8	+10	+ 8	+ 9	+13
1960 ...	+19	+16	+12	+ 2	+ 5	+ 3	—	-10	+14	+13	+12	+12
1961 ...	+11	+ 9	+ 8	-13	+ 6	+ 4	—	-11	+ 5	+ 5	+ 8	- 2
1962 ...	+15	+ 3	- 2	- 6	+ 8	+ 3	- 1	- 9	+ 7	—	- 1	+ 3
1963 ...	+24	+22	+ 9	- 9	+ 7	+ 5	—	-13	+17	+17	+ 9	+ 4
1964 ...	+13	+15	+15	+ 7	+ 8	+ 5	—	-16	+ 5	+10	+15	+23
1965 ...	+26	+19	+10	-15	+10	+ 7	- 2	-16	+16	+12	+12	+ 1
1966 ...	+27	+10			+ 9	+10			+18	—		
Agriculture												
1957 ...	+ 1	+ 6	+ 2	-10	- 6	+ 3	+ 8	- 5	+ 7	+ 3	- 6	- 5
1958 ...	-11	+ 6	+17	+14	- 5	+ 5	+ 5	- 5	- 6	+ 1	+12	+19
1959 ...	+10	+25	+23	+10	- 6	+ 5	+ 8	- 7	+16	+20	+15	+17
1960 ...	+ 7	+23	+16	+ 4	- 9	+ 8	+ 8	- 9	+16	+15	+ 8	+13
1961 ...	- 1	+17	+ 9	-21	-10	+11	+ 7	- 8	+ 9	+ 6	+ 2	-13
1962 ...	- 8	+13	+27	+ 7	- 7	+ 7	+ 7	- 5	- 1	+ 6	+20	+12
1963 ...	- 4	+10	+27	+ 8	-10	+10	+ 9	- 8	+ 6	—	+18	+16
1964 ...	+ 1	+24	+23	+11	-12	+11	+10	- 9	+13	+13	+13	+20
1965 ...	-11	+11	+11	- 3	-14	+13	+ 9	- 9	+ 3	- 2	+ 2	+ 6
1966 ...	- 2	+ 7			-16	+15			+14	- 8		
Hire purchase												
1957 ...	+ 5	+ 6	—	- 4	+ 1	+ 3	- 1	- 2	+ 4	+ 3	+ 1	- 2
1958 ...	—	+ 1	- 4	+13	—	+ 3	- 2	- 2	—	- 2	- 2	+15
1959 ...	+19	+24	+17	+14	+ 1	+ 6	- 4	- 7	+18	+18	+21	+21
1960 ...	+12	+22	- 5	- 6	+ 3	+10	- 5	- 9	+ 9	+12	—	+ 3
1961 ...	- 2	+13	+11	-42	+ 4	+12	- 7	- 8	- 6	+ 1	+18	-34
1962 ...	-11	- 1	+ 3	- 3	+ 5	+ 7	- 4	- 6	-16	- 8	+ 7	+ 3
1963 ...	- 5	+16	-10	- 4	+ 3	+ 9	- 5	- 7	- 8	+ 7	- 5	+ 3
1964 ...	+15	+15	+10	+ 4	+ 3	+ 9	- 5	- 9	+12	+ 6	+15	+13
1965 ...	+ 8	+12	-11	-24	+ 3	+13	- 7	- 9	+ 5	- 1	- 4	-15
1966 ...	- 4	- 9			+ 3	+10			- 7	-19		

British Bankers' Association quarterly analysis of advances (concluded)

Changes from previous quarter

£ millions

	Original figures				Seasonal variation				Seasonally adjusted figures			
	Feb.	May	Aug.	Nov.	Feb.	May	Aug.	Nov.	Feb.	May	Aug.	Nov.
Other financial												
1957 ...	+13	+10	-2	-34	+7	+1	+1	-9	+6	+9	-3	-25
1958 ...	+8	+4	+9	-4	+7	+2	—	-10	+1	+2	+9	+6
1959 ...	+23	+20	+28	+12	+8	+3	+1	-14	+15	+17	+27	+26
1960 ...	+36	+22	+4	-20	+9	+5	—	-16	+27	+17	+4	-4
1961 ...	+13	+18	+13	-15	+9	+6	—	-15	+4	+12	+13	—
1962 ...	+9	-6	+18	+29	+12	+1	+1	-12	-3	-7	+17	+41
1963 ...	+38	+19	+27	+7	+10	+4	+3	-18	+28	+15	+24	+25
1964 ...	+41	+3	+30	+20	+12	+3	+4	-22	+29	—	+26	+42
1965 ...	-6	+14	-19	-13	+13	+4	+4	-21	-19	+10	-23	+8
1966 ...	+2	+20			+12	+4			-10	+16		
Personal and professional												
1957 ...	+9	+1	+7	-15	+5	—	+5	-10	+4	+1	+2	-5
1958 ...	+3	+4	+12	+47	+5	+2	+3	-10	-2	+2	+9	+57
1959 ...	+54	+50	+57	+37	+5	+3	+5	-18	+49	+47	+52	+55
1960 ...	+57	+42	+11	-9	+8	+6	+2	-19	+49	+36	+9	+10
1961 ...	+9	+14	—	-41	+8	+8	+2	-19	+1	+6	-2	-22
1962 ...	+8	+14	+36	+27	+13	+4	—	-12	-5	+10	+36	+39
1963 ...	+45	+57	+45	+14	+7	+11	+1	-21	+38	+46	+44	+35
1964 ...	+36	+30	+42	+6	+9	+11	+2	-24	+27	+19	+40	+30
1965 ...	-17	-5	-42	-40	+7	+16	-2	-22	-24	-21	-40	-18
1966 ...	+13	+1			+6	+15			+7	-14		