Seasonal adjustment of the quarterly analysis of bank advances

In 1967 the quarterly analysis of bank advances published by the British Bankers' Association was replaced by a more comprehensive analysis covering all banks in the United Kingdom and based on the Standard Industrial Classification. The reasons for the change and the main differences between the old and the new series were described in an article published in the March 1967 Bulletin, page 48.

The new series is now available for a period of five years from mid-February 1967,1 long enough to give some indication of seasonal patterns. Figures for each of the various categories of borrower have therefore been examined, and seasonal adjustment factors have been calculated for those showing some degree of seasonality in their behaviour. The same moving average method was used as for the earlier British Bankers' Association series,2 for which seasonally adjusted changes were published in the September 1966 Bulletin, page 257, and in the Central Statistical Office's Financial Statistics.

The tables at the end of this note show, in the columns on the left-hand side, the actual amount outstanding to each category of borrower at mid-February 1967 and mid-February 1972, and the successive quarterly changes between the two dates. In the right-hand columns, changes in categories which have revealed consistent seasonal fluctuations are shown after adjustment, while the remaining categories (footnoted a) are left unadjusted. The "seasonally adjusted" changes in the grand total of advances, and in some of the sub-totals, are thus the sums of both adjusted and unadjusted components. The tables exclude advances by the Northern Ireland banks which, although comparable with the other banks' figures, are in slightly less detail.

The seasonal factors used in the production of the adjusted changes are given on page 225. The recorded amounts of advances outstanding at the quarterly reporting dates are divided by these factors; a factor higher than 100 thus has the effect of reducing a figure which is seasonally high, while one of less than 100 increases a figure which is seasonally low. Many categories, notably "chemicals and allied industries", "other engineering and metal goods", "mining and quarrying", "transport and communication" and "professional, scientific and miscellaneous services" (which contains many unincorporated businesses) have high factors at mid-February, which largely reflect borrowing to pay corporation tax and surtax. "Construction", on the other hand, has its peak at mid-May when the building season is in full swing, while for "agriculture, forestry and fishing" the highest point is at mid-August, when farm income has probably been running below expenditure for some time, and the need for bank finance is therefore greatest. In lending to persons for house purchase,

Except for the Northern Ireland banks, whose figures are available only since mid-February 1968.
 The method was described in an article entitled "Moving Seasonal Adjustment of Economic Time Series", by J. P. Burman, published in the Journal of the Royal Statistical Society (Series A. Volume 128, Part 4, 1965).

the greatest seasonal demand seems to arise in the August and November quarters when property bought in the spring is paid for; the same timing evidently applies to lending to persons for other purposes, but here the reasons are not so obvious – though payment for summer holidays is possibly one.

For the whole period up to mid-September 1971, banks were subject not only to specific ceilings on their sterling lending but also to official guidance as to the direction of that lending. These restrictions will have tended to slow down the increase in the total of bank advances and to distribute them differently. It follows that the seasonal behaviour of advances may possibly have been affected, in particular of those to low priority categories, and that the factors calculated may not necessarily be appropriate to the advances figures emerging under the arrangements for credit control recently introduced. However, despite their limitations, the seasonally adjusted changes are useful, and they will be included in future published analyses.

Quarterly analysis of advances by banks in Great Britain

£ millions

	Amount out- stand-	Changes from
	ing	As recorded
	1967	1967 1968 1969
- 1116	Feb.	May Aug. Nov. Feb. May Aug. Nov. Feb. May Aug. Nov.
To U.K. residents Manufacturing: Food, drink and tobacco Chemicals and allied	241	+16 + 25 + 11 - 8 + 26 - 26 + 5 + 16 + 43 - 6 + 24
industries Metal manufacture ^a Electrical engineering ^a Other engineering and metal	214 197 243	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
goods Shipbuilding ^a Vehicles ^a Textiles, leather and clothing	482 65 270 227	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Other manufacturing	298	+12 + 14 - 3 + 7 + 6 + 8 - 3 + 43 + 28 + 7 - 13
Total manufacturing	2,236	+34 + 55 + 59 + 21 + 37 + 26 - 50 + 332 + 172 + 125 + 11
Other production: Agriculture, forestry and fishing Mining and quarrying Construction	474 81 345	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Total other production	900	+30 + 26 - 1 - 3 + 30 + 8 + 7 + 38 - 42 + 21 - 20
Financial: Hire purchase finance companies ^b Property companies ^a U.K. banks ^{ab} Other financial	126 328 23 296	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Total financial	773	-18 + 23 + 24 + 93 + 45 + 6 - 2 + 4 + 14 + 23 - 48
Services: Transport and communication Public utilities (gas, electricity and water)	162	- 9 + 3 + 17 + 8 - 1 - 12 + 3 + 10 + 28 + 15 + 1
and national government ^a Local government services ^{ab} Retail distribution Other distribution Professional, scientific and	63 103 338 356	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
miscellaneous services	471	+12 - 1 - 2 + 55 + 26 - 11 + 10 + 63 - 29 - 8 - 38
Total services	1,493	+12 + 19 + 54 +129 + 75 -102 - 9 +140 +115 + 13 -213
Personal: House purchase Other personal	323 497	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
Total personal	820	+22 + 64 + 55 + 6 - 9 + 29 + 2 - 12 - 42 - 21 - 35
Total to U.K. residents	6,223	+80 +187 +191 +245 +178 - 32 - 53 +503 +217 +161 -305
To Overseas residentsac	1,046	+19 + 92 + 22 +378 +125 +198 +242 +260 +446 + 8 + 76
Total advances	7,269	+99 +279 +214 +623 +303 +166 +190 +762 +663 +168 -229

b Excluding funds placed through the specialised financial markets.
 c Largely advances in foreign currencies; figures include banks overseas but exclude funds placed through the specialised financial markets.

previous quarter

Seasonally adjusted

1967	1968	1969
May Aug. Nov.	Feb. May Aug. Nov.	Feb. May Aug. Nov.
+ 1 + 42 + 9	- 9 + 9 - 6 + 2	+ 17 + 22 + 17 + 22
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	+ 22 - 4 + 1 + 17 + 31 - 3 + 12 - 35 + 16 + 33 + 15 + 13
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	+ 2 - 6 + 27 + 35 + 9 + 1 + 5 + 12 - 22 + 23 - 15 - 56 - 4 + 13 + 5 + 3 - 1 - 4 + 10 + 13	+ 17 + 46 + 23 + 12 + 19 + 12 + 16 + 23 + 91 - 3 + 54 + 31 + 23 + 15 - 5 + 11 + 38 + 13 + 11 + 5
+ 6 + 70 +128	- 39 + 10 + 38 + 27	+274 +131 +144 + 99
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c} + 14 - 11 + 2 - 10 \\ + 22 - 21 & - + 1 \\ + 8 - 15 + 2 + 7 \end{array}$
+24 + 13 + 13	+ 1 + 26 - 9 + 22	+ 44 - 47 + 4 - 2
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	+ 8 + 15 - 14 + 7 + 6 + 6 - 20 + 3 + 9 + 4 + 7 + 46 + 19 + 26 + 24	- 10 - 6 + 2 - 11 - 10 - 13 + 11 + 1 + 4 + 13 + 21 - 20 - 14 + 16 + 6 + 2
-21 + 36 + 41	+ 63 + 43 + 22 + 18	- 30 + 10 + 40 - 28
- 1 + 10 + 19	- 11 + 9 5 + 4	- 8 + 37 + 24 + 4
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	+ 6 - 13 + 24 - 26 + 21 + 102 - 13 - 105 + 13 - 19 - 8 - 7 + 26 + 24 - 2 - 10
+14 + 12 + 17	+ 19 + 29 + 4 + 32	+ 22 - 26 + 8 - 17
+ 1 + 35 + 98	+ 72 + 68 - 84 + 41	+ 80 +105 + 33 -161
+ 9 + 10 + 11 +20 + 34 + 50	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	+ 8 + 1 - 3 - 1 - 12 - 34 - 40 - 29
+29 + 44 + 61	+ 12 - + 7 + 8	- 4 - 33 - 43 - 30
+39 +198 +341	+109 +147 - 26 +116	+364 +166 +178 -122
+19 + 92 + 22	+378 +125 +198 +242	+260 +446 + 8 + 76
+58 +290 +363	+487 +272 +172 +358	+624 +612 +186 - 46

Quarterly analysis of advances by banks in Great Britain continued

£ millions

£ millions			Changes fr	om previous qua	rter		Amount out-
	As recorded						ing
		1970		19	71	1972	1972
	Feb.	May A	Aug. Nov.	Feb. May	Aug. Nov.	Feb.	Feb.
To U.K. residents Manufacturing: Food, drink and tobacco Chemicals and allied industries Metal manufacturea Electrical engineeringa Other engineering and metal goods Shipbuildinga Vehiclesa Textiles, leather and clothing Other manufacturing	+ 6 + + 31 + - 19 + - 16 + + 57 + + 20 + + 44 - + 21 + + 17 +	18 + 45 + 30 + 50 + 25 + 9 + 20 +	17 + 12 3 - 1 10 - 16 31 + 16 58 + 8 28 + 20 10 + 15 29 - 48 17 + 2	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4 - 52 + 20 0 + 16 + 8 3 + 18 - 25 4 - 36 - 9 7 - 18 - 24 4 + 16 + 18 0 + 15 - 45 4 + 25 - 33 6 - 20 - 22	+ 28 + 11 + 24 - 17 + 42 + 14 + 39 - 5 - 1	427 337 173 367 907 368 463 292 470
Total manufacturing	+162 +	275 +	169 + 3	+ 308 - 159	9 - 35 -112	+135	3,804
Other production: Agriculture, forestry and fishing Mining and quarrying Construction	- 23 + - 3 + + 37 +	7 +	33 - 2 16 - 5 1 + 7	+ 10 +	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$-\frac{16}{68}$	575 150 608
Total other production	+ 11 +	53 +	49 + 1	+ 12 + 4	1 + 51 + 69	+ 52	1,333
Financial: Hire purchase finance companies ^b Property companies ^a U.K. banks ^{ab} Other financial	- 6 + 9 + 27 +	- + 5 - 3 - 9 +	2 - 8 3 + 6 1 + 12 26 + 7	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	+ 14 + 126 + 16 + 120	193 624 114 897
Total financial	+ 30 +	11 +	23 + 18	+ 107 +160	+ 46 +221	+274	1,872
Services: Transport and communication Public utilities (gas, electricity and water) and national government ^a Local government services ^{ab} Retail distribution Other distribution Professional, scientific and miscellaneous services	+ 23 - + 20 - + 42 - - 4 + - 2 + + 42 +	1 + 31 -	1 - 2 44 - 69 19 + 1 11 - 3 29 + 6 3 - 12	+ 75 - 10 + 22 - 55 - 55 + 82 + 9 + 33	7 - 11 + 6 2 + 22 + 3 3 + 25 + 24	+ 33 + 25 - 24 + 13 + 24 +141	301 202 45 420 622 825
Total services	+121 -	15 +	47 — 80	+ 196 + 85	5 + 35 + 89	+211	2,415
Personal: House purchase Other personal	+ 3 + 6 +	1 + 39 +	18 + 11 46 + 7		7 + 21 + 33 9 + 94 + 154	+ 49 + 187	533 1,108
Total personal	+ 8 +	40 +	64 + 18	+ 39 + 55	+115 +186	+237	1,641
Total to U.K. residents	+332 +	363 +	353 — 41	+ 662 +182	2 +212 +452	+910	11,020
To Overseas residentsac	+ 48 +	731 +	882 +398	+ 897 +55	5 +382 -267	- 83	6,455
Total advances	+380 +	1,094 +	1,235 +357	+1,559 +73	7 +593 +186	+827	17,475

a Series not seasonally adjusted.
 b Excluding funds placed through the specialised financial markets.
 c Largely advances in foreign currencies; figures include banks overseas but exclude funds placed through the specialised financial markets.

Changes from previous quarter

Seasonally adjusted

1970		1971	1972
Feb. May Aug.	Nov.	Feb. May Aug. Nov.	Feb.
+ 6 + 8 + 10 + 12 + 28 + 6 - 19 + 45 + 10 - 16 + 30 + 31 + 32 + 47 + 66 + 20 + 25 + 28 + 44 - 9 + 10 + 3 + 10 + 10 + 11 + 47 + 21	6 + 6 - 1 - 16 - + 10 - 6 + 34 - 6 + 20 - 1 + 15 - 1 + 2 -	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	+ 28 - 15 + 24 - 17 + 8 + 14 + 39 - 25 - 9
+ 93 + 231 + 192	+105 +	- 225 - 206 - 7 - 7	+ 47
- 5 - 2 + 12 - 5 + 7 + 15 + 26 + 38 + 10	_ +		+ 5 - 5 + 53
+ 16 + 43 + 37	+ 20 +	15 + 33 + 38 + 90	+ 53
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	+ 6 + + 12 -	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	- 4 +126 + 16 + 79
- 2 + 7 + 40	+ 39 +	72 +153 + 67 +256	+217
- 1 - 22 + 11	_ +	- 64 - 9 - 12 + 14	+ 4
+ 20 - 1 + 44 + 42 - 31 - 19 + 2 - 1 - 2 - 10 + 8 + 18	+ 1 + + 6 -	-22 - 7 - 11 + 6	+ 25 24 + 21 + 13
+ 3 + 20 + 20	+ 12 +	12 + 18 + 15 + 42	+ 89
+ 56 - 27 + 72	- 24 +	123 + 80 + 58 +153	+128
+ 5 + 6 + 11 + 12 + 40 + 32	+ 10 + 13 +		+ 52 + 198
+ 17 + 46 + 43	+ 23 +	48 + 64 + 89 +194	+250
+180 + 300 + 384	+163 +	483 +124 +245 +686	+695
+ 48 + 731 + 882	+398 +	897 +555 +382 -267	- 83
+228 +1,031 +1,266	+561 +	1,380 +679 +627 +419	+612

Seasonal factors

Feb.	May	Aug.	Nov.
98·7 104·3	104·7 100·3	97·9 98·8	98·7 96·6
101-2	101-6	100.5	97.3
98·3 98·9	101·7 102·4	107·7 101·6	92·3 97·1
97·9 101·1 100·6	98·3 100·2 101·8	102·4 101·2 99·8	101·4 97·5 97·8
102·8	103-8	100.0	93-4
101.7	102·1	99-5	96-8
106-2	101.0	97.0	95.8
96·8 100·0	103·5 99·6	101·2 102·2	98·6 98·2
102-6	102-2	99-4	95.7
100·1 99·3	98·6 98·9	100·5 101·4	100·7 100·3