8-1968

Economic Trends: The Economic Situation - Expanded Provisional Input-Output Tables for 1963 Productive Potential and the Demand for Labour Charts and Statistics

Central Statistical Office

ECONOMIC TRENDS

No. 178   August 1968

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ECONOMIC TRENDS

No. 178

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This publication provides charts and statistics illus-trating trends in the United Kingdom economy. In addition, there are articles which comment on economic statistics, introduce new series or describe methods used in compiling official statistics.

2. The purpose of the charts and tables is to provide the broad background to the trends of the economy rather than to give detailed information about particular series (for which the *Monthly Digest of Statistics* and other publications may be consulted). Economically related series are grouped together and consequently the same series may appear on more than one page.

3. Most series are seasonally adjusted, that is, normal seasonal changes have as far as possible been removed from the figures; by this means movements in different periods may more readily be compared, but it must be borne in mind that the seasonal adjustments are subject to some uncertainties. For series which still show considerable short-term fluctuations after seasonal adjustment a trend line has been fitted by the use of weighted moving averages.

4. For convenience of comparison, index numbers in some charts and tables are referred to a common date as base which differs from the original base dates to which their weighting applies.

5. In order that recent movements may be seen in berspective most of the charts cover a long run of years, out some of the series (for example, measures of volume or of price changes) may provide only a broad guide to changes over long periods.

6. Logarithmic scales are used in charts where the main purpose is to compare the slopes of series which are very different in magnitude.

7. Except where otherwise stated, monthly and quarterly figures relate to totals for the period and are not con-verted to annual rates. The statistics relate mainly to the United Kingdom of Great Britain and Northern Ireland; where figures are for Great Britain only, this is indicated on the table.

8. *Economic Trends* is prepared monthly by the Central Statistical Office in collaboration with the statistics divisions of government departments. The names of the departments and organisations providing the statistics are given in the Index at the back, together with publica-tions which may be consulted for more detailed statistics and for definitions.

9. Rounding of figures. In tables where figures have been rounded to the nearest final digit, there may be an apparent slight discrepancy between the sum of the con-stituent items and the total as shown.

10. *Symbols.* The following symbols are used in the tables:

   ..   not available

  —   nil or less than half the final digit shown

n.e.i. not elsewhere included

  *   average of five weeks

Central Statistical Office,

  Great George Street, S.W.1.

19th August 1968

THE ECONOMIC SITUATION

GENERAL ASSESSMENT

After the rather rapid increase in output in the early part of the year, activity probably levelled off in the second quarter. The economy appears to have been in a transitional phase in which the shift of resources to the balance of payments had not yet taken up the slack left by the fall in personal consumption since the Budget. There is likely to be resumed growth of output in the second half of the year as increases in fixed investment and stockbuilding are superimposed on expanding exports.

Personal consumption fell substantially in the second quarter as a whole, perhaps to about the level prevailing before the consumer boom began. The volume of retail sales fell by between 3 and 4 per cent in the second quarter, with sales of non-food shops down by 7 per cent; new car registrations were almost 40 per cent lower. Hire purchase contracts for used cars showed some increase in July, but were down for new cars. Total hire purchase debt fell again in June, to just above the level recorded last December.

As was envisaged at the time of the Budget, the growth points of demand in the second quarter must have been in sectors other than personal consumption. Exports have been rising in value and the underlying increase, after allowing for the dock strikes and other distortions, was probably about 5 per cent between the first and second quarters. Though part of the expansion in exports is likely to be attributable to devaluation, the main impetus so far has come from the buoyancy of world markets. The volume of exports in the first six months of the year was probably closely in line with the main forecast published in March. Firm evidence about the behaviour of other sectors of demand since the Budget is not yet available, but preliminary indications suggest that there has been some stockbuilding by industry after the substantial de-stocking in the first quarter.

The increases in expenditure are unlikely to have outweighed the fall in personal consumption, and it seems clear that total activity cannot have changed much in the second quarter. Industrial production remained flat between March and May, and although it was 1 per cent higher in this period than in the preceding three months, as was manufacturing output, the rate of increase has clearly slowed down.

Public sector housing activity has remained fairly subdued in the first half of the year. In the private sector activity has been at a high level in recent months, but there are now signs that it is slackening as a result of the more stringent credit situation since devaluation and the tightness of building society funds.

Unemployment continued to rise between June and July, when the number of unemployed increased to 580,000, bringing the percentage rate up to 2·5 per cent of employees. Unfilled vacancies for adults increased slightly in the July period. Although they rose when unemployment was falling in the months up to February, they have shown little change in the subsequent

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Note: Unless otherwise stated, this report is based on seasonally adjusted data.

months. The reasons for this stability are not yet clear but may be connected with increased turnover of labour arising from the realignment of demand after devaluation and the Budget.

Hourly wage rates (not seasonally adjusted), which rose fractionally in June, were about 1 per cent higher than in January; retail prices (not seasonally adjusted) were over 3 per cent higher, having risen by $\frac{1}{2}$ per cent in June after remaining steady in May. Average earnings were virtually unchanged between April and May, at a level about 2 per cent higher than in January.

The pattern of price movements (not seasonally adjusted) following devaluation has been broadly as expected. Import prices rose rapidly, reaching a peak in April more than $10\frac{1}{2}$ per cent above the October level, but have fallen back since, a path which was closely followed by wholesale prices of basic materials and fuels, most of which are imported. Export prices were slower to rise, but with the sharp increase in June, were over 8 per cent up on October in sterling terms. In terms of dollars they were down by 7 per cent. Wholesale prices of manufactured goods for domestic sale increased by about 4 per cent between October and June. Retail prices in June were nearly 5 per cent above their October level, a rise which reflected the effects of the Budget as well as of devaluation.

London clearing bank advances, other than to nationalised industries, rose sharply in July after the considerable fall in June. But the seasonal adjustment factors are particularly uncertain in June and July. Taking the two months together a moderate increase in borrowing by the private sector was more than offset by a reduction in lending to local authorities.

Exports rose further in July, by £17 million to £510 million. Their strongly rising trend is affirmed by the run of figures in recent months; exports in June-July together were 3 per cent higher than in April-May. Imports rebounded in July to £663 million (excluding United States military aircraft), partly reflecting a carry-over from the low level of £608 million in June. The July figure was inflated by arrivals of goods held over from June to take advantage of the Kennedy Round tariff cuts becoming effective on 1st July; another influence was a recovery in imports from France to an above average rate following the ending of the strikes there. Despite the increase in July, there has been a gradual decline in the average level of imports from the high levels reached earlier this year. Imports in June and July together averaged £636 million a month compared with £646 million a month in April-May and £654 million a month in February-March. The visible trade deficit in July was £80 million; however, taking June and July together it was £65 million a month against £86 million a month in April-May.

The gold and convertible currency reserves (not seasonally adjusted) rose during July by £21 million to £1,139 million. This increase was recorded after loan service payments totalling £21 million had been made. Sterling was under pressure on the last two days of June (when dealings were for value in July) and in the first few days of July. But following reports from Basle of the proposed new credit facility and the publication of better trade figures for June the pound turned much stronger, and the initial loss of reserves was more than made good.

I. THE COURSE OF DEMAND

Consumers' expenditure

The latest information confirms the marked fall in consumption since the Budget. First estimates show that consumers' expenditure fell substantially in the second quarter. The volume of retail sales fell in the quarter by 3 to 4 per cent to a level about 2 per cent higher than in the first half of 1967. Retail sales increased slightly in June, but there are difficulties in allowing for seasonal factors in May and June because of the spring bank holiday. New car registrations fell

back again in June to about the April level, after some recovery in May, and were nearly 40 per cent lower in the second quarter than in the first, the average monthly rate for the first half year being only slightly above the average for 1967 as a whole. Hire purchase transactions for both new and used cars also fell back sharply between the first and second quarters to well below the average levels for 1967; there was some recovery in July in contracts for used cars. Total hire purchase debt outstanding fell by £13 million in June, bringing the fall over the second quarter to £28 million, in contrast with the rise of £31 million in the first quarter.

Housing

The recovery in public sector housing which was suggested by the improved figures for May was not maintained in June although the average rate of starts in the last three months was 17 per cent above the very depressed rate of the first quarter. Completions have been extremely volatile throughout the year and although high in May they also fell sharply in June.

Private sector activity, which has been buoyant through most of the year, showed signs of a down-turn in June. Starts were at a monthly rate of just over 15,000, compared with an average of 17,600 in the previous three months. This suggests that the cut-back in starts which has been expected in response to the devaluation package and the difficulties which building societies have experienced in attracting and retaining funds, but which had been delayed by the strength of the market earlier in the year, may now be taking place. Completions also fell sharply. The demand for building society mortgages is still high in relation to the supply, which, though greater than earlier in the year, is still being depressed by a high level of withdrawals and the building societies' desire to maintain adequate liquidity in an uncertain situation.

Exports

Exports in July exceeded £500 million for the first time. They rose to £510 million, seasonally adjusted, from the revised figure of £493 million in June. The strongly rising trend of exports is clearly seen in the run of figures over the last four months. In June and July exports averaged £501 million a month, 3 per cent higher than the average of £485 million in April and May, and 18 per cent above the average in the second and third quarters of 1967, before exports were affected by devaluation and the dock strikes. About half of this rise reflects an increase in the volume of exports and the remainder an increase in their price. The export unit value index shows a rise of 8 per cent between October and June, the latest month available.

The main increase in exports in June-July compared with April-May was in deliveries to North America, which rose sharply by £15 million a month (nearly a fifth), with the growth mainly in shipments to the United States. After the disruption of exports to France in June, deliveries recovered in July to their pre-June rate but the short-fall in June has yet to be made good. Exports to the other countries of the EEC, however, rose by over 4 per cent (£3 million a month) in June-July compared with the previous two months. Deliveries to EFTA, which in the early months of the year were rather less buoyant than exports to most other areas, also rose by about 4 per cent. Exports to the sterling area have risen less strongly than those to other destinations since devaluation and have fallen back a little in recent months. Exports to Latin America and to the Soviet Union and Eastern Europe have remained steady at this year's higher level and deliveries to the 'rest of the world' increased sharply with a rise of 14 per cent (£4 million a month) between April-May and June-July, partly reflecting higher deliveries of ships and aircraft in July. The growth in recent months has taken place over a wide range of manufactured goods and in deliveries of food, beverages and tobacco and fuel. Exports of road motor vehicles have increased substantially in recent months, with a rise of 8 per cent (£4 million a month) between April-May and June-July.

II. PRODUCTION, IMPORTS AND MANPOWER

Industrial activity

Industrial production in the three months to May is provisionally estimated as being nearly 1 per cent higher than in the previous three months, with the May figure the same as in March and April. The decline in output of most consumer goods since March has continued, with production of carpets, made-up clothing, footwear, drink and tobacco, and furniture tending downwards since the Budget.

Total car production in June showed only a small overall fall on May despite the effect of industrial disputes, and production for export was in fact 4 per cent higher than in May. Total production in the second quarter was close to the high level of the first, again with a notable switch from home to export production, so that the monthly average production for export in the first half of 1968 was 7 per cent higher than the monthly average for the previous record year of 1964. Commercial vehicle production both for home and export markets in June was reduced from May levels by industrial disputes, and was 4 per cent lower in the second quarter than in the first.

Production in the textile and clothing group in April and May changed little from the level of the first quarter, a decrease in clothing output being offset by an increase in textiles output. All sectors of textiles showed increases in output over the same period. Net new orders for the group as a whole were 6 per cent higher in April and May than in the first quarter, and order books lengthened in all sectors.

Statistics now available for the greater part of July suggest that crude steel output has been running only just below the June level. This confirms the return from the high figure recorded in May to approximately the trend expected. Provisional figures for steel consumption in the second quarter show a slight fall, accompanied by a small rise in consumers' and merchants' stocks; supplies to the home market continued to rise slightly, which, with rising investment and engineering export prospects, suggests that this unexpected check to consumption is temporary. Steel imports, though still at a high level, were lower in June than in recent months. Exports in June were at their highest level since May 1967.

Output of the chemicals and allied industries has remained buoyant in the three months to May compared with the previous three months; there are reports of growing concern about shortages of capacity.

For the wider group of engineering industries, deliveries both to the home and export market fell slightly in May, but export deliveries in the three months to May were 3 per cent higher than in the preceding three months. New export orders in May were 5 per cent more than in April, and it now appears that within this fluctuating series there is an upward trend—the monthly average level of new export orders for the first five months of 1968 was 9 per cent higher than the level in the preceding five months. New home orders dropped in May leaving total new orders lower than in any month since last November. Home deliveries have remained rather flat over recent months.

Imports

Imports rebounded in July, partly reflecting a carry-over from the low level of £608 million in June. The value of imports in July was £663 million (excluding United States military aircraft). Taking June and July together, however, total imports averaged £636 million a month compared with £646 million a month in April-May and £654 million a month in February-March. The July figure was clearly inflated by arrivals of goods held over from June to take advantage of the Kennedy Round tariff reductions on 1st July. This is reflected especially in imports of semi- and finished manufactures, which were sharply higher by £16 and £20 million a month respectively after low figures in June; within semi-manufactures, however, imports of silver were £3 million

less than in June and imports of precious stones were unchanged. Imports from France recovered to an above average rate, reflecting mainly the ending of the strikes in that country.

Demand for labour
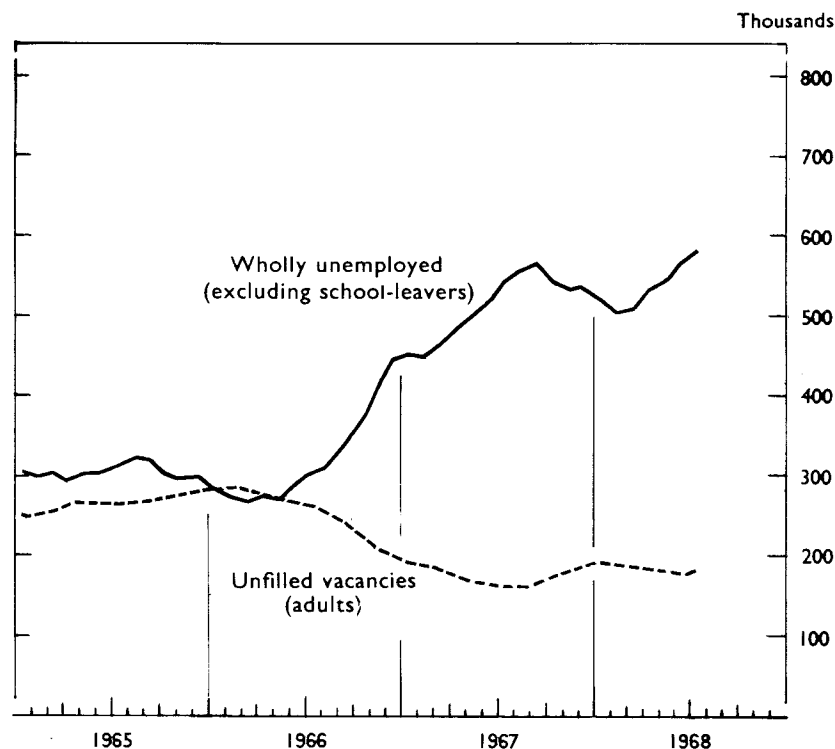
Although unemployment has been rising since February, unfilled vacancies have shown little change.

Despite the increase in July, there has been a gradual decline in the average level of imports from the high levels reached earlier in the year. The easing back has been largely in imports of food, beverages and tobacco and in semi- and finished manufactures, partly reflecting lower consumer demand since the Budget. Imports of fuel and basic materials have risen in recent months. In the area pattern of imports, most of the decrease in the two months June-July compared with the two preceding months was in arrivals from Western Europe. Imports from North America were also markedly reduced, but those from countries in the 'rest of the world' were higher in June-July. There was little change in imports from other main markets.

The labour situation

In the four weeks between the June and July counts, the number of wholly unemployed (excluding school-leavers) rose by 11,000 to 580,000 or 2·5 per cent of employees. It is clear, therefore, that the upward trend in unemployment has continued.

Unemployment percentage rates increased between June and July in all regions except Eastern and Southern and West Midlands where there were small decreases. Between February, the low point of recent months, and July the percentage rate rose by 0·4 in Great Britain. Over this period there were smaller increases in the West Midlands Region (1·8 to 2·0), in London and South Eastern Region (1·4 to 1·7) and in East Midlands Region (1·6 to 1·9) and larger increases in Yorkshire and Humberside Region (2·1 to 2·6), in Wales (3·5 to 4·1) and in Northern Region (3·9 to 5·0).

The number of unfilled vacancies for adults increased by 3,000 between June and July. Since February there has, however, been little change in this figure.

Provisional estimates of numbers of employees in employment (not seasonally adjusted) show a net decrease between May and June of 21,000 in index of production industries. This decrease is in line with the normal seasonal movement between May and June. The estimate for these industries for June 1968 is about 1·6 per cent lower (males–1·9 per cent and females–0·8 per cent) than for June 1967.

In the year up to June, manufacturing employment fell by about 1 per cent; the underlying level of employment in manufacturing industry has, however, probably remained fairly stable since the beginning of the year.

III. WAGES AND PRICES (*not seasonally adjusted*)

Earnings and wages

The provisional results of the latest half-yearly enquiry show that average weekly earnings increased by 8·2 per cent for men and 7·2 per cent for women over the year between April 1967 and April 1968. The sharp increase followed a year when earnings rose very moderately. Hourly wage rates, which rose by 7·8 per cent in the year up to April (and which included the effect of settlements deferred until after the end of the period of severe restraint), have shown very little change subsequently. Wage settlements in the second quarter were light; and the (weighted) average size of settlements was below the level of the first quarter.

Prices

The retail price index rose by about ½ per cent in June after showing little change in May, and now stands nearly 5 per cent above its pre-devaluation level. The increase in June was largely the result of higher prices for fresh fruit and the reintroduction of prescription charges, which were only partly offset by lower potato prices.

Wholesale prices

The movement of copper prices continued to be the dominant influence on the wholesale price index of basic materials used in manufacturing industry, and in July the provisional index fell by 1 per cent, after a rise of over ½ per cent in June. Output prices of home market sales of manufactured products continued to rise slowly, the increase between April and July being ½ per cent. The slight increase in July was largely attributable to higher output prices in the tobacco industry.

The import unit value index, which has risen by about 10 per cent since devaluation, showed no change in June after its 1 per cent fall in May. The export unit value index rose by over 2 per cent in June, mainly as a result of higher prices for exports of machinery and transport equipment as post-devaluation contracts matured. The terms of trade, which improved by three points in June, now stand only one point below the October level.

Prices since devaluation
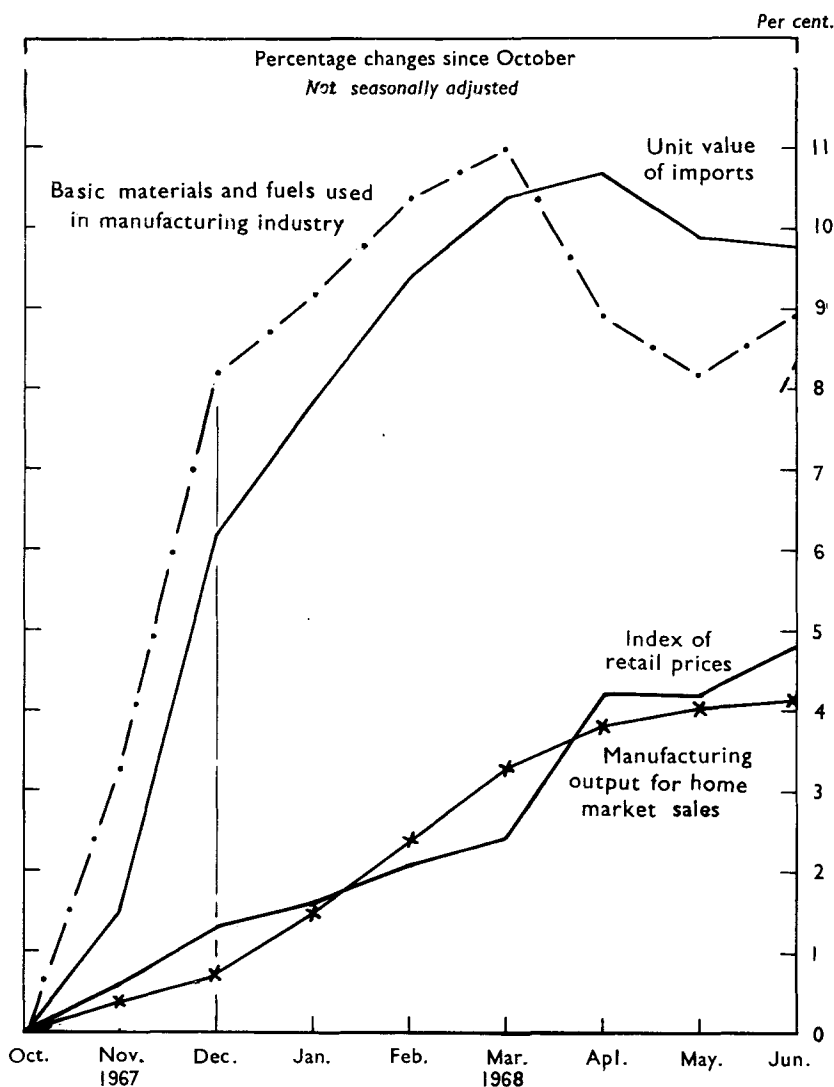
Following devaluation, the pattern of price rises has been as expected. Until May, high world copper prices added impetus to the rises in the indices for imports and basic materials and fuels.

IV. FINANCIAL TRENDS

Banking trends

Before seasonal adjustment, London clearing bank advances other than to nationalised industries rose by about £117 million in July, in sharp contrast with the fall of £85 million in the previous month. Seasonal adjustment factors are particularly uncertain in June because of the difficulty of estimating how much of the impact of half-yearly influences such as the interest charges on overdrawn accounts falls in June and how much in July. It is probably better to take June and July together. On this basis, advances after seasonal adjustment fell over the two months by about £10 million. Within this fall a substantial reduction in lending to local authorities (mainly in June) was largely offset by increased private sector borrowing.

Sterling and the reserves (*not seasonally adjusted*)

The gold and convertible currency reserves rose during July by £21 million to £1,139 million. This increase was achieved after providing for half-yearly loan service of £12 million on the Export-Import Bank credits and a monthly repayment of £9 million to the Bank for International Settlements.

Early in July the reserves were affected by pressure against sterling on the last two dealing days of June. Sterling remained rather depressed for a few more days. But on 8th July reports of the prospective new arrangements to protect the United Kingdom reserves against the effects of fluctuations in the sterling balances brought about a marked improvement in the atmosphere. The trade figures for June, which were published on 11th July, made a favourable impression and sterling stayed firm until near the end of the month, when it strengthened further. The spot rate rose from 2.38\frac{1}{4}$ to 2.39\frac{1}{2}$, and forward margins narrowed abruptly from the equivalent (on a three-month contract) of over 5 per cent per annum to not much more than 2 per cent per annum.

The exchange rate
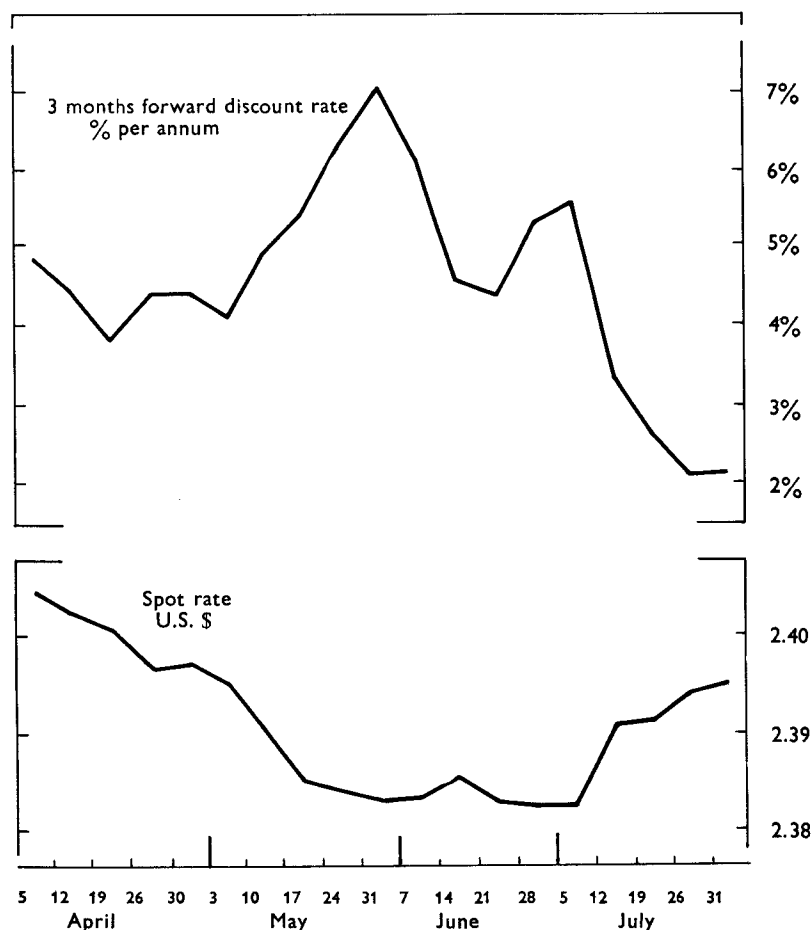
Both spot and forward exchange rates for sterling have improved markedly in recent weeks.

15th August, 1968   *H.M. Treasury*

Expanded provisional input-output tables for 1963

by D. C. UPTON

Introduction

This article presents a further set of up-dated input-output tables for the year 1963 representing a development of those published in *Economic Trends*, August 1966. This second article has, for its main purpose, the release of the results of some further work done on 1963. Whilst awaiting the completion of the 1963 census of production analysis, the principal development has been the disaggregation of the services industry group which has up to now appeared as a single row and column in the transactions matrix. The tables have been prepared in the Central Statistical Office in collaboration with other government departments. Both this exercise and its predecessor referred to above, differ from the last detailed input-output exercise for 1954 in that they are not based on a full analysis of the census of production for the year in question. A full and detailed census of production was taken in respect of 1963 but publication and analysis of the results has not yet been completed so that only provisional and summary results have been used in this exercise. The tables presented here are thus provisional; more firmly based and more detailed input-output tables, based on the full results of the census of production for 1963, will be published in due course. The present exercise, like the previous one is designed to help bridge the gap between the taking of the census and the completion of the detailed input-output analysis.

The tables for 1963 are designed to provide statistics for use in broad economic studies only. They have been derived partly by an 'up-dating' process, which was described in the 1966 article and is repeated below. Because of the limitations of the up-dating process, the tables are not intended for use in detailed industrial studies; even for the industry groups shown, they should be used with caution. The tables follow the same conceptual framework as the summary tables previously published for 1954, so that the publication *Input-Output Tables for the United Kingdom 1954*, can be referred to for a discussion of the definitions and concepts used. However, there are some changes in presentation both from the 1954 tables and from those of the original exercise for 1963 referred to above.

(a) From the twelve industries of the 1954 summary table and the fourteen industries of the 1966 article the analysis has developed to twenty-eight industries;

(b) The imports row in the earlier exercises has been disaggregated to become an import matrix of 27 commodities into industries. This imports matrix is superimposed on the domestic transactions to give a possible two entries in each cell, one for purchases from domestic production and one for imports;

(c) The payment of excise duties on drink and tobacco has been transferred from the industry columns to the purchasers, mainly personal consumers (column 30);

(d) The consumption by public authorities is shown on a more gross basis, hence the large negative entry in the 'final buyers' line.

The estimates for 1963 have been derived partly by 'up-dating' the data for 1954, but for Agriculture, Forestry and fishing, Coal-mining, Mineral oil refining and the Gas and Electricity industries, the figures for inputs and outputs were computed primarily from departmental statistics for 1963. For the remaining industries, which include most of manufacturing, the estimates of input and output were derived by up-dating the 1954 input-output table in the following way. First, gross output free from duplication for each industry group (that is, excluding sales between establishments within the industry group) was estimated from the provisional results of the census of production for 1963. The extent of this duplication can be estimated only roughly at present since comprehensive detailed figures of inputs to industry are not yet available. Second, final expenditure at sellers' prices, estimated from national income data, was deducted from these gross output totals to give estimates of total intermediate output for each industry group (that is, the row totals to the right of the inner matrix of intermediate transactions). Third, column totals of this inner matrix were estimated by deducting net output and net taxes on expenditure from the non-duplicated gross output totals. Fourth, these totals were distributed pro rata to the 1954 proportions of inputs to each industry group, revalued at 1963 prices. Fifth, these estimated inputs on the 1954 pattern were summed horizontally and compared with the independent estimates of row totals of intermediate output described above. Differences between the two estimates of intermediate output were eliminated by an iterative process of pro-rating both horizontally and vertically until the inner matrix balanced. The end-result is a set of intermediate transactions consistent with given estimates of total inputs of goods and services and of total intermediate sales of goods and services. This process depends on an initial assumption that trends in the total industrial usage of each commodity group are applicable to each of the individual user industries, but this assumption is eventually modified in the pro-rating process.

The allocation of imports, classified by commodity, to consuming industries and final demand, which was implicit in the original 1963 exercise, is now published as a matrix superimposed on the domestic transactions. No distinction is made between competitive and complementary imports and in the tables derived from the matrix inversion (Table 2 onwards), imports are treated as a single line to permit the total import contents of various aggregates to be examined. Where the destination of intermediate imports cannot be deduced from the

nature of the commodity e.g. sawn timber, the allocation can only be very approximate until the full detail on industrial usage becomes available from the census of production. Despite this limitation there have been many requests for the publication of the data as they stand. The import entries in the industry rows are valued c.i.f. But the total figures in row 29 are adjusted to the valuation of total imports of goods and services on a balance of payments basis. The final detailed tables, when they are produced, will include a more detailed import matrix and also commodity/industry matrices showing the commodity composition of each industry's inputs and output, from which industry/industry and commodity/commodity matrices can be derived.

The increased degree of disaggregation to 28 industries was largely determined by two factors:

(a) The row and column for the services industry group shown in the August 1966 article represented the largest aggregate of domestic production in the analysis, slightly over a third of the gross domestic product. It was intended that this row should be disaggregated as far as possible in the final detailed 1963 input-output exercise, despite the very limited data available and accepting the inevitable limitations on the quality of the results. In addition, interest in the services industries of the United Kingdom economy is steadily increasing. No disaggregation has previously been published in input-output analysis because it could not be carried out to the same standard of accuracy as the rest of the analysis. This situation is broadly unchanged and the disaggregation now presented is subject to considerable error. The analysis was carried out on the basis of the information known to be available and with limited resources. A larger exercise on the existing statistics would probably not improve the overall picture sufficiently to justify the extra expenditure. The statistics of input and output of the total services industry group are very limited because priority in statistical investigation has always, up to now, been given to agricultural and industrial production and because the service industries with their multitude of small establishments are extremely expensive to survey. A fairly detailed account of the methods used to disaggregate the services industry group is given later in this article.

(b) The remaining additional disaggregation of industries is due to further exploration of the possibilities of up-dating matrices. Data on forestry, fishing, electricity and gas individually were calculated from 1963 sources in the original exercise published in 1966. The inclusion of forestry and fishing with agriculture is not always convenient for economic analysis with input-output techniques and the interest in the gas and electricity industries is obvious. Water is shown separately, despite lack of information, as it is inconvenient to attach it to any other aggregate. Shipbuilding, motor vehicles and aircraft were disaggregated because annual final demand is identifiable, permitting the derivation of total intermediate transactions and the application of the up-dating technique used in the rest of the matrix.

The tables

Comparisons with 1954 are not given, as in the earlier article, since the existing matrices for that year are not of comparable size. With small to medium sized matrices the degree of disaggregation of industry can have considerable effects on data derived from the inverted matrix, particularly where a non-homogeneous group like the services industries is concerned. Percentages are given to one decimal place, despite the limited accuracy of the data, as rounding to whole numbers would have eliminated many entries of less than unity and somewhat distorted the patterns.

Table 1 is the basic inter-industry transactions matrix. The figures given in the table are consistent with those given for 1963 in the National Income Blue Book for 1968. In the table, the United Kingdom economy is divided into twenty-eight industry groups. Estimates are given for each industry of its purchases (for use in current production) of the goods and services produced by each of the other industries, of the services of factors of production and of imports; and of the sales of its products as intermediate output to other industries and as final output to persons, public authorities, capital formation and for export. All the transactions are valued at sellers' prices (approximately ex-factory) and not at purchasers' prices.

The gross domestic product for 1963 can be derived from Table 1 in either of the following ways:

		£ million
	Income from employment (the total in column 36 of row 33)	18,160
plus	Gross profits and other trading income and the residual error (the total in column 36 of row 34)	8,609
equals	Gross domestic product at factor cost	26,769
	Total final expenditure or output (the total in column 35)	36,207
less	Imports of goods and services (the total in column 36 of row 29)	-5,950
less	Net taxes on expenditure (the total in column 36 of row 32)	-3,488
		26,769

The columns in Table 1 show the estimated extent to which each of the 28 industry groups was dependent on other industries and on imports for its supply of inputs on current account in 1963. On the assumption that the inputs required by each industry group are proportional to its total output, the average relationships between the inputs, both direct and indirect, and the gross output of the industry group can be derived for the year 1963 from the intermediate transactions in Table 1. These relationships are given in Table 2 in the form of estimates of the gross outputs required, on average, to produce £100 of final output by each industry group. The relationships were obtained by inverting a matrix of coefficients derived from the values of the intermediate transactions in Table 1.

Table 2 shows, for example, that in 1963 £100 of final

x

output of Other engineering required on average £2 of gross output by the coal mining industry, £17 of output by the metal manufacturing industry, and so on. The £100 of final output required more than £100 of gross output of Other engineering (£102·7) because some inputs to Other engineering in turn incorporate output of this industry. This duplication is removed in Table 3. The *average* relationships between inputs and outputs given in Table 2 may not be the same as the *marginal* relationships which would apply for changes in output, nevertheless, the coefficients given provide a useful approach for assessing the effects of changes in the output of one industry group on the outputs of other industries.

For many purposes it is more convenient to present the results of Table 2 in a different form so that the contributions which each of the different industries, imports and taxes on expenditure, make to the output of particular industry groups add to 100 per cent. This is done in Table 3. The figures are derived by applying the appropriate ratios of net output to gross output to the figures for each industry given in Table 2.

Table 4 provides an analysis of the ultimate primary input composition of the gross output of the different industry groups. The gross output is built up from the value added directly by domestic factors of production in the industry in question and from the value added indirectly in the supplying industries, and from imports and net taxes on expenditure. This 'ultimate' primary input therefore differs from the direct inputs given in the primary input segment of Table 1. Table 4 shows that the primary input pattern varies markedly from industry to industry. The income from employment (labour cost) content of output varies from 18 per cent for Mineral oil refining, to 60 per cent and more for Other engineering (61 per cent), the Construction industry (64 per cent) and the Coal mining industry (74 per cent). All the service industries except Other transport show labour contents of over 50 per cent. Likewise, the import content of output varies from industry to industry: from 4 to 7 per cent for Mining and quarrying and the Gas, Electricity and Water industries to 29 per cent for Textiles, and 66 per cent for Mineral oil refining. All the service industries except Other transport show low import contents.

Table 5 shows the composition of each category of final expenditure and of total final expenditure in terms of each industry's net output and of imports and net taxes on expenditure. This table is obtained by applying the coefficients of net output composition in Table 3 to the columns of figures for each category of final expenditure in Table 1. The table shows, for example, that the Coal mining industry accounted for 1 to 2 per cent of the total value of each of the various forms of final demand in 1963 and that the net output of the Other engineering group accounted for nearly one-fifth of the total value of gross domestic fixed capital formation and some 15 per cent of exports of goods and services. Distribution and Other services accounted for 25 per cent of consumers' expenditure.

Table 6 shows the net output content of exports as a percentage of the net output of the industry in 1963. The direct and indirect categories for 1963 represent respectively the net output incorporated in the direct exports of the industry and that incorporated in the exports of other industries. Gas, Electricity and Water, for example, have negligible direct exports but considerable indirect exports. The position of the road and rail transport industries is similar. The direct exports of Distribution include the margin on United Kingdom exports and the direct exports of Other services mainly arise from 'invisible' exports i.e. sales of services abroad.

Table 7 gives the primary input content of each major category of final expenditure in 1963. The line showing the import content of each of the final expenditure categories shows limited variation between 15 and 23 per cent, except for public authorities' expenditure, which has an import content of only 9 per cent. The latter reflects the high proportion of employees' factor services in the inputs. The important figure of 23 per cent for the import content of exports includes re-exports which inevitably have a very high import content. Without re-exports, the import content of exports would be 19 per cent. The latter figure includes, in addition to goods, a significant invisible imports element, particularly that arising from the overseas disbursements of Other transport.

Disaggregation of the services industry group

The following notes describe in some detail the methods used to disaggregate the services industry group. In each case the starting point was the net output of the activity concerned, derived from the national accounts working sheets.

RAIL TRANSPORT

Total output and inputs

The net output relates to the rail operations of British Railways and London Transport only i.e. excluding shipping, railway workshops, catering services and electricity generation. The commercial accounts do not give comprehensive data for this national accounting concept of railway operations and gross output and details of inputs had to be estimated from partial accounting data and other sources. Total inputs of manufactured goods other than from railway workshops could be only roughly estimated as no relevant commodity data for 1963 was available.

Sales

Intermediate sales were estimated by the standard procedure for the 1963 up-dating exercise i.e. by subtracting final demand from gross output. An estimate of personal expenditure on rail travel is published, an estimate of defence expenditure on rail services was obtained but other public authorities expenditure could only be roughly estimated. The breakdown of transport expenditure by these other public authorities between road, rail and other transport is, therefore, very approximate. The gross capital formation item represents railways own account capital formation. The export item is an estimate of foreigners' expenditure on domestic rail services. Intermediate sales were allocated to industry on the basis of statistics of rail freight revenue by commodity. For many industrial raw materials the industry paying freight can be derived straightforwardly. For rail freight on distribution of coal the detailed statistics of coal consumption were used. Manufactured goods for

intermediate consumption were generally assumed to be sold on a carriage paid basis to fit in with the census of production net selling value definition of sales. Rail freight on manufactured goods for personal consumption and on small consignments of goods and refined petroleum was debited to distribution, which estimate is therefore something of a residual.

The 1963 census of production gives total payments by firms to other organisations for transport. This puts some constraint on the allocations of rail transport to individual industries.

ROAD TRANSPORT

Total output and inputs

The net output of the road transport industry i.e. excluding the operation of the 'C' licence vehicles owned by other industries and not operated from separate transport establishments, was obtained. The Ministry of Transport provided a summary input/output account for 1963 for public service vehicle operation, including the road transport activities of London Transport. To supplement this data, fuel tax was estimated from petroleum statistics and a breakdown of purchases of manufactures, other than tyres and service payments, was estimated from the detailed accounts available for some small passenger transport authorities. Most commercial accounting material shows a single functional classification of expenditure on repairs and maintenance. This includes labour, spares and repairs by other firms. The latter also poses an additional problem in that vehicle manufacturers provide some services e.g. engine reconditioning, there are specialist commercial vehicle repair facilities which may be combined with other engineering activities and finally some vehicles of smaller operators may be serviced by the distributors. It was assumed, in the absence of any basis for further disaggregation, that vehicle operators did their own repairs and servicing with spares and reconditioning services from the vehicle manufacturers.

The net output of the road haulage industry as defined in the national accounts was then obtained as a residual. There is very little information available on road haulage costs other than the largely theoretical costings for the operation of new vehicles drawn up by the trade, and the accounts of public transport undertakings. Neither give much information on commodity inputs as opposed

Road transport

£ million

	Road haulage	Passenger transport	Total
Total inputs of goods and services	152	62	214
Taxes on expenditure ..	31(¹)	31	62
Income from employment	240	215	455
Gross trading profits ..	139	45	184
Gross output	562	353	915

(¹) Road haulage is the residual, the equal division being fortuitous.

to functional classifications of costs. Total inputs were estimated from Transport Holding Company data for road haulage operations, as a ratio of net output. The breakdown of inputs by commodity was estimated mainly from the same source. The problem of the allocation of repair expenditure, mentioned above in connection with road passenger transport, also recurred.

Sales

Sales to final buyers were estimated mainly from consumers' expenditure statistics and total intermediate sales derived by difference. The only detailed statistics of intermediate sales were of commodities carried, which were tabulated by the Ministry of Transport in *Survey of Road Goods Transport 1962*. As with railway sales, estimates of sales to distribution were to some extent a residual category. Where the 1963 census of production payments to other organisations for transport for an industry, *less* the sum of the initial estimates of rail and road transport sales, left a plausible residue for purchase of other transport services the resulting breakdown of transport purchase was accepted. The process of allocation was similar to the basic up-dating methodology for the transactions matrix in that an initial matrix of transactions was balanced with marginal totals of intermediate transactions for both lines and columns.

OTHER TRANSPORT

This was considered in three parts.

a) AIR TRANSPORT

Total output and inputs

The gross output, net output and inputs of goods and services of the nationalised airlines BOAC and BEA were obtained from an analysis of the published accounts, supplemented with some detail obtained directly. The inputs were reconciled with the balance of payments civil aviation account. Private air transport output and inputs were estimated, in the absence of any other sources of data, from the ratio of the nationalised part of the industry to data on earnings of employees. There was difficulty in identifying domestic payments for other transport services e.g. on airport services, and this was treated as a residual for both parts of the air transport industry. The sales of air, sea and other transport were estimated together (see below).

b) SEA TRANSPORT

Total output and inputs

The net output of shipping as a whole was the starting point. The gross output for deep sea shipping was derived from the shipping account of the United Kingdom balance of payments. The gross output of British Rail shipping was obtained from the published accounts and the rough estimate of the gross output of coastal shipping was made from information on the carriage of coal together with an allowance for other commodities. Inputs of goods and services could then be derived by difference. The greater part of these inputs consisted of overseas disbursements of shipping which feature in the United Kingdom balance of payments shipping accounts. These disbursements include foreign charter payments by United Kingdom shipping companies. Elements from the composition of these overseas disbursements were

used to estimate a pattern of United Kingdom disbursements in the absence of any other information. A substantial part of these estimates of United Kingdom disbursements was for port services which are part of Other transport industry, i.e. an intra industry, transaction. The sales of sea transport were estimated with the rest of Other transport (see below).

c) RESIDUAL OTHER TRANSPORT

Total output and inputs

This residue consists of certain air and sea port services, inland water transport, forwarding agents, warehousing and storage, travel agents, motoring services etc. The net output was obtained as a residual after deducting the other transport services described above from the total net output for 'Other transport'. There is little other information on these residual transport services and a uniform pattern of inputs could not be expected for such diverse activities. The ratio of inputs to net output and the pattern of commodity inputs into Distribution were used.

Other transport

£ million

	Air	Shipping	Other	Total
Domestic inputs ..	52	159	93	304
Less intra items ..	—31	—57	—	—88
Total imports ..	75	493	3	571
Total inputs of goods and services ..	96	595	96	787
Taxes on expenditure	6	—	9	15
Income from employment ..	56	176	182	414
Gross trading profits	51	135	76	262
Gross output ..	209	906	363	1,478

Sales

Sales to final buyers of air, sea and other miscellaneous transport services were estimated from national income statistics of consumers' expenditure and other sources. Exports of air and sea transport were estimated from the shipping and civil aviation accounts of the United Kingdom balance of payments. Sales to final buyers were then subtracted from the combined estimates of gross output to give total intermediate sales. Some 60 per cent of total intermediate sales corresponds to the freight element on imports for intermediate consumption carried in United Kingdom ships. This freight was allocated to the main commodity import groups, particularly petroleum, on balance of payments information and other estimates. The result is inevitably somewhat rough. A significant amount of other transport services is sold within the broader industry grouping of air, sea and other transport and is netted out on aggregation. Intermediate sales of air, sea and other transport were allocated to manufacturing industries on the basis of the residual between the 1963 census of production figures

of payments to transport organisations and the separate estimates of payments for road and rail transport described above. Allocations to Distribution and Other services accounted for most of the residual output.

COMMUNICATIONS

Total output and inputs

This industry covers the GPO, Cable and Wireless and other minor telecommunication activities. The latter two categories account for some 7 per cent of the gross output. For the GPO, total inputs of goods and services were estimated from gross output *minus* net output, and the breakdown of inputs by commodity was estimated from the functional classification of the GPO accounts. Inputs to the rest of the industry were estimated by reference to the GPO input composition.

Sales

Sales to final buyers were estimated from consumers' expenditure and other information and were then subtracted from gross output to give intermediate sales. No information could be found on the breakdown of the sales other than the provisional results of the supplementary enquiry of the 1963 census of production, which gives data on expenditure by manufacturers on postage, telephone, telegrams and cables. However, when the latter was combined with rough estimates for expenditure by the non-manufacturing industries the amount spent was considerably below the estimate of total intermediate sales. After making the maximum plausible allocation to Distribution and Other services and deducting sales to those sectors whose 1963 inputs were calculated directly from 1963 accounting material, the residue of intermediate sales was spread over the other industries in proportion to the census of production data.

DISTRIBUTION

Total output and inputs

The disaggregation of this part of the services industry group presents rather extreme problems. Apart from net output, the only relevant statistics covering large sections of this industry are the censuses of wholesale trade in 1950 and retail trade in 1961. The report on the census of retail trade in 1966 should become available shortly. It is difficult to update the statistics of gross margins from the 1950 and 1961 sources to 1963 and in addition the census definition of gross margin is not entirely suitable for national accounting purposes, as packaging materials were not included as part of the margin but treated as part of the purchases for resale. In addition the two censuses may not cover the national accounting concept of distribution entirely. The attempt to up-date the two census gross margins produced a gross output for distribution which appeared to be too low, even after adjustment for packaging materials, for consistency with the rest of the transactions matrix, particularly the estimated distribution margins on consumers' expenditure. The ratio of national accounts net output to the estimates of gross output derived from census of distribution data seems to be high. Inputs and consequently gross output were therefore raised to a substantially higher level to balance the transactions matrix. The commodity breakdown of inputs other than fuel was estimated from international comparisons. Transport purchases by

distribution were treated as part of the inputs to that industry and included in gross output (gross margins).

Sales

The distribution element in final demand (that is the distribution margin) has to be estimated, as national accounts data on final expenditure are necessarily in terms of purchasers' prices. The distribution element in food expenditure of persons was taken as the difference between imports of food and the farm gate valuation of farm produce sold directly to consumers without further manufacturing *plus* estimated sales of manufactured food to persons (total sales *less* the relatively small non-personal demand) on the one hand and total personal expenditure on food on the other. The latter does not differentiate sufficiently between farm and manufactured food, even at the working sheet stage, to permit the separate estimation of distribution for each category of food supply. For the rest of final demand, wholesale gross margins were derived from the 1950 census of distribution, wholesale trades and retail gross margins from the census of distribution for 1961. Allowance was made for direct trading between manufacturers and wholesalers and final consumers. A minimum estimate was made for the distribution of intermediate inputs based on trading activity in industrial materials. The original plan was to make this part of distribution activity the residual of distribution, that is gross output *less* final demand, but this residual turned out to be inadequate even with what was considered to be a maximum estimate of inputs of goods and services into distribution which in turn maximised the gross output. There is therefore an unresolved problem in that the first estimates of the distribution margin on consumers' expenditure which accounted for some 85 per cent of the gross output of this industry, plus minimum estimates of distribution on other expenditure, exceeded the gross output of distribution. For the time being an arbitrary deduction has been made to personal expenditure on distribution to permit the inclusion of minimum distribution margins on intermediate transactions. It is hoped that when the detailed input-output exercise for 1963 has been completed, and the supplies of and the demand for goods and services have been balanced against one another this imbalance between the estimated gross output of distribution and estimates of margins on goods distributed will disappear. Part of the problem is distribution activity by manufacturers of goods not of their own manufacture. This distribution activity was not completely identifiable in the 1954 census of production but it will be treated systematically as a secondary product or activity, in the detailed 1963 analysis.

OTHER SERVICES

Total output and inputs

Starting from the up-dating of 'Services' from the 1954 input-output analysis (the latter in itself something of a residual) to 1963 and then disaggregating Transport, Communications and Distribution as described above, the residual column of inputs and residual row of purchases of Other services is left. The line and column for Other services is therefore in each case a residual of a residual and must be subject to the large errors to be expected from such a situation.

The initial estimates of inputs were checked against data for other countries. The pattern of inputs into this activity exists only for advanced market economies and does not seem to vary very much, particularly within Western Europe. For checking purposes a pattern was chosen midway between the Common Market countries and the U.S.A. The first estimate of the residual inputs of 'Services' mentioned above when compared with the chosen pattern, showed quantities of manufactures which appeared excessive for consumption by Other services. The inputs were revised to an approximation of the international pattern, and the excess inputs or pure residual were disposed of by repeating the up-dating exercise from 1954 for the matrix excluding 'Services'. Thus, the pure residual was pro-rated over all other users subject to the up-dating process for 1954. (It will be remembered that parts of the transaction matrix were not up-dated from 1954 in this way but were calculated directly from 1963 data).

Sales

For sales of Other services the final demand part of the row was derived from national accounts sources but includes an arbitrary addition to offset the deduction made to consumers' expenditure on distribution. In addition the expenditure of foreigners on personal expenditure in the United Kingdom, a considerable amount of which falls on Other services, was transferred from the personal sector to exports, on an approximate basis. Sales to intermediate purchasers were residuals except for the columns of inputs calculated directly from 1963 data, where some specific information on purchases of Other services was obtained. The residual estimates obtained for inputs of Other services to the manufacturing industries appear rather large and are probably over-estimates. It is not feasible to review these estimates at present as the up-dated matrix from which they derive is subject to too large errors. The transactions matrix is balanced arithmetically, despite these defects, because there appears to be a corresponding excess output of Other services, possibly resulting from the use of this category as a residual in the industrial classification of income from employment and gross trading profits. When the final detailed transactions matrix for 1963 has been constructed from the full census of production results it should be possible to reduce this problem considerably.

Definitions

Detailed definitions of the items appearing in the input-output tables and of the technical terms used in this article are given in *Input-Output Tables for the United Kingdom 1954*, (HMSO 1961). The notes below describe some of the more important concepts and definitions.

The value of each industry group's output is measured at market prices and free from duplication, that is, it excludes that part of the output of each establishment which is sold to other establishments within the same industry group.

The value of the output of the distributive trades is measured by the gross margin on the goods and services sold. It thus equals the incomes generated *plus* the cost of goods and services used by these industries in providing their services; it does not include the factory value of the goods distributed. In effect, manufacturers and

overseas suppliers are regarded as selling their outputs direct to the industries or final buyers who in reality buy from the distributor; the latter is treated as an agent who sells only services. The gross output of the manufacturing industries includes any value added (net output) by their merchanting activities but not the selling value of the goods merchanted.

All sales and purchases of goods produced are measured in terms of sellers' value (the amount received by the seller) as distinct from purchasers' value (the amount paid by the purchaser). Thus, for example, sales of services to persons comprise (a) consumers' expenditure on travel, communications, services, entertainment and all other services, and (b) the value of the services rendered by the transport industry and the distributive trades in handling goods purchased by persons from industry and in handling imports bought by persons. The principal advantage of recording all transactions at sellers' prices and not at the price paid by the purchaser is that the figures of sales both to other industries and to final buyers within each row are on the same price basis and are, as far as possible, comparable.

Taxes on expenditure are treated as being paid by the consumer and in the case of intermediate consumption as a positive input. Subsidies are treated as being received by the producer of the subsidised goods, that is, as a negative input. Customs duties and purchase tax paid by wholesalers on marketed goods, which enter directly into final output without further processing in the United Kingdom, are treated as if they were paid directly by the final buyer. Therefore, they appear only in columns 30 to 32 of row 32 in Table 1. Excise duties on drink and tobacco, though paid by manufacturers, have been similarly debited directly to consumers. Sales by final buyers (row 30) include sales by industry and public authorities of second-hand vehicles, ships and plant and machinery for scrap, to personal customers, or for export. It also includes payments by persons to the central government for goods and services provided under the National Health Service, and fees paid by persons and by industry for various services to both central and local government. Sales abroad by public authorities are also included.

The value of the change in stocks and work in progress in column 33 of Table 1 represents the value of the physical change in the stocks of goods *produced* by the various industries or imported. The estimates, therefore, differ from the figures in the National Income Blue Book, which represent the change in the value of all kinds of stock *held* by the various industries. The allocation of stockbuilding to the producing industry is inevitably approximate.

Central Statistical Office

Summary input-output transactions matrix 1963

TABLE 1   £ million

In each cell, the domestic value (rows labelled d) is shown first; import values (rows labelled i) are shown in italics.

Sales by \ Purchases by	Agri-culture 1	Fores-try & fishing 2	Coal mining 3	Other mining and quarry-ing 4	Food 5	Drink and tobacco 6	Mine-ral oil refin-ing 7	Other chemi-cals, etc. 8	Metal manu-facture 9	Ship build-ing 10	Motor vehicles 11	Air-craft 12	Other vehicles 13	Other engine-ering 14	Tex-tiles 15
1 Agriculture	— *62*	—	—	—	423 *155*	23 *97*	—	— *55*	—	—	—	—	—	—	28 *234*
2 Forestry and fishing	—	—	5	—	11 *19*	—	—	—	—	—	—	—	—	—	—
3 Coal mining	1	—	—	1	9	5	—	156	12	—	3	1	1	9	14
4 Other mining and quarrying	— *10*	—	—	—	3	—	2 *360*	9 *24*	24 *100*	—	—	—	—	13 *11*	—
5 Food	262 *17*	—	—	—	— *242*	17 *5*	—	32 *4*	—	—	—	—	—	—	2
6 Drink and tobacco	5	—	—	—	6	— *6*	—	3	—	—	—	—	—	—	—
7 Mineral oil refining	15 *8*	4 *2*	1	1 *1*	6 *3*	3 *2*	—	78 *12*	20 *12*	1 *1*	3 *2*	1 *1*	1	14 *8*	6 *3*
8 Other chemicals, etc.	122 *60*	—	9 *1*	14	116 *31*	9	48	— *132*	110 *1*	5	57 *1*	3	2	117 *5*	21 *12*
9 Metal manufacture	—	—	48	1	6	2	—	28 *5*	— *213*	39	272 *21*	33 *5*	32 *2*	757 *65*	1
10 Shipbuilding	—	6	—	—	—	—	—	—	—	—	—	—	—	—	—
11 Motor vehicles	4 *2*	—	1	2	3	1	—	2	4	1	— *9*	—	13	31	1
12 Aircraft	—	—	—	—	—	—	—	—	—	—	—	4	—	—	—
13 Other vehicles	—	—	—	—	—	—	—	7	—	—	4 *1*	1	—	9	—
14 Other engineering	26	—	42	15	64	27	2	82 *21*	124	56 *6*	397 *8*	54 *3*	19 *3*	— *65*	20 *5*
15 Textiles	—	6	6	—	10 *1*	—	—	8	1	1	14	2	1	26	— *9*
16 Leather and clothing	4	—	2	—	1	—	—	2	1	1	10	1	—	7	4
17 Other manufacturing	42	—	49	7	87	42 *3*	12	85 *3*	29 *1*	12	177	11	9	267 *3*	8
18 Construction	29	1	18	—	6	6	—	11	8	2	5	3	1	22	5
19 Gas	—	—	—	—	7	—	—	23	18	1	5	1	1	26	2
20 Electricity	16	—	25	3	19	5	5	32	37	4	16	5	2	60	23
21 Water	—	—	—	—	6	5	—	5	5	1	4	—	—	7	2
22 Road transport	8	—	—	23	14	39	—	26	23	—	7	1	—	42	10
23 Rail transport	—	—	—	—	10	3	1	25	24	—	3	—	—	5	3
24 Other transport	10	7	—	—	29	7	76	10	25	1	1	—	1	11	24
25 Communication	5	—	2	1	6	9	—	14	7	1	9	4	1	53	10
26 Distribution	118	3	4	6	18	7	1	15	7	4	24	2	4	50	3
27 Other services	125	5	34	14	75	54	6	134	106	31	93	46	13	434	18
28 Public administration, etc. (²)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
29 Imports (i) Total goods net c.i.f.	159	2	5	1	451	113	360	256	327	7	42	13	5	157	34⁵
(ii) Services, re-exports and valuation adjustments	—10	—	—	2	—37	4	—76	29	—32	2	31	2	2	80	—2⁵
(iii) Total goods and services	149	2	5	3	414	117	284	285	295	9	73	15	7	237	320
30 Sales by final buyers (³)	—	—	—	1	5	3	—	5	48	1	5	15	1	22	5
31 Total goods and services (1 to 30)	941	34	251	92	1,354	384	437	1,070	935	171	1,182	212	96	2,219	530
32 Taxes on expenditure *less* subsidies	—246	—6	9	10	38	21	7	32	37	5	19	5	2	70	19
33 Income from employment	320	33	535	47	387	159	25	388	502	167	417	222	84	1,877	468
34 Gross profits and other trading income(⁴)	576	24	117	34	236	238	29	312	249	16	152	70	7	686	219
35 Total input (⁶) (31 to 34)	1,591	85	912	183	2,015	802	498	1,802	1,723	359	1,770	509	189	4,852	1,236

(¹) A matrix of net imports of goods, rows labelled i, valued c.i.f. is superimposed on the matrix of domestic transactions, rows labelled d. The total imports of goods and services row is, however, valued on a balance of payments basis.

(²) Public administration and defence, public health and educational services, ownership of dwellings, domestic services to households and services to private non-profit-making bodies serving persons.

Summary input-output transactions matrix 1963

TABLE 1 (continued) £ million

	Leather and cloth-ing 16	Other manu-factur-ing 17	Con-struc-tion 18	Gas 19	Elec-tricity 20	Water 21	Transport Road 22	Transport Rail 23	Transport Other 24	Com-munica-tion 25	Distri-bution 26	Other ser-vices 27	Public admin-istra-tion etc. (2) 28	Total inter-mediate output (1 to 28) 29	Personal sector 30	Public authori-ties 31	Gross domestic capital formation Fixed 32	Gross domestic capital formation Stocks 33	Ex-ports 34	Total final output (30 to 34) 35	Total output (29 + 35) 36	
1	— / 28	4 / 36	— / —	— / —	— / —	— / —	— / —	— / —	4 / —	— / —	— / —	— / —	— / —	482 / 667	1,040 / 455	14 / —	9 / —	5 / 26	41 / —	1,109 / 481	1,591 / 1,148	1
2	— / —	5 / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	21 / 19	43 / 19	— / —	— / —	19 / —	2 / —	64 / 19	85 / 38	2
3	2 / —	51 / —	— / —	112 / —	232 / —	1 / —	— / —	— / —	29 / —	1 / —	1 / —	3 / —	3 / —	647 / —	208 / —	26 / —	21 / —	—23 / —	33 / —	265 / —	912 / —	3
4	— / —	60 / 22	52 / —	— / —	— / —	— / —	— / —	— / —	— / —	1 / —	1 / —	— / —	— / —	165 / 527	— / —	— / —	— / —	— / —	18 / —	18 / —	183 / 527	4
5	— / —	2 / 6	— / —	— / —	— / —	— / —	— / —	— / —	7 / —	— / —	— / —	29 / —	— / —	351 / 274	1,436 / 494	49 / —	— / —	48 / 1	131 / —	1,664 / 495	2,015 / 769	5
6	— / —	1 / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	40 / —	— / —	55 / 6	628 / 47	— / —	— / —	7 / —	112 / —	747 / 47	802 / 53	6
7	1 / 1	18 / 10	20 / 11	9 / 6	20 / 11	1 / —	15 / 9	7 / 4	19 / 13	1 / 1	14 / 8	8 / 4	— / —	287 / 133	61 / 31	15 / 11	8 / —	2 / —	125 / —	211 / 42	498 / 175	7
8	13 / 2	151 / 37	90 / 2	12 / —	8 / —	2 / —	5 / —	14 / —	3 / —	— / —	9 / 1	109 / —	— / —	1,049 / 285	247 / 13	135 / —	— / —	—19 / —6	390 / —	753 / 7	1,802 / 292	8
9	1 / —	22 / 4	139 / 12	17 / —	3 / —	9 / —	— / —	14 / —	— / —	— / —	— / —	— / —	— / —	1,424 / 327	— / —	5 / —	40 / —	—27 / —8	281 / —	299 / —8	1,723 / 319	9
10	— / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	57 / —	— / —	— / —	— / —	63 / —	— / —	150 / —	93 / 6	—1 / —	54 / —	296 / 6	359 / 6	10
11	2 / —	9 / —	9 / —	1 / —	1 / —	— / —	73 / —	— / —	2 / —	2 / —	9 / —	115 / —	— / —	286 / 11	475 / 19	62 / —	294 / 5	34 / —	619 / —	1,484 / 24	1,770 / 35	11
12	— / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	11 / 9	— / —	— / —	— / —	— / —	11 / 13	— / —	352 / —	10 / 17	34 / —	102 / —	498 / 17	509 / 30	12
13	— / —	1 / —	2 / —	— / —	— / —	— / —	— / —	— / —	69 / —	— / —	— / —	7 / —	— / —	100 / 1	9 / 6	1 / —	40 / —	—1 / —	40 / —	89 / 6	189 / 7	13
14	33 / —	129 / 23	194 / 24	10 / —	56 / 1	2 / —	— / —	12 / —	10 / —	15 / —	37 / —	123 / 8	— / —	1,549 / 167	354 / 53	317 / 10	1,305 / 205	70 / —	1,257 / —	3,303 / 268	4,852 / 435	14
15	233 / 35	89 / 5	3 / —	— / —	— / —	— / —	— / —	2 / —	1 / —	2 / —	6 / 2	6 / —	— / —	417 / 134	446 / 45	13 / —	— / —	—5 / —1	365 / —	819 / 44	1,236 / 178	15
16	— / 24	9 / —	3 / —	— / —	— / —	— / —	— / —	1 / —	— / —	— / —	3 / —	6 / —	— / —	55 / 24	699 / 84	24 / —	— / —	18 / —	108 / —	849 / 84	904 / 108	16
17	47 / 3	— / 341	486 / 109	3 / —	15 / —	8 / —	51 / —	18 / 2	20 / —	11 / 1	148 / 4	355 / —	— / —	1,999 / 475	640 / 90	151 / —	42 / 3	14 / 3	318 / —	1,165 / 96	3,164 / 571	17
18	2 / —	14 / —	— / —	8 / —	5 / —	2 / —	11 / —	2 / —	7 / —	5 / —	53 / —	34 / —	— / —	260 / —	386 / —	303 / —	2,170 / —	21 / —	10 / —	2,890 / —	3,150 / —	18
19	1 / —	14 / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	17 / —	61 / —	— / —	177 / —	207 / —	13 / —	19 / —	— / —	4 / —	243 / —	420 / —	19
20	5 / —	63 / —	9 / —	4 / —	— / 1	5 / —	9 / —	10 / —	3 / —	6 / —	70 / —	48 / —	— / —	484 / 1	394 / —	63 / —	127 / —	— / —	— / —	584 / —	1,068 / 1	20
21	2 / —	6 / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	5 / —	7 / —	— / —	55 / —	52 / —	5 / —	12 / —	— / —	— / —	69 / —	124 / —	21
22	5 / —	82 / —	18 / —	1 / —	7 / —	— / —	— / —	— / —	30 / —	3 / —	107 / —	29 / —	— / —	475 / —	374 / —	46 / —	— / —	— / —	20 / —	440 / —	915 / —	22
23	— / —	22 / —	6 / —	12 / —	20 / —	— / —	— / —	— / —	— / —	— / —	26 / —	124 / —	28 / —	312 / —	147 / —	29 / —	17 / —	— / —	14 / —	207 / —	519 / —	23
24	4 / —	30 / —	8 / —	5 / —	12 / —	— / —	— / —	— / —	— / —	— / —	17 / —	212 / —	25 / —	515 / —	181 / —	40 / —	7 / —	1 / —	734 / —	963 / —	1,478 / —	24
25	8 / —	46 / —	25 / —	4 / —	3 / —	1 / —	2 / —	— / —	3 / —	— / —	86 / —	103 / —	— / —	403 / —	166 / —	41 / —	27 / —	— / —	17 / —	251 / —	654 / —	25
26	3 / —	15 / 3	72 / —	8 / —	2 / —	— / —	17 / —	— / —	— / —	2 / —	— / —	103 / —	— / —	488 / 3	3,679 / 14	101 / —	197 / —	— / —	311 / —	4,288 / 14	4,776 / 17	26
27	63 / —	204 / —	41 / —	28 / —	47 / —	— / —	20 / —	2 / —	36 / —	11 / —	378 / —	— / 11	— / —	2,018 / 11	2,362 / 11	506 / 1	181 / —	1 / —	371 / —	3,421 / 1	5,439 / 12	27
28	— / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	— / —	1,478 / —	2,732 / —	— / —	— / —	— / —	4,210 / —	4,210 / —	28
29 (i)	93	487	158	6	13	—	9	6	22	2	15	23	—	3,078	1,371	21	236	15	—	1,643	4,721	29 (i)
(ii)	—3	—40	—12	—	—	—	—	—	549	16	20	15	—	516	270	168	14	—1	262	713	1,229	(ii)
(iii)	90	447	146	6	13	—	9	6	571	18	35	38	—	3,594	1,641	189	250	14	262	2,356	5,950	(iii)
30	3	13	—	—	—	—	2	1	2	2	29	36	—	199	194	—393	—75	—	75	—199	—	30
31	518	1,507	1,323	240	444	31	214	187	787	123	1,346	1,313	—	17,941	17,547	4,989	4,794	212	5,814	33,356	51,297	31
32	9	70	55	10	48	11	62	—124	15	10	258	191	—	637	2,648	91	112	—	—	2,851	3,488	32
33	303	1,169	1,364	112	222	40	455	348	414	386	1,924	2,717	3,075	18,160	—	—	—	—	—	—	18,160	33
34	74	418	408	58	354	42	184	108	262	135	1,248	1,218(5)	1,135	8,609	—	—	—	—	—	—	8,609	34
35	904	3,164	3,150	420	1,068	124	915	519	1,478	654	4,776	5,439	4,210	45,347	20,195	5,080	4,906	212	5,814	36,207	81,554	35

(3) The sales by final buyers consist of scrap materials and fees and charges for government services. These inputs are not the output of any industry in 1963 and are therefore treated as primary inputs.

(4) Before providing for depreciation, but after deducting stock appreciation.

(5) Includes the 'residual error' in the national income accounts amounting to £28 million.

(6) Measured free from duplication.

Total requirements per £100 of final industrial output in terms of gross output, 1963 (¹)

TABLE 2

£

	Agricul-ture	Forestry and fishing	Coal mining	Other mining and quarry-ing	Food	Drink and tobacco	Mineral oil refining	Other chemi-cals, etc.	Metal manu-facture	Ship building	Motor vehicles	Aircraft
	1	2	3	4	5	6	7	8	9	10	11	12
1 Agriculture	103·7	0·2	0·1	0·1	21·8	3·5	0·1	0·5	0·1	0·1	0·1	—
2 Forestry and fishing	0·1	100·0	0·6	—	0·6	—	—	0·1	—	—	—	—
3 Coal mining	1·7	0·4	101·2	2·2	2·0	1·4	1·4	10·1	2·5	1·2	2·0	1·1
4 Other mining and quarrying	0·3	0·1	0·3	100·3	0·4	0·2	0·5	0·8	1·6	0·4	0·6	0·3
5 Food	17·3	0·2	0·1	0·2	103·8	2·8	0·3	2·0	0·2	0·1	0·2	0·1
6 Drink and tobacco	0·5	0·1	—	0·1	0·5	100·1	—	0·3	0·1	0·1	0·1	0·1
7 Mineral oil refining	1·7	5·0	0·5	1·4	1·2	0·8	100·7	4·7	1·8	0·8	1·0	0·6
8 Other chemicals, etc.	10·0	1·2	2·2	9·1	8·7	2·5	10·2	101·9	7·6	3·5	6·3	2·2
9 Metal manufacture	1·3	1·3	6·6	2·9	1·7	1·4	0·7	3·5	102·1	14·1	20·0	9·2
10 Shipbuilding	0·1	7·4	0·1	—	0·1	0·1	0·6	0·1	0·1	100·0	—	—
11 Motor vehicles	0·7	0·3	0·4	2·5	0·6	0·8	0·2	0·6	0·7	0·8	100·6	3·0
12 Aircraft	—	0·1	—	—	—	—	0·1	—	—	—	—	100·0
13 Other vehicles	0·1	0·1	0·1	0·1	0·2	0·1	0·1	0·3	0·7	0·2	0·5	0·3
14 Other engineering	4·0	2·1	6·1	10·3	5·2	4·8	1·6	6·6	8·9	17·9	25·6	12·9
15 Textiles	0·5	7·2	1·0	0·4	0·9	0·3	0·2	0·8	0·3	0·7	1·6	0·7
16 Leather and clothing	0·3	0·1	0·3	0·1	0·2	0·1	—	0·2	0·1	0·4	0·7	0·3
17 Other manufacturing	6·0	1·7	6·9	7·1	7·0	7·3	3·7	7·3	3·9	6·1	13·5	4·6
18 Construction	2·3	1·4	2·2	0·5	1·0	1·1	0·2	1·1	0·8	0·9	0·8	0·9
19 Gas	0·4	0·2	0·2	0·4	0·7	0·2	0·2	1·5	1·3	0·7	0·9	0·6
20 Electricity	1·9	0·6	3·3	2·6	1·9	1·2	1·5	2·7	2·8	2·1	2·4	1·7
21 Water	0·1	0·1	0·1	0·1	0·4	0·7	—	0·3	0·4	0·4	0·4	0·1
22 Road transport	1·4	0·5	0·5	13·3	1·5	5·4	0·7	2·0	2·0	0·8	1·6	0·8
23 Rail transport	0·7	0·3	0·3	0·5	0·9	0·7	0·5	1·8	1·8	0·5	0·9	0·4
24 Other transport	1·8	9·4	0·4	0·7	2·2	1·4	15·6	1·7	2·0	0·9	1·0	0·5
25 Communication	1·0	0·4	0·6	1·2	0·9	1·6	0·3	1·3	0·9	1·0	1·4	1·3
26 Distribution	8·3	3·9	0·8	4·1	3·0	1·6	0·5	1·4	0·9	1·7	2·2	0·9
27 Other services	11·5	7·9	5·8	11·0	8·0	8·8	3·1	10·0	8·7	12·3	10·9	11·8

(¹) Each entry represents the value of the gross output of the 'row' industry required to produce £100 of final output by the 'column' industry. The input-output coefficients have been derived from Table 1.

Total requirements per £100 of final industrial output in terms of gross output, 1963 (¹)

TABLE 2 (continued)   £

Other vehicles	Other engin-eering	Textiles	Leather and clothing	Other manu-facturing	Con-struction	Gas	Electri-city	Water	Transport Road	Rail	Other	Commu-nication	Distri-bution	Other services	
13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
0·1	0·1	2·4	0·7	0·3	0·1	0·1	—	—	—	0·1	0·4	—	—	0·2	1
—	—	—	—	0·2	—	0·2	0·1	—	—	—	—	—	—	—	2
1·9	1·6	1·9	1·4	3·1	1·2	28·0	22·4	2·3	0·7	6·9	0·3	0·8	1·0	1·2	3
0·5	0·7	0·1	0·2	2·0	2·1	0·3	0·2	0·3	0·2	0·2	0·1	0·2	0·2	0·2	4
0·1	0·2	0·6	0·3	0·3	0·1	0·2	0·1	0·1	0·1	0·1	0·6	—	0·1	0·7	5
0·1	0·1	—	0·1	0·1	—	0·1	0·1	—	—	—	—	—	0·1	0·8	6
1·1	0·9	0·8	0·5	1·1	1·2	2·7	2·2	1·2	1·9	1·8	1·4	0·4	0·6	0·5	7
3·5	4·5	2·3	2·8	5·8	4·8	4·7	2·0	2·9	1·7	4·1	0·8	0·6	1·0	2·9	8
19·3	16·6	0·7	1·3	2·1	6·2	6·9	2·9	8·1	1·9	6·4	0·9	0·9	0·8	1·3	9
0·1	—	0·1	—	0·1	—	0·1	0·1	—	—	—	3·9	0·1	0·2	—	10
0·5	1·1	0·3	0·6	0·8	0·7	0·6	0·4	0·2	8·2	0·2	0·4	0·5	0·6	2·3	11
—	—	—	—	—	—	—	—	—	—	—	0·7	—	—	—	12
100·2	0·4	0·1	0·1	0·2	0·2	0·5	0·3	0·1	0·1	13·4	—	0·6	0·4	0·3	13
12·7	102·7	2·4	5·2	5·7	8·2	5·5	7·3	3·3	2·7	5·2	1·9	3·0	1·9	3·8	14
0·9	0·9	100·2	26·1	3·1	0·7	0·4	0·4	0·3	0·3	0·8	0·2	0·4	0·3	0·5	15
0·1	0·2	0·4	100·1	0·3	0·2	0·1	0·1	—	0·1	0·2	—	—	0·1	0·2	16
7·2	7·6	1·6	6·9	102·1	17·1	4·4	4·1	7·7	7·4	5·6	2·3	2·6	4·6	7·8	17
0·9	0·8	0·6	0·6	0·8	100·3	2·7	1·1	1·8	1·4	0·8	0·6	0·9	1·3	0·9	18
1·0	0·9	0·3	0·4	0·7	0·3	100·3	0·2	0·2	0·2	0·3	0·1	0·1	0·5	1·3	19
2·1	2·1	2·2	1·5	2·6	1·2	2·4	101·1	4·6	1·4	2·7	0·5	1·2	1·9	1·4	20
0·1	0·2	0·2	0·3	0·2	0·1	0·1	—	100·1	0·1	0·1	—	—	0·1	0·2	21
0·9	1·6	1·0	1·2	3·2	1·6	0·8	1·0	0·5	100·4	0·4	2·2	0·7	2·6	1·0	22
0·6	0·7	0·4	0·3	1·1	0·7	3·3	2·1	0·4	0·3	100·3	0·1	4·1	2·9	0·9	23
1·4	0·9	2·2	1·3	1·5	0·9	2·0	1·7	0·5	0·6	0·6	100·3	2·8	4·7	0·9	24
1·2	1·6	1·0	1·5	1·9	1·4	1·5	0·7	1·1	0·6	0·4	0·4	100·2	2·1	2·2	25
2·7	1·6	0·6	0·8	1·0	2·8	2·5	0·6	0·3	2·2	0·6	0·3	0·5	100·4	2·2	26
10·6	11·7	2·6	9·0	8·5	4·6	9·9	6·8	2·0	4·0	3·4	3·5	2·7	9·0	101·9	27

Total requirements per £100 of final industrial output in terms of net output, 1963 (¹)

TABLE 3   £

		Agriculture	Forestry and fishing	Coal mining	Other mining and quarrying	Food	Drink and tobacco	Mineral oil refining	Other chemicals, etc.	Metal manufacture	Ship building	Motor vehicles	Aircraft
		1	2	3	4	5	6	7	8	9	10	11	12
1	Agriculture	58·4	0·1	—	—	12·2	2·0	0·1	0·3	—	—	0·1	—
2	Forestry and fishing	0·1	67·3	0·4	—	0·4	—	—	0·1	0·1	—	—	—
3	Coal mining	1·2	0·3	72·4	1·6	1·5	1·0	1·0	7·2	1·8	0·9	1·4	0·8
4	Other mining and quarrying	0·1	—	0·1	44·4	0·2	0·1	0·2	0·3	0·7	0·2	0·3	0·1
5	Food	5·4	—	—	0·1	32·0	0·9	0·1	0·6	0·1	—	0·1	—
6	Drink and tobacco	0·2	—	—	—	0·2	49·5	—	0·1	—	—	—	—
7	Mineral oil refining	0·2	0·5	0·1	0·1	0·1	0·1	10·8	0·5	0·2	0·1	0·1	0·1
8	Other chemicals, etc.	3·9	0·5	0·9	3·5	3·4	1·0	4·0	39·7	3·0	1·4	2·5	0·9
9	Metal manufacture	0·5	0·6	2·9	1·3	0·7	0·6	0·3	1·5	44·5	6·1	8·7	4·0
10	Shipbuilding	—	3·8	—	—	0·1	—	0·3	—	—	51·1	—	—
11	Motor vehicles	0·2	0·1	0·1	0·8	0·2	0·3	0·1	0·2	0·2	0·1	32·3	1·0
12	Aircraft	—	—	—	—	—	—	0·1	—	—	—	—	57·5
13	Other vehicles	0·1	—	—	0·1	0·1	0·1	—	0·1	0·3	0·1	0·2	0·2
14	Other engineering	2·1	1·1	3·3	5·5	2·8	2·5	0·9	3·5	4·7	9·4	13·4	6·8
15	Textiles	0·3	4·0	0·6	0·2	0·5	0·2	0·1	0·5	0·2	0·4	0·9	0·4
16	Leather and clothing	0·1	—	0·1	—	0·1	—	—	0·1	—	0·2	0·3	0·1
17	Other manufacturing	3·0	0·9	3·5	3·5	3·5	3·7	1·9	3·7	2·0	3·1	6·8	2·3
18	Construction	1·3	0·8	1·2	0·3	0·6	0·6	0·1	0·6	0·4	0·5	0·4	0·5
19	Gas	0·2	0·1	0·1	0·2	0·3	0·1	0·1	0·6	0·5	0·3	0·4	0·2
20	Electricity..	1·1	0·3	1·8	1·4	1·0	0·7	0·8	1·5	1·5	1·1	1·3	0·9
21	Water	0·1	—	—	0·1	0·3	0·4	—	0·2	0·2	0·3	0·3	0·1
22	Road transport	1·0	0·4	0·3	9·3	1·0	3·7	0·5	1·4	1·4	0·5	1·1	0·5
23	Rail transport	0·6	0·2	0·3	0·4	0·8	0·6	0·4	1·6	1·6	0·5	0·8	0·4
24	Other transport..	0·8	4·3	0·2	0·3	1·0	0·6	7·1	0·8	0·9	0·4	0·5	0·2
25	Communication..	0·8	0·3	0·5	1·0	0·7	1·2	0·2	1·0	0·7	0·8	1·1	1·1
26	Distribution	5·6	2·6	0·5	2·7	2·0	1·1	0·3	0·9	0·6	1·2	1·4	0·6
27	Other services	8·3	5·7	4·2	7·9	5·8	6·4	2·3	7·2	6·5	8·9	7·9	8·5
28	Sales by final buyers	0·3	0·2	0·3	0·9	0·5	0·6	0·1	0·6	3·0	0·9	1·2	3·4
29	Imports of goods and services ..	18·4	11·9	4·4	6·8	28·4	18·7	66·1	22·5	21·9	8·6	13·5	7·3
30	Taxes on expenditure *less* subsidies	—14·3	—6·0	1·8	7·6	—0·4	3·3	2·1	2·7	3·0	2·9	3·0	2·1
	Total	100	100	100	100	100	100	100	100	100	100	100	100

(¹) Each entry represents the value of the net output (including depreciation) of the 'row' industry required to produce £100 of final output by the 'column' industry. The input-output coefficients have been derived from Table 1.

Total requirements per £100 of final industrial output in terms of net output, 1963 (¹)

TABLE 3 (continued)   £

Other vehicles	Other engin- eering	Textiles	Leather and clothing	Other manu- facturing	Con- struction	Gas	Electri- city	Water	Transport Road	Rail	Other	Commu- nication	Distri- bution	Other services	
13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
—	—	1·4	0·4	0·1	—	—	—	—	—	—	0·2	—	—	0·1	1
—	—	—	—	0·1	—	0·1	0·1	—	—	—	—	—	—	—	2
1·4	1·1	1·4	1·0	2·2	0·8	20·0	16·1	1·7	0·5	4·9	0·2	0·6	0·7	0·8	3
0·2	0·3	—	0·1	0·9	1·0	0·1	0·1	0·1	0·1	0·1	—	0·1	0·1	0·1	4
—	0·1	0·2	0·1	0·1	—	—	—	—	—	—	0·2	—	—	0·2	5
—	—	—	—	0·1	—	—	—	—	—	—	—	—	—	0·4	6
0·2	0·1	0·1	0·1	0·1	0·1	0·3	0·2	0·1	0·2	0·2	0·2	—	0·1	0·1	7
1·3	1·7	1·0	1·1	2·3	1·9	1·8	0·8	1·1	0·7	1·6	0·3	0·2	0·4	1·1	8
8·4	7·2	0·3	0·6	0·9	2·7	3·0	1·3	3·6	0·8	2·8	0·4	0·4	0·3	0·6	9
—	—	—	—	—	—	—	—	—	—	—	2·0	0·1	0·1	—	10
0·2	0·4	0·1	0·2	0·3	0·2	0·2	0·1	0·1	2·6	0·1	0·1	0·1	0·2	0·7	11
—	—	—	—	—	—	—	—	—	—	—	0·4	—	—	—	12
48·4	0·2	—	—	0·1	0·1	0·2	0·2	—	—	6·4	—	0·3	0·2	0·1	13
6·7	54·4	1·3	2·8	2·9	4·3	2·9	3·9	1·7	1·4	2·8	1·0	1·6	1·0	2·0	14
0·5	0·5	55·7	14·5	1·7	0·4	0·2	0·2	0·2	0·2	0·4	0·1	0·2	0·2	0·3	15
—	0·1	0·1	41·8	0·1	0·1	—	—	—	—	0·1	—	—	—	0·1	16
3·6	3·8	0·8	3·4	51·2	8·6	2·2	2·1	3·8	3·7	2·8	1·1	1·3	2·3	3·9	17
0·5	0·5	0·3	0·3	0·4	56·6	1·6	0·6	1·0	0·8	0·4	0·3	0·5	0·8	0·5	18
0·4	0·4	0·1	0·1	0·3	0·1	40·6	0·1	0·1	0·1	0·1	—	—	0·2	0·5	19
1·1	1·2	1·2	0·8	1·4	0·6	1·3	54·5	2·5	0·8	1·5	0·3	0·7	1·0	0·7	20
0·1	0·2	0·1	0·2	0·2	0·1	—	—	66·4	—	—	—	—	0·1	0·1	21
0·6	1·1	0·7	0·8	2·3	1·1	0·6	0·7	0·3	70·2	0·3	1·5	0·5	1·8	0·7	22
0·6	0·6	0·4	0·3	0·9	0·6	2·9	1·8	0·3	0·2	88·3	0·1	3·6	2·5	0·8	23
0·6	0·4	1·0	0·6	0·7	0·4	1·0	0·8	0·2	0·3	0·3	46·2	1·3	2·2	0·4	24
0·9	1·3	0·8	1·2	1·5	1·1	1·2	0·5	0·9	0·4	0·3	0·3	79·8	1·7	1·8	25
1·8	1·0	0·4	0·5	0·7	1·8	1·7	0·4	0·2	1·5	0·4	0·2	0·3	66·8	1·5	26
7·7	8·4	1·9	6·5	6·2	3·3	7·3	4·9	1·4	2·9	2·5	2·5	1·9	6·5	73·6	27
1·3	1·1	0·5	0·6	0·6	0·4	0·4	0·2	0·3	0·4	0·5	0·2	0·4	0·7	0·8	28
10·9	11·1	28·6	19·8	18·5	10·7	7·3	5·4	4·3	4·7	6·2	40·7	5·1	4·4	4·0	29
2·6	2·8	1·6	2·2	3·2	3·0	3·1	5·0	9·7	7·5	—23·0	1·5	1·0	5·7	4·1	30
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	

Industrial output in terms of primary input in 1963

TABLE 4

Percentages

	Income from employment	Gross profits and other trading income (¹)	Imports of goods and services	Taxes on expenditure *less* subsidies	Sales by final buyers	Final output
Agriculture	45·3	50·3	18·4	—14·3	0·3	100
Forestry and fishing	57·5	36·4	11·9	— 6·0	0·2	100
Coal mining	73·6	19·9	4·4	1·8	0·3	100
Other mining and quarrying ..	53·3	31·4	6·8	7·6	0·9	100
Food	42·5	29·0	28·4	— 0·4	0·5	100
Drink and tobacco	38·4	39·0	18·7	3·3	0·6	100
Mineral oil refining	18·4	13·3	66·1	2·1	0·1	100
Other chemicals, etc.	46·4	27·8	22·5	2·7	0·6	100
Metal manufacture	48·4	23·7	21·9	3·0	3·0	100
Shipbuilding	71·7	15·9	8·6	2·9	0·9	100
Motor vehicles	58·3	24·0	13·5	3·0	1·2	100
Aircraft	64·3	22·9	7·3	2·1	3·4	100
Other vehicles	69·8	15·4	10·9	2·6	1·3	100
Other engineering	60·5	24·5	11·1	2·8	1·1	100
Textiles	46·6	22·7	28·6	1·6	0·5	100
Leather and clothing	57·9	19·5	19·8	2·2	0·6	100
Other manufacturing	55·6	22·1	18·5	3·2	0·6	100
Construction	63·8	22·1	10·7	3·0	0·4	. 100
Gas	62·6	26·6	7·3	3·1	0·4	100
Electricity	47·4	42·0	5·4	5·0	0·2	100
Water	45·3	40·4	4·3	9·7	0·3	100
Road transport	61·8	25·6	4·7	7·5	0·4	100
Rail transport	88·3	28·0	6·2	—23·0	0·5	100
Other transport	36·6	21·0	40·7	1·5	0·2	100
Communication	68·8	24·7	5·1	1·0	0·4	100
Distribution	56·1	33·1	4·4	5·7	0·7	100
Other services	62·8	28·3	4·0	4·1	0·8	100
Total final output (²)	50·2	23·8	16·4	9·6	—	100

(¹) Before providing for depreciation but after deducting stock appreciation.
(²) Including taxes on final demand.

Industrial composition of final output in net output terms in 1963

TABLE 5

Percentages

	Personal expenditure	Public authorities' current expenditure	Gross domestic fixed capital formation	Exports	Total final output
Agriculture	4·0	0·3	0·1	0·9	2·5
Forestry and fishing	0·2	—	—	—	0·2
Coal mining	2·0	1·3	1·7	1·9	1·8
Other mining and quarrying	0·1	0·2	0·6	0·4	0·2
Food	2·6	0·4	—	0·9	1·7
Drink and tobacco	1·6	0·1	—	1·0	1·1
Mineral oil refining	0·1	0·1	0·1	0·4	0·2
Other chemicals, etc.	1·5	1·7	1·6	4·0	1·9
Metal manufacture	0·8	1·4	4·3	5·2	2·1
Shipbuilding	0·1	1·5	1·0	0·7	0·5
Motor vehicles	1·0	0·6	2·2	3·7	1·7
Aircraft	—	4·0	0·1	1·2	0·8
Other vehicles	0·2	0·1	0·6	0·5	0·2
Other engineering	2·7	5·2	17·9	14·7	7·1
Textiles	2·0	0·4	0·4	4·2	1·9
Leather and clothing	1·5	0·2	0·1	0·9	1·0
Other manufacturing	3·8	3·3	6·1	5·7	4·4
Construction	1·5	3·6	25·3	0·5	4·9
Gas	0·6	0·3	0·4	0·3	0·5
Electricity	1·7	1·1	2·2	1·0	1·6
Water	0·3	0·1	0·3	0·1	0·2
Road transport	2·2	1·1	1·0	1·4	1·7
Rail transport	1·5	0·9	1·0	1·0	1·3
Other transport	1·2	0·6	0·6	6·5	1·9
Communication	1·5	1·2	1·5	1·2	1·4
Distribution	13·0	1·9	4·0	4·4	8·8
Other services	12·1	9·8	7·7	10·1	10·8
Public administration, etc.	7·3	53·8	—	—	11·6
Imports of goods and services ..	16·9	8·9	15·0	22·7	16·4
Sales by final buyers	1·4	—7·2	—0·9	2·1	—
Taxes on expenditure less subsidies ..	14·6	3·1	5·1	2·4	9·6
Total	100	100	100	100	100

The proportion of net output exported in 1963

TABLE 6   Percentages

	Direct	Indirect	Total
Agriculture	2·6	3·2	5·8
Forestry and fishing	2·4	2·9	5·3
Coal mining	3·6	13·1	16·7
Other mining and quarrying	9·8	16·2	26·0
Food	6·5	2·1	8·6
Drink and tobacco	14·0	0·8	14·8
Mineral oil refining	25·1	12·8	37·9
Other, chemicals, etc.	21·6	11·9	33·5
Metal manufacture	16·3	23·9	40·2
Shipbuilding	15·0	9·1	24·1
Motor vehicles	35·0	2·8	37·8
Aircraft	20·0	2·7	22·7
Other vehicles	21·2	8·7	29·9
Other engineering	25·9	7·4	33·3
Textiles	29·5	5·8	35·3
Leather and clothing	11·9	1·4	13·3
Other manufacturing	10·1	10·8	20·9
Total manufacturing	25·6	2·6	28·2
Construction	0·3	1·4	1·7
Gas	1·0	9·7	10·7
Electricity	—	10·1	10·1
Water	—	10·4	10·4
Road transport	2·2	11·0	13·2
Rail transport	2·7	9·5	12·2
Other transport	49·7	5·6	55·3
Communication	2·6	11·1	13·7
Distribution	6·5	1·5	8·0
Other services	6·8	8·2	15·0
Gross domestic product	—	—	16·3

Final output in terms of primary input in 1963

TABLE 7   Percentages

Primary input \ Final output	Personal expenditure	Public authorities' current expenditure	Gross domestic fixed capital formation	Exports	Total final output
Income from employment	40·2	83·0	58·1	49·5	50·2
Gross profits and other trading income	26·9	12·2	22·7	23·3	23·8
Imports of goods and services	16·9	8·9	15·0	22·7	16·4
Taxes on expenditure less subsidies	14·6	3·1	5·1	2·4	9·6
Sales by final buyers	1·4	—7·2	—0·9	2·1	—
Total	100	100	100	100	100

Productive potential and the demand for labour

by J. R. SHEPHERD

Introduction

In the course of regular analysis and forecasting of economic prospects it is frequently necessary to relate the total level of demand for output of goods and services to the supply of labour with which it is produced. A certain limited rate of growth of real output can normally be sustained through increases in productivity (however caused) or through increases in the numbers available for work, without involving increasing shortages of labour. This rate of growth is commonly referred to as the growth of 'productive potential'. Growth rates lower than this will lead to increases in unemployment and higher growth rates will lead to increasing shortages of labour.

Formulation in these terms can lead to misconceptions. It is untrue, for instance, that there is any intention of implying that growth rates cannot or will not change. There is no reason for expecting any such stability, and an analysis of the kind described here does not attempt the immensely difficult task of discovering the ultimate determinants of growth rates. In particular, it cannot be taken for granted that the growth rate of productive potential is independent of the pressure of demand for labour. It is true, however, that the analysis is of more value as an analytical and forecasting tool when the statistical evidence is consistent with a reasonable degree of stability (apart from changes due to such factors as changes in population or in normal working hours which are automatically allowed for) for at least a limited period. This means that a rough guideline to likely current developments can be inferred from past experience. Any likely departures from past trends can then be considered in relation to the features of a particular situation.

The measurement of productive potential cannot be separated from an analysis of short-period changes in employment and unemployment. Productive potential has been defined as the output associated with a given intensity of labour utilisation and it can only be assessed statistically if actual movements in employment and unemployment can be shown to be related to cyclical movements in output. It is therefore necessary to build a 'model' which accounts for actual variations in employment and unemployment in terms of changes in output, and to infer from the model the growth rate which would keep unemployment constant: this, by definition, is the growth of productive potential. A model of this kind is, of course, directly applicable to forecasting movements in employment and unemployment.

The present note sets out one such model in the form now used in the Treasury. Although there have been a number of modifications, this is essentially the model which has already appeared in the National Institute Review[1]. The discussion in that article is not repeated here, and no attempt is made to give a full explanation of why this particular form was selected for the relationships. The following paragraphs offer first a brief non-technical description, and secondly a precise statement of the model as it now stands, together with an explanation of the modifications introduced since the original article.

It is emphasized that no unique merit is claimed for this precise way of expressing the relationships. The implications of other approaches are frequently considered in the course of inter-departmental discussions.

The model in outline

Essentially, the model consists of relationships whereby the level of employment and unemployment can be predicted if the values of certain pre-determined variables are known. The most important of these pre-determined variables is the volume of total output (gross domestic product). However, the availability of labour is also important and the 'supply of labour' and the level of normal working hours are essential pre-determined variables. The 'supply of labour' is a measure of the number of individuals who are able and willing to work. It differs from the statistical series for the working population (employed *plus* registered unemployed) because the working population is known to be affected by the state of demand for labour as well as by the supply. The labour supply is therefore defined as the level of employment that would occur concurrently with a given level of unemployment. It cannot be directly measured, but changes can be estimated by use of the observed relationship between employment and unemployment. This is one of the two principal relationships in the model.

It can be shown statistically that cyclical fluctuations in employment are substantially greater than the corresponding fluctuations in unemployment. It also seems probable that the 'gearing' between changes in employment and in unemployment differs according to the level of unemployment. When unemployment is very low, many vacancies cannot be filled from the registered unemployed and a large part of any further recruitment consists of married women and other marginal workers who were not previously registered and may not

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[1] 'Long-term Growth and Short-term Policy', by W. A. H. Godley and J. R. Shepherd. *National Institute Economic Review* No. 29, August 1964.

register if they subsequently lose their jobs. On the other hand, when unemployment is relatively high changes in employment are more likely to affect the hard core of the labour force who will register when not at work. The (very approximate) estimates derived from the equations suggest that with a low level of unemployment (say 300 thousand) an increase of one thousand in unemployment is associated with a reduction of about $2\frac{1}{2}$ thousand in employment in relation to the labour supply. With a higher level of unemployment (say 500 thousand) this figure is reduced to about $1\frac{1}{2}$ thousand.

The employment-unemployment relationship, therefore, postulates that with employment growing at the same rate as the labour supply, unemployment will remain constant. Fluctuations in unemployment are shown to be associated with somewhat larger deviations in employment from the labour supply. Estimates of the labour supply are derived by correcting the employment figures for the estimated effect of changes in unemployment.

The second relationship indicates how employment and unemployment respond to changes in output. In order to allow for time-lags this has been formulated in two stages, the first specifying the level of 'equilibrium employment' [2] towards which employers are adjusting and the second indicating the pace of the process of adjustment.

In formulating the equilibrium relationship, assumptions are made about the effect on productive potential of changes in the labour supply and normal working hours. It is assumed that changes in the labour supply affect the short-term but not the long-term trend in output per head. Otherwise, changes in productive potential are represented by time trends. It is clear from the results that cyclical fluctuations in employment are proportionately much smaller than those in output. When output rises at the same rate as productive potential unemployment, by definition, remains constant (apart from time-lags) and 'equilibrium employment' changes at the same rate as the labour supply. For every 1 per cent by which output deviates from productive potential, equilibrium employment is affected by slightly less than $\frac{1}{2}$ per cent. Given the relationship between employment and unemployment this means that, at the margin, an increase of 1 per cent in output gives rise to a fall of about $\frac{1}{5}$ per cent in unemployment when unemployment is already low (300 thousand), but to a larger fall of about $\frac{1}{3}$ per cent when unemployment is somewhat higher (500 thousand). The proportionately small fluctuations in employment compared with output are explained, in part, by the relative stability (in the short-term) of the overhead labour force and by fluctuations in hours of work.

The adjustment process takes account of the time-lag in the immediate response of employment to changes in output. This appears to be much longer than average when equilibrium employment is rising rapidly and

large-scale recruitment is involved. When equilibrium employment is falling or rising very slowly the adjustment process used implies a distributed lag averaging between 1 and 2 months. This lag rises to about 9 months when employment is rising rapidly.

As previously indicated, the growth rate of productive potential can be inferred from the fitted relationships by calculating the growth of output which would keep unemployment constant. For the period 1955-60 the estimated annual growth rate is 2·9 per cent: this rises in 1960-66 to 3·3 per cent. It should be noted that during these periods the labour supply was growing significantly, which is not the case currently; on the other hand there were significant reductions in normal working hours.

The model in detail

The employment-unemployment relationship

The present equation is:

(1) $E-D = 27,588 -1,639 \log U +30·93t -30·38t'$
$\qquad\qquad\qquad\qquad (1·9)\qquad (3·0)$

$$s = 57$$
(standard error of residual)

$$d = 0·43$$
(Durbin and Watson statistic)

where E = employment in thousands (including armed forces and self-employed)

D = contribution to labour force of demographic changes given constant activity rates: changes compared with mid-1951

U = unemployment in thousands

t = time in quarters: 1955 1st quarter = 1

t' = 0 up to fourth quarter 1960: then rises 1 per quarter.

This was fitted by least squares to quarterly data covering 1955-66. Standard errors are shown beneath regression coefficients but, owing to the high serial correlation, do not mean very much. The main difference from the relationship shown in the National Institute article is that, for reasons referred to in the previous section, changes in employment and in unemployment are now connected by a curve rather than a straight line. The logarithmic form is a convenient way of obtaining a suitable curve and has no theoretical significance.

Equation 1 is the source of estimates of the supply of labour. This is defined as the level of employment which would be available at a constant percentage rate of unemployment. This rate is fixed (quite arbitrarily) at $1\frac{1}{4}$ per cent of the labour supply. The labour supply (L) is therefore obtained as the solution of:

(2) $L + 1,639 \log (0·0125L)$
$\qquad = 27,588 +D +30·93t -30·38t'$

This equation is easily solved by a numerical method.

In projection, the calculated trends are not necessarily applied blindly. Account is taken of likely developments in school-leaving and other factors affecting activity rates.

Employment-output equations

The relationship between employment and output is formulated in two stages:

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[2] The terms 'equilibrium employment' and the analogous 'equilibrium unemployment' are used here as a device for taking account of time-lags which quite plainly exist. In this respect it is no different from any other use of a distributed time-lag in econometrics. No attempt has been made to produce a theoretical interpretation of the state of equilibrium in terms of the optimisation of employers' objectives.

(a) There is an equilibrium level of employment towards which employers are adjusting their labour force. If output is rising at the same rate as productive potential the growth of 'equilibrium' employment will equal that of the labour supply. Changes in the ratio of output to productive potential are shown to lead to proportionately smaller changes in the ratio of employment to the labour supply.

(b) There is an adjustment process according to which actual employment moves towards equilibrium employment.

The two relationships are estimated iteratively in such a way as to obtain the best possible explanation of the movement of employment. This is not the same as obtaining the best possible fit to equation 3 alone. A provisional adjustment relationship is used in conjunction with observed changes in employment to infer the level of equilibrium employment. The relationship between equilibrium employment and output is then estimated by least squares, and the resulting calculated levels of employment are used to reconsider the adjustment procedure. The process is then repeated. The equations were fitted to the period 1955-66 using quarterly data. The results were as follows:

(3) $e^* - l = 0.80551 + 0.4442 \ (p - \frac{1}{2}l - \frac{1}{4}l_{-4} - \frac{1}{4}h)$
$\qquad - 0.0011896t - 0.0002974t''$
$\qquad (\cdot000072) \qquad (\cdot000074)$

$$s = 0.00137$$
(standard error of residual)

$$d = 1.11$$
(Durbin and Watson statistic)

Apart from t and t'', lower case letters denote logarithms (to base 10).

(4) $(E - E_{-1}) = 0.7 \ (E^* - E_{-1}) \qquad E^* - E_{-1} < 30$
$\quad (E - E_{-1}) = 13.5 + 0.25 \ (E^* - E_{-1}) \qquad E^* - E_{-1} > 30$

where E = actual employment in thousands
$\quad E^*$ = 'equilibrium' employment
$\quad L$ = labour supply
$\quad P$ = gross domestic product (at constant prices: index 1958 = 100)
$\quad H$ = normal hours (index 1958 = 100)
$\quad t$ = time in quarters: 1955 1st quarter = 1
$\quad t''$ = 0 up to 1960, 2nd quarter: then rises 1 per quarter.

Productive potential

By definition, the growth of productive potential is measured by the extent to which output can rise at a constant level of unemployment. Estimates can therefore be obtained directly from equation 3 by calculating the output which would be necessary to keep equilibrium employment equal to the labour supply. From the definition of labour supply it follows that this is the level of output which would keep 'equilibrium unemployment' (the unemployment which would occur if employment was in adjustment to the current level of output) constant. As with the labour supply, there is an arbitrary element in the level of productive potential defined in this way, but not in the rate of change. Productive potential as derived from equation 3 is given by the following equation:

(5) $c = \frac{1}{2}l + \frac{1}{4}l_{-4} + \frac{1}{4}h - 1.81321 + 0.0026778t$
$\qquad + 0.0006694t''$

where C represents productive potential and the other variables are as previously defined.

There is, however, one complication. The equations as estimated imply that, after a year's delay, an increase or decrease of 1 per cent in the supply of labour contributes only $\frac{3}{4}$ per cent to productive potential and that this contribution gets no larger after further delays: a faster growth in the labour supply implies, other things being equal, a slower growth in productivity. In the short-term over the period to which the equations were fitted, this assumption seemed reasonable. Deviations from trend in the growth of the labour supply depended primarily on the inflow of school-leavers and, to a smaller extent, on the net inflow of immigrants and on the effects of pension arrangements on retirement dates. It is fairly clear that school-leavers can be expected, in the very short term, to contribute less than proportionately to output, and similar arguments can be advanced concerning the other groups. But these arguments do not apply in the longer term and there is some presumption (though no certainty) that a sustained change in the growth rate of the labour supply will eventually be associated with a similar change in the growth of productive potential. If this is so, the terms in current and lagged labour supply in equation 5 should add to one, but this should probably be achieved by extending the lag and not by increasing the existing coefficients. Originally, prolonged lags of this kind were omitted because, over the period to which the equations were fitted, their effects would hardly have been distinguishable from the trend. However, in projecting into a period in which the trend growth in the labour supply is much lower than in the past the difference is likely to be much more noticeable than it would have been within the period 1955-66. Accordingly, the equation has been adapted to fit the assumption that, after 3 years, changes in the labour supply are reflected proportionately in productive potential. The estimated trend was adapted so as to make the adjusted equation show the same growth of productive potential between 1960 and 1966 (that is, for the period following the break of trend in the equation) as was shown by the unadjusted equation. This treatment leads to:

(6) $c = \frac{1}{2}l + \frac{1}{4}l_{-4} + \frac{1}{8}(l_{-8} + l_{-12}) + \frac{1}{4}h$
$\qquad - 2.90311 + 0.0024647t + 0.0006694t''$

An equivalent adjustment has been made to the employment equation.

The data

The published data have been adjusted in various ways. For employment and unemployment the principal adjustment is to smooth the figures for construction and agriculture during the winter months in such a way as to remove distortions introduced by weather conditions. For gross domestic product a compromise series based on the movements of output, expenditure and income series was used. The construction of these estimates was described in the National Institute *Review* for February 1964. The figures for employment and for gross domestic product were smoothed by a centred two-quarter moving average. All series used were as estimated in January 1968.
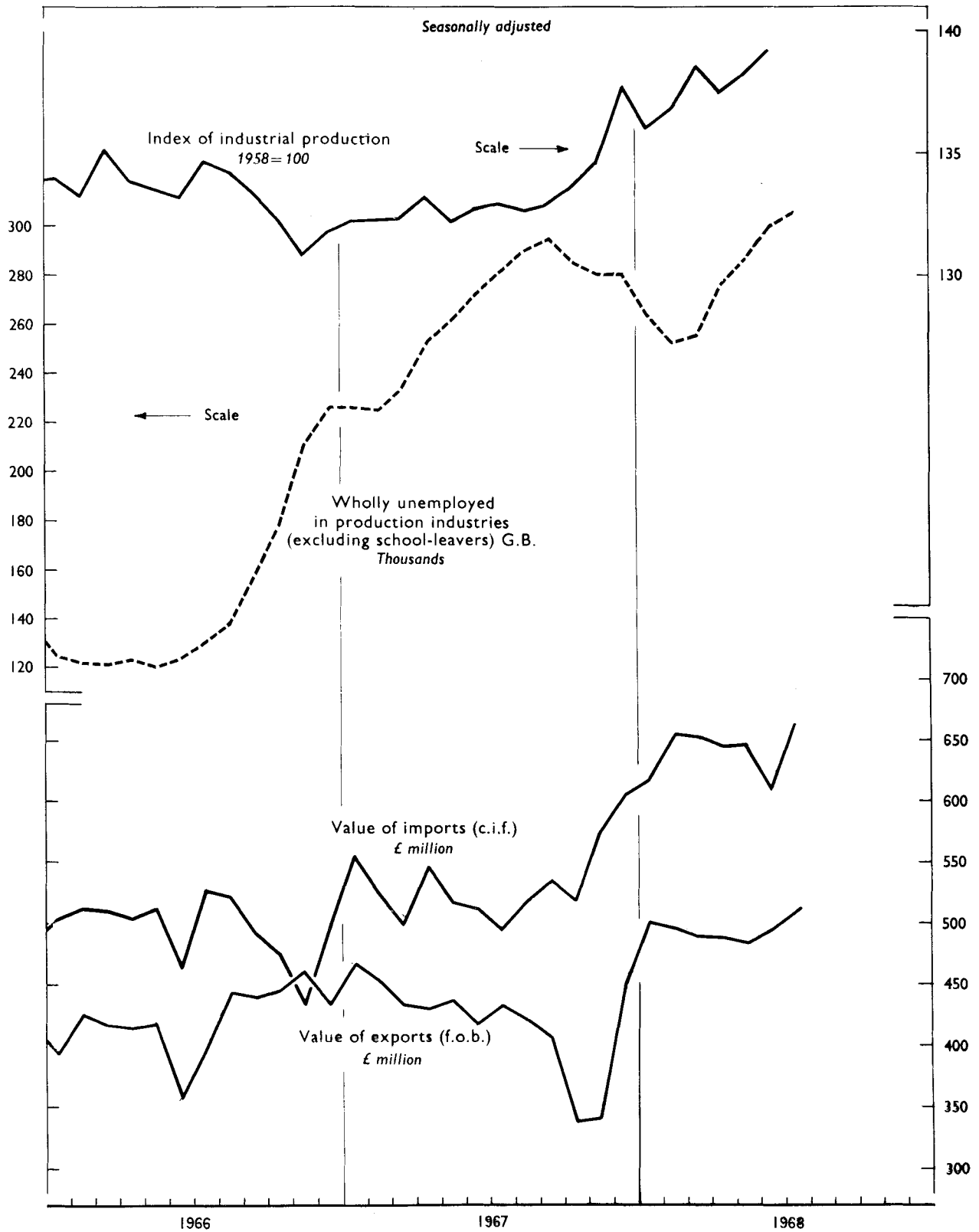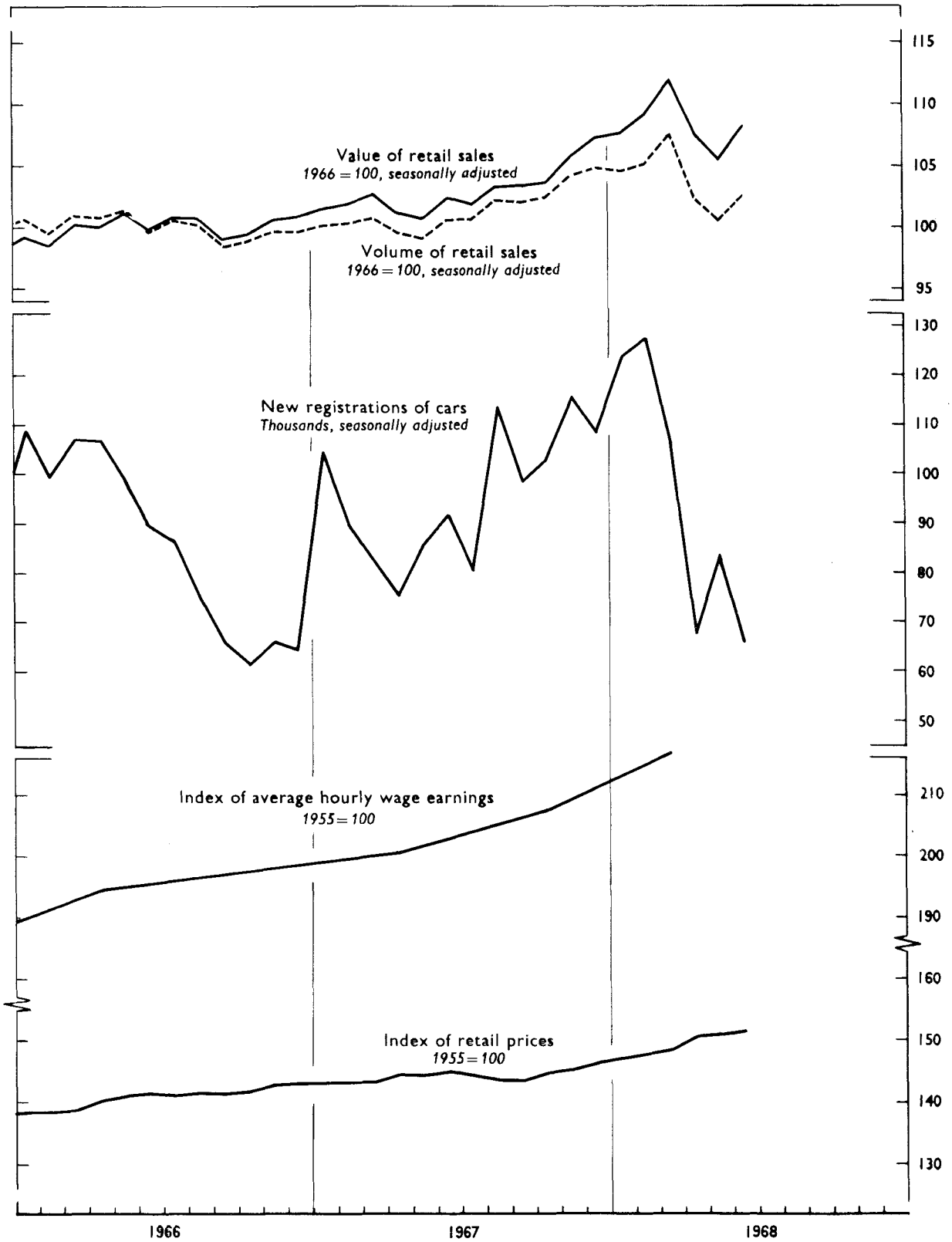
H.M. Treasury

CHARTS AND STATISTICS

Latest developments

The charts in this section show key monthly indicators on a larger time scale than that used for the longer periods covered in other sections.


Seasonally adjusted

Index of industrial production
1958=100

Scale →

← Scale

Wholly unemployed
in production industries
(excluding school-leavers) G.B.
Thousands

Value of imports (c.i.f.)
£ million

Value of exports (f.o.b.)
£ million

1966   1967   1968

Latest developments

Value of retail sales
1966 = 100, seasonally adjusted

Volume of retail sales
1966 = 100, seasonally adjusted

New registrations of cars
Thousands, seasonally adjusted

Index of average hourly wage earnings
1955 = 100

Index of retail prices
1955 = 100

1966   1967   1968

Gross domestic product and components of final expenditure

Gross domestic product is a measure of the aggregate output of the economy. When estimated from expenditure data it equals the sum of consumers' expenditure, exports, fixed investment, public authorities' consumption and stockbuilding, *less* imports (which are the products of other countries). Gross domestic product can also be estimated from output or from income data.

£ million, 1958 prices, seasonally adjusted

Gross domestic product

Expenditure based ——
*Income based - - - -

Components of final expenditure

Consumers' expenditure

Exports of goods and services

Fixed investment

Public authorities' consumption

Stockbuilding

£ million, 1958 prices, seasonally adjusted
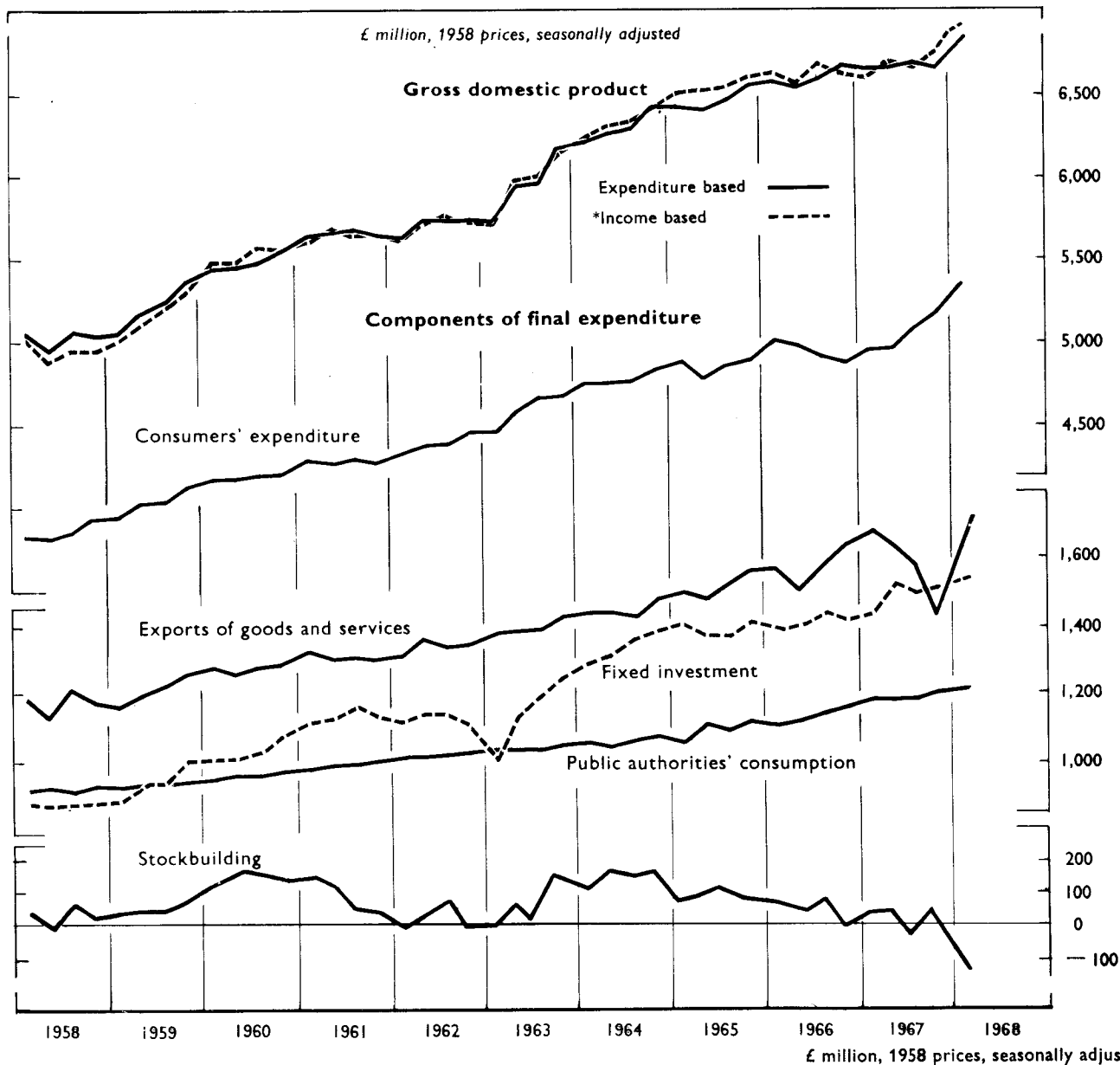
	Gross domestic product at factor cost (expenditure based)	Final expenditure on goods and services at market prices					
		Total	Consumers' expenditure	Public authorities' consumption	Fixed investment	Exports of goods and services	Stockbuilding
1967 1st quarter	6,655	9,276	4,953	1,179	1,440	1,667	37
2nd quarter	6,656	9,316	4,967	1,179	1,521	1,603	46
3rd quarter	6,677	9,297	5,076	1,179	1,499	1,575	—32
4th quarter	6,674	9,351	5,166	1,198	1,506	1,431	50(¹)
1968 1st quarter	6,830	9,685	5,346	1,208	1,540	1,717	—126(¹)

* Income data deflated by the price index implied by estimates based on expenditure data.
(¹) Including an allowance for the difference in timing between the estimates of stockbuilding and the recording of exports.

4

Personal disposable income, spending and borrowing

The monetary resources at the disposal of consumers consist of their disposable income *plus* their borrowing e.g. through increases in hire purchase debt. Much of this borrowing is for the purchase of consumer durables.
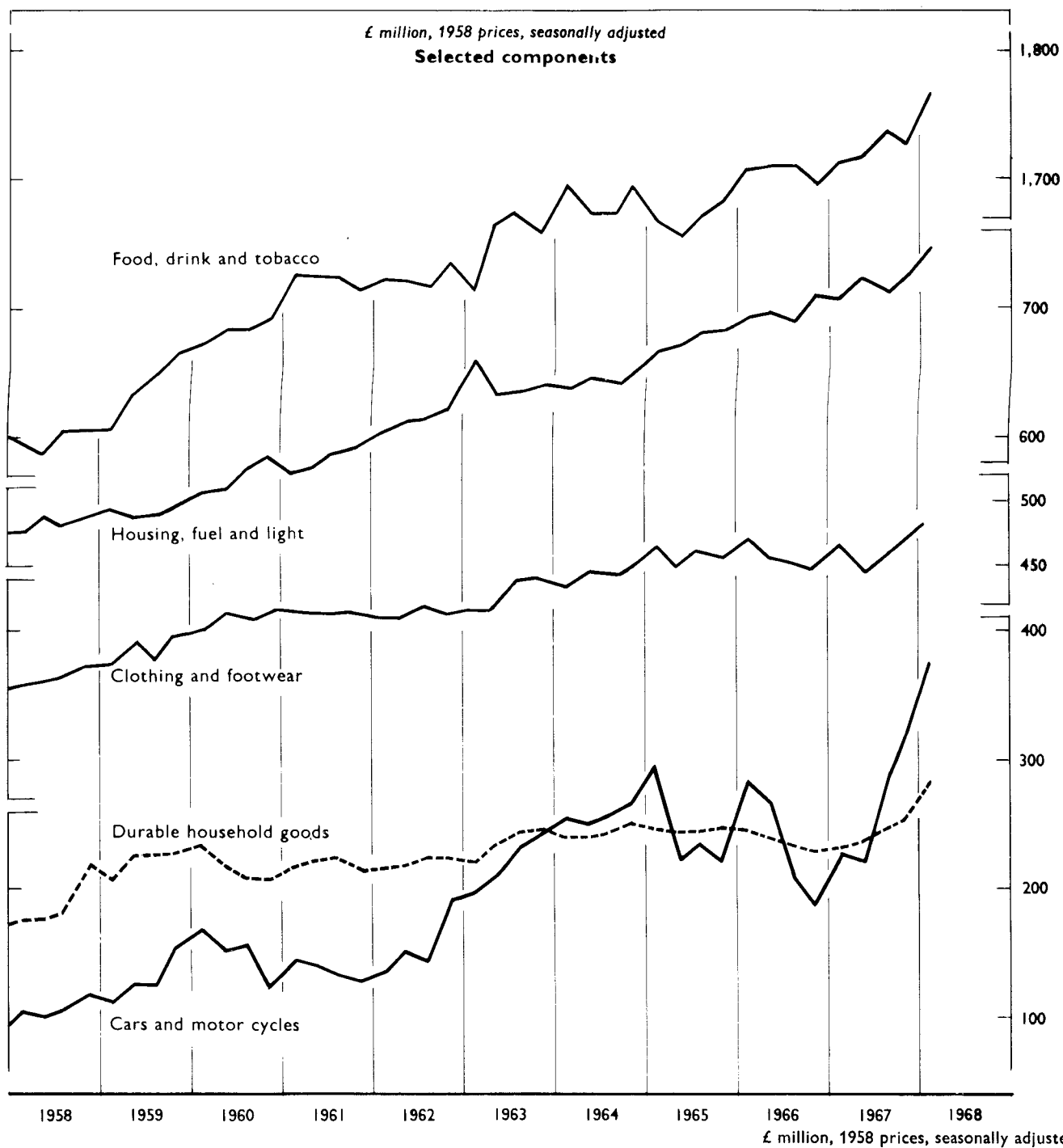

£ million, current prices, seasonally adjusted

Personal disposable income

Total consumers' expenditure

Consumers' expenditure on durable goods

Changes in hire purchase debt

1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968
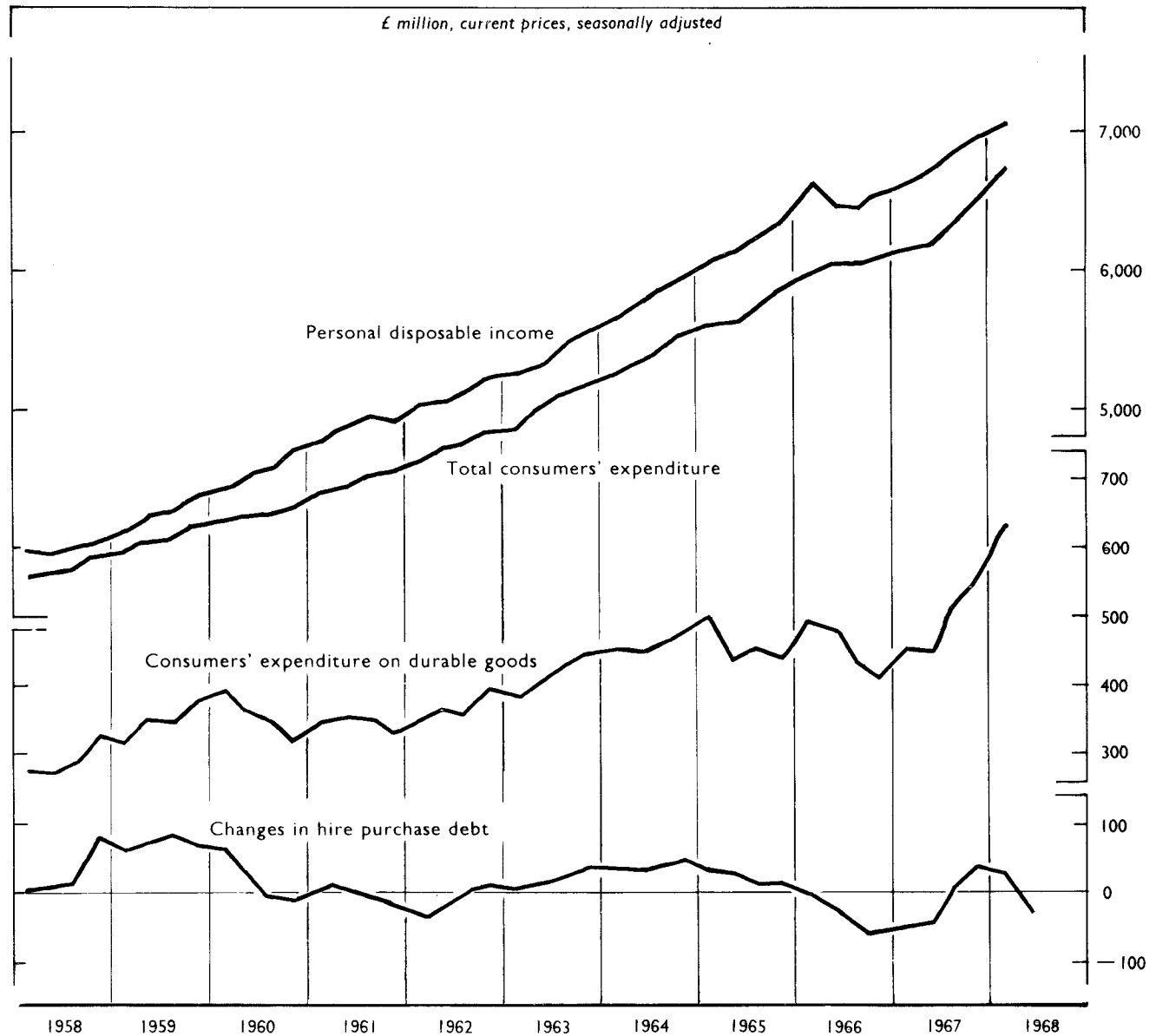
£ million, current prices, seasonally adjusted

| | Personal disposable income | Consumers' expenditure | | Changes in hire purchase debt([1]) |
		Total	Durable goods([2])	
1967 2nd quarter	6,719	6,193	444	—44
3rd quarter	6,868	6,347	510	+12
4th quarter	6,940	6,467	549	+39
1968 1st quarter	7,080	6,726	634	+31
2nd quarter				—28

([1]) Includes some borrowing on business account. ([2]) Cars, motor cycles and durable household goods.

Consumers' expenditure

£ million, 1958 prices, seasonally adjusted
Selected components

£ million, 1958 prices, seasonally adjusted

	Food, drink and tobacco(¹)	Housing, fuel and light	Clothing, including footwear	Durable household goods	Cars and motor cycles
1967 1st quarter	1,714	708	465	233	229
2nd quarter	1,718	725	442	234	221
3rd quarter	1,739	712	455	243	289
4th quarter	1,728	725	463	252	320
1968 1st quarter	1,768	747	482	282	376

(¹) The food component of this group consists of household expenditure only.

Retail sales, new registrations of cars (Great Britain)

Retail sales cover about half of consumers' expenditure; purchases of new cars are a relatively small but volatile element in expenditure.

Retail sales
1966 = 100
seasonally adjusted
— Trend
At current prices
At constant (1966) prices

New registrations of cars
Thousands, seasonally adjusted
— Trend

Retail sales
By kind of business
1966 = 100, current prices, seasonally adjusted
Food shops
Clothing and footwear shops
Durable goods shops
Other non-food shops
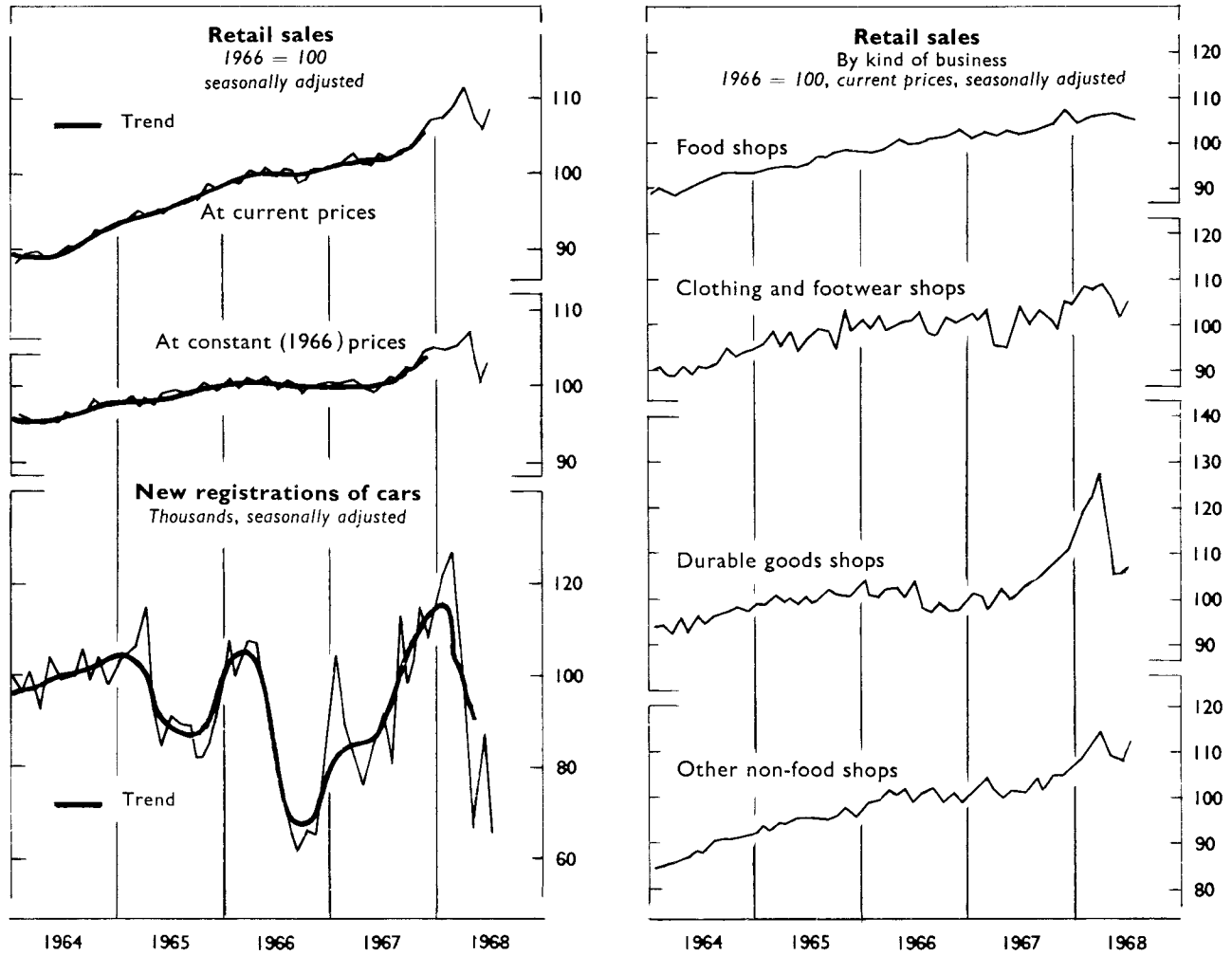
Seasonally adjusted

	Index numbers of retail sales Weekly average 1966 = 100						New registrations of cars
	Total		Food shops	Clothing and footwear shops	Durable goods shops	Other non-food shops	
	At constant prices	At current prices					
Estimated sales in 1966 (£ million)	11,372		4,952	1,727	1,176	3,517	Thousands
1967 June	101*	102*	101*	104*	100*	102*	91·9
July	101	102	102	101	103	101	80·5
August	102	103	103	104	104	105	113·6
September	102*	103*	103*	102*	106*	102*	98·4
October	102	104	104	99	109	105	102·8
November	104	106	105	106	110	105	115·3
December	105*	107*	107*	106*	111*	107*	108·0
1968 January	104	108	104	108	119	108	122·9
February	105	109	105	107	122	111	127·1
March	107*	111*	106*	109*	128*	113*	106·1
April	102	107	107	106	105	109	67·7
May	100	106	106	101	105	108	83·6
June	103*	108*	106*	105*	106*	111*	65·9

*Average of five weeks.

7

Fixed investment

The investment cycle occurs mainly in manufacturing industry.

£ million, 1958 prices, seasonally adjusted

Analysis by sectors

Public

Private

Analysis by selected industries

Manufacturing

Gas, electricity and water

Transport and communication

1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968
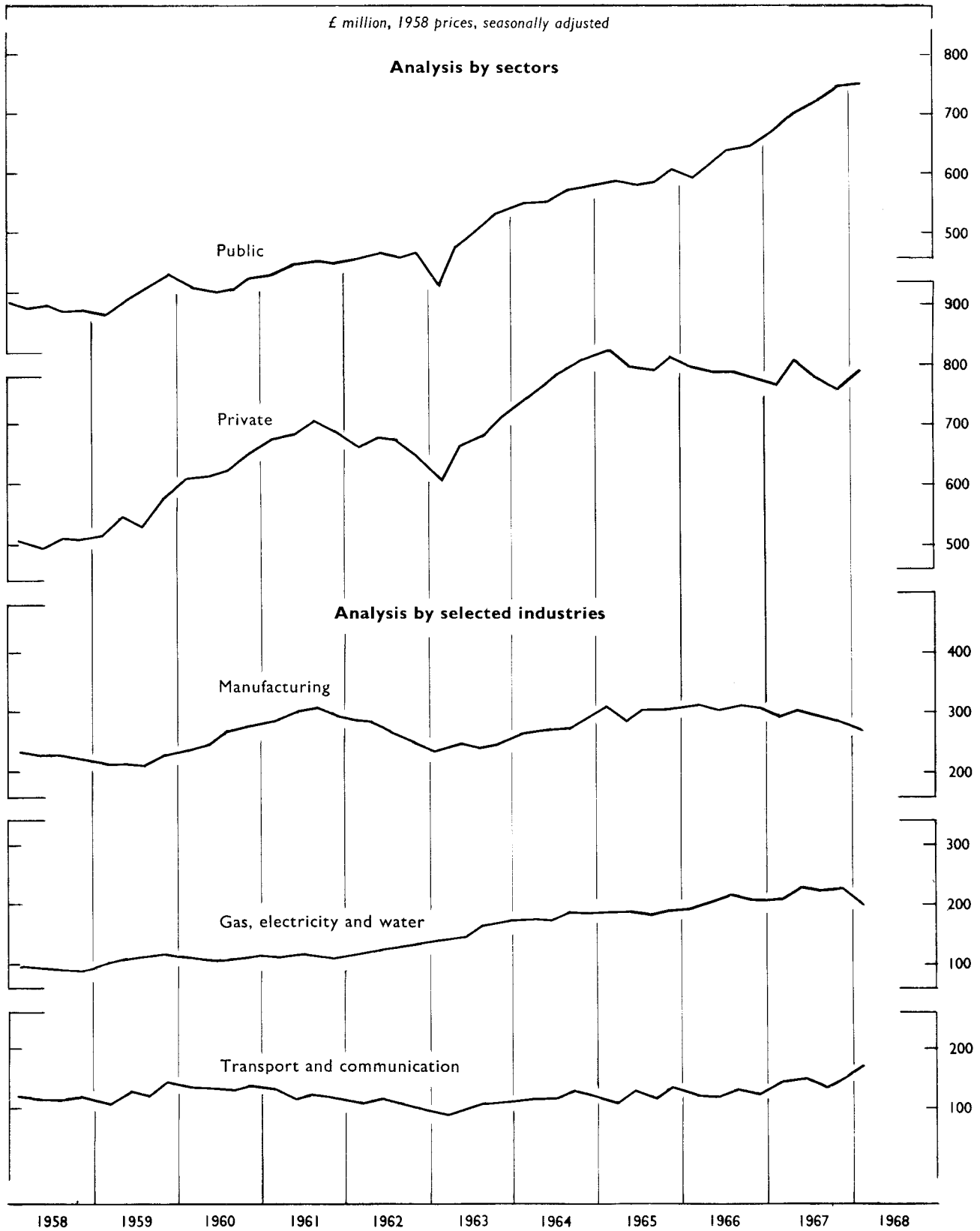
Fixed investment *(continued)*

£ million, 1958 prices, seasonally adjusted

Analysis by assets

Plant and machinery

Other new building and works

Dwellings

Vehicles, ships and aircraft

1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968

£ million, 1958 prices, seasonally adjusted

	Sectors		Selected industries			Assets			
	Public	Private	Manu-facturing	Gas, electricity and water	Transport and com-munication	Vehicles, ships and aircraft	Plant and machinery	Dwellings	Other new building and works
1967 1st quarter ..	673	767	293	214	140	163	548	278	451
2nd quarter ..	708	813	307	227	147	177	575	288	481
3rd quarter ..	725	774	289	220	135	162	562	300	475
4th quarter ..	746	760	287	225	145	168	554	305	479
1968 1st quarter ..	748	792	277	200	173	196	549	306	489

9

Fixed investment

Present and previous cycles of fixed investment in manufacturing industry

£ million, 1958 prices, seasonally adjusted

Present cycle

1966   1967   1968

1st Qtr
1966
— 325
— 300
— 275

3rd Qtr
1961
1961 — 1966 cycle
1st Qtr
1966
— 300
— 250

3rd Qtr
1961
1st Qtr
1957
1957 — 1961 cycle
— 300
— 250
— 200

1957   1958   1959   1960   1961

1961   1962   1963   1964   1965   1966
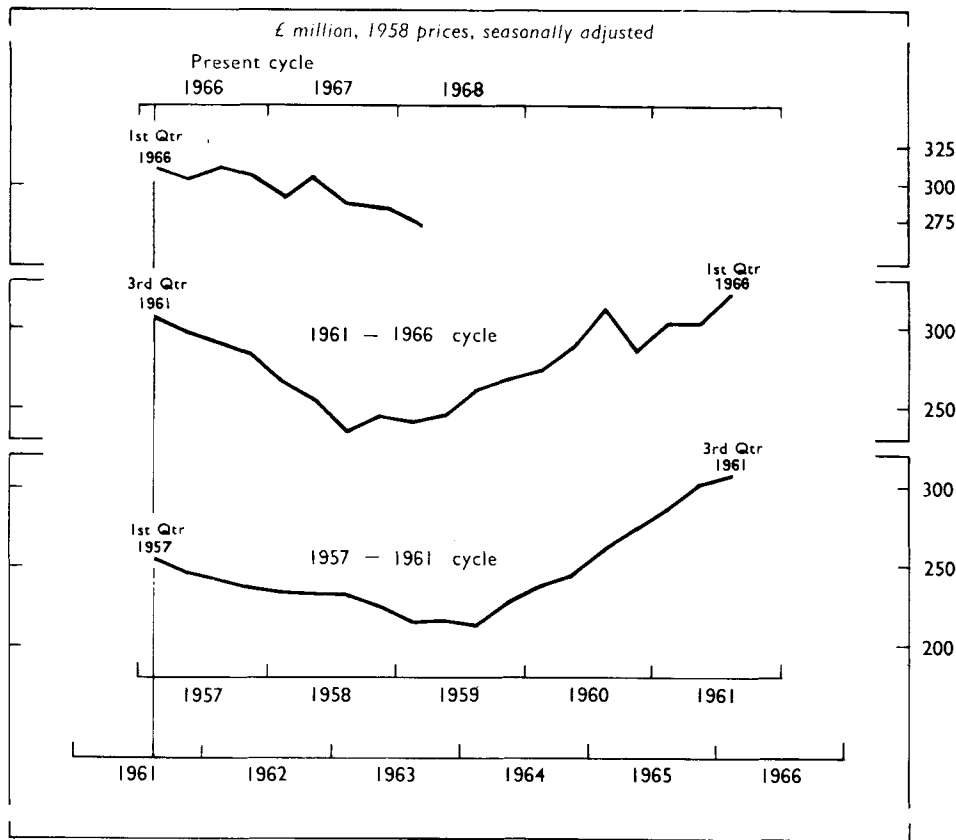
Board of Trade inquiry into investment intentions in manufacturing industry

For each year there have usually been three successive forecasts: the first in the preceding summer, the second at the end of the previous year and the third in the summer of the year concerned. Changes for the years before 1966 are in terms of current prices; those for later years are expressed in volume terms, after making an approximate allowance for price changes.

Percentage change over previous year

Successive forecasts

Actual fixed investment

— 30
— 20
— 10
— 0
— — 10

1958   1959   1960   1961   1962   1963   1964   1965   1966   1967   1968

10
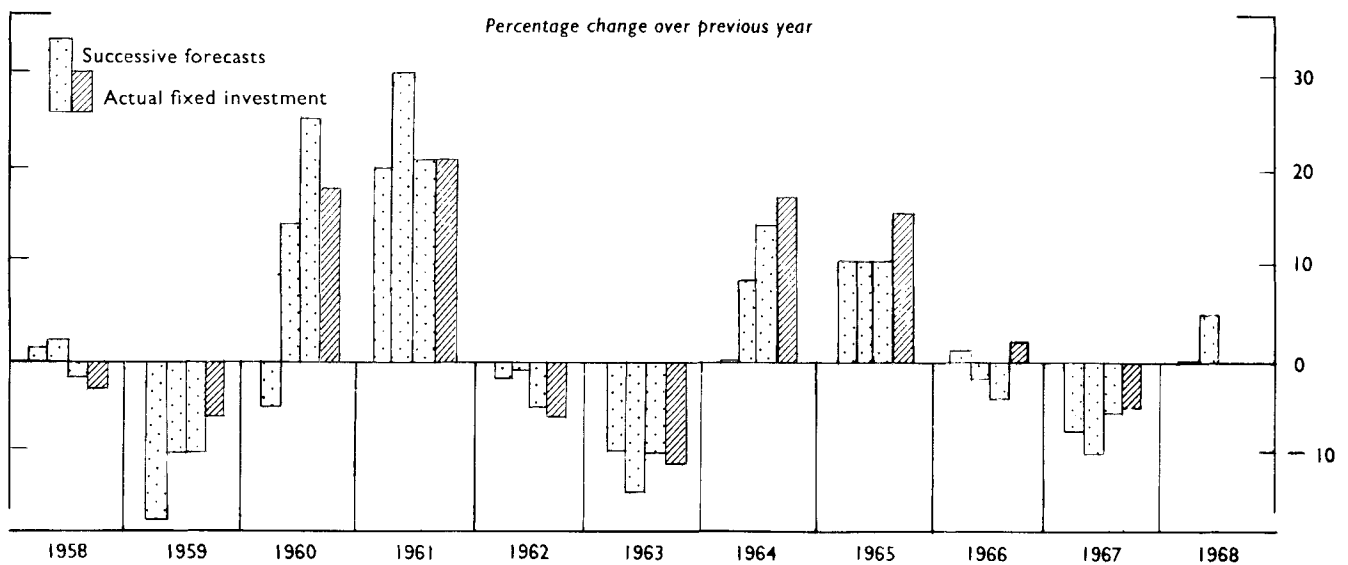
Other forward-looking indicators of fixed investment by manufacturing industry

Turning points in the C.B.I. Intentions Inquiry and in the value of orders received by contractors for private industrial work anticipate turning points in fixed investment.

Investment in plant and machinery

C.B.I. Intentions Inquiry
Per cent.

Fixed investment
£ million, 1958 prices, seasonally adjusted

20
0
— 20
200
150

New building and works

C.B.I. Intentions Inquiry
Per cent.

£ million, 1958 prices, seasonally adjusted
New orders received by contractors
for private industrial work (G.B.)

Fixed investment

20
0
— 20
— 40
100
80
60
40

1959 1960 1961 1962 1963 1964 1965 1966 1967 1968

	Plant and machinery in manufacturing industry		New building and works in manufacturing industry		New orders received by contractors for private industrial work G.B.
	C.B.I. Intentions Inquiry	Fixed investment	C.B.I. Intentions Inquiry	Fixed investment	
	Per cent (¹)	£ million, 1958 prices, seasonally adjusted	Per cent (¹)	£ million, 1958 prices, seasonally adjusted	
1967 2nd quarter	— 8	216·5	—30	65·4	78
3rd quarter	..	204·7	..	57·6	94
4th quarter	—	202·7	—27	57·1	85
1968 1st quarter	+ 2	194·2	—17	54·5	86
2nd quarter	+14		—10		

(¹) Percentage of firms expecting to authorise more in next 12 months *less* percentage expecting to authorise less.
  Figures relate to the June and October 1967 and the February and June 1968 Inquiries.

11

Forward-looking indicators of fixed investment in dwellings

£ million, 1958 prices, seasonally adjusted
All houses

Fixed investment

Orders received by contractors
for new houses (G.B.)

Thousands
Houses for public authorities

Started

Completed

Houses for private developers
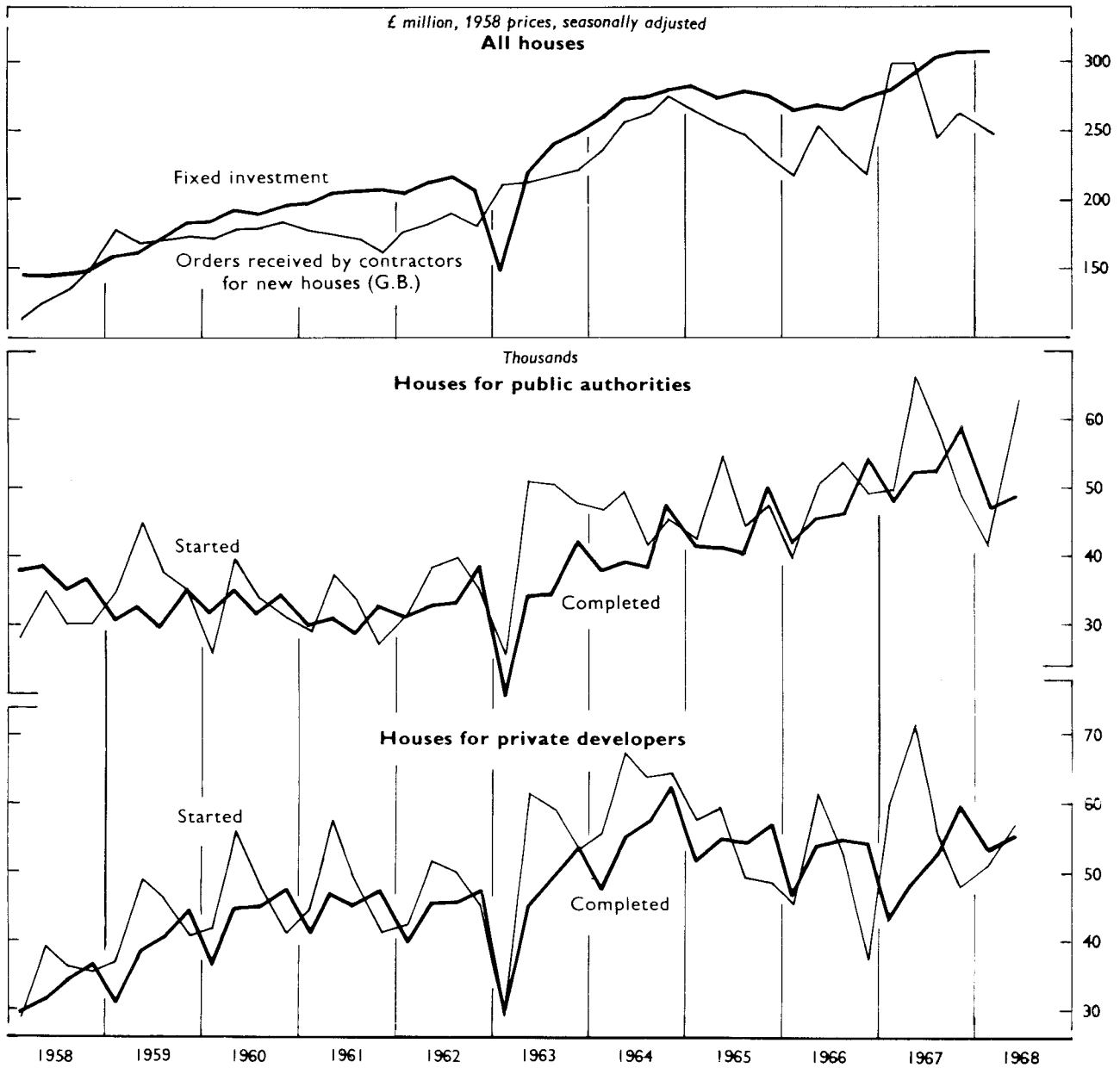
Started

Completed

			Orders received by contractors for new houses G.B.	Fixed invest- ment in dwellings	Houses for public authorities		Houses for private developers	
					Started	Completed	Started	Completed
			£ million, 1958 prices, seasonally adjusted		Thousands			
1967 2nd quarter	..	.. ..	299	288	66·2	51·7	73·8	48·7
3rd quarter	..	.. ..	243	300	58·0	52·1	55·4	52·8
4th quarter	..	.. ..	261	305	49·0	59·3	48·1	59·5
1968 1st quarter	..	.. ..	248	306	41·6	47·1	51·5	53·8
2nd quarter	..	.. ..			62·5	48·5	56·8	55·7

12

Stock changes
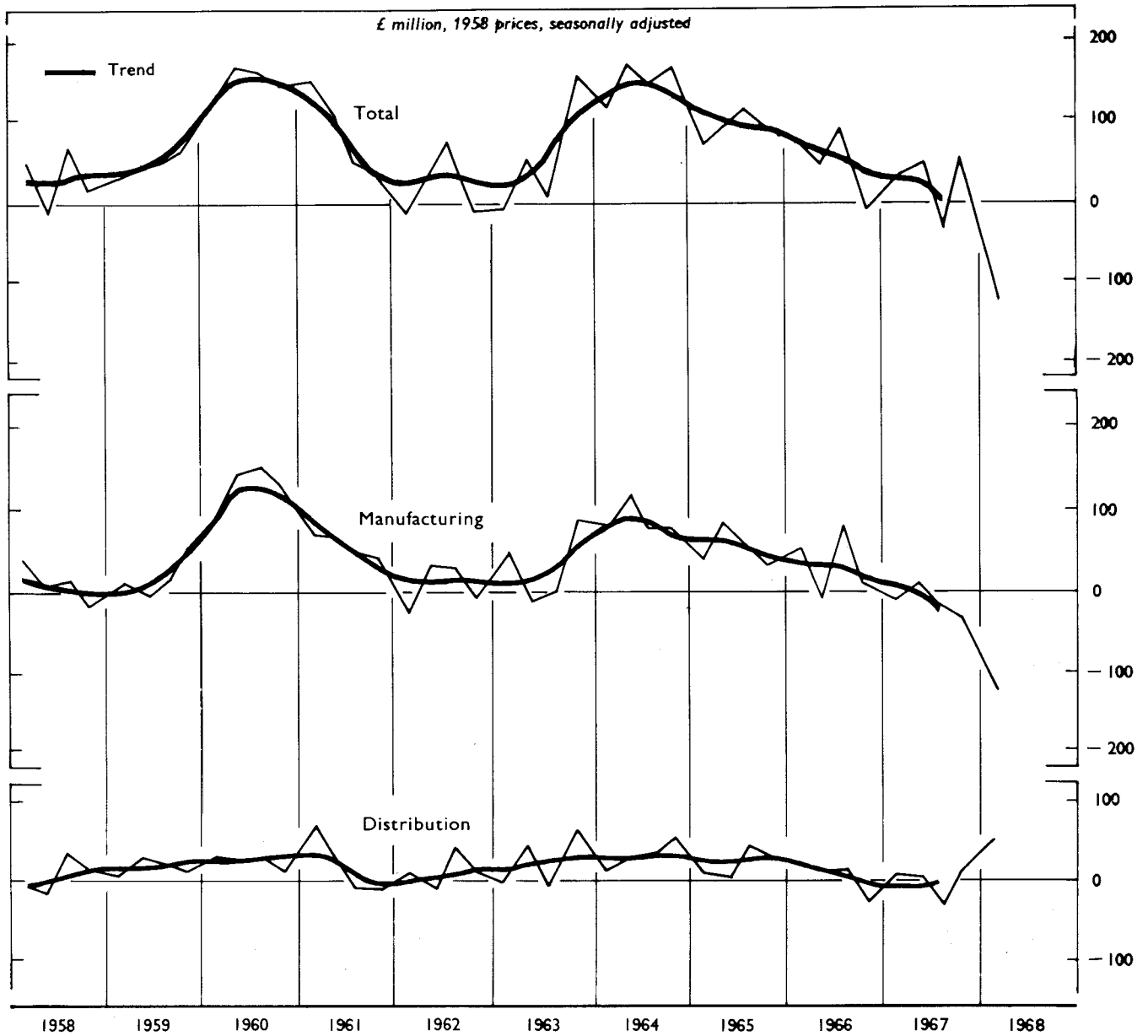
£ million, 1958 prices, seasonally adjusted

	Total	Manufacturing	Distribution
1967 1st quarter	37	— 8	4
2nd quarter	46	11	2
3rd quarter	—32	—18	—36
4th quarter	50	—32	7
1968 1st quarter	—126	—128	47

13

Relationship of stocks and output (stock/output ratios)

The level of stocks rises broadly with the level of output but the stock cycle lags behind the output cycle; the ratio of stocks to output therefore fluctuates: stocks are sometimes high in relation to output, sometimes low.

1958 prices, seasonally adjusted
Level of stocks: end-December 1957 = 100
Output: 4th quarter 1957 = 100

Total stocks and output

Gross domestic product

Level of total stocks

Ratio of total stock level to gross domestic product

Manufacturing stocks and output

Index of manufacturing production

Level of manufacturing stocks

Ratio of manufacturing stock level to output of manufacturing industry
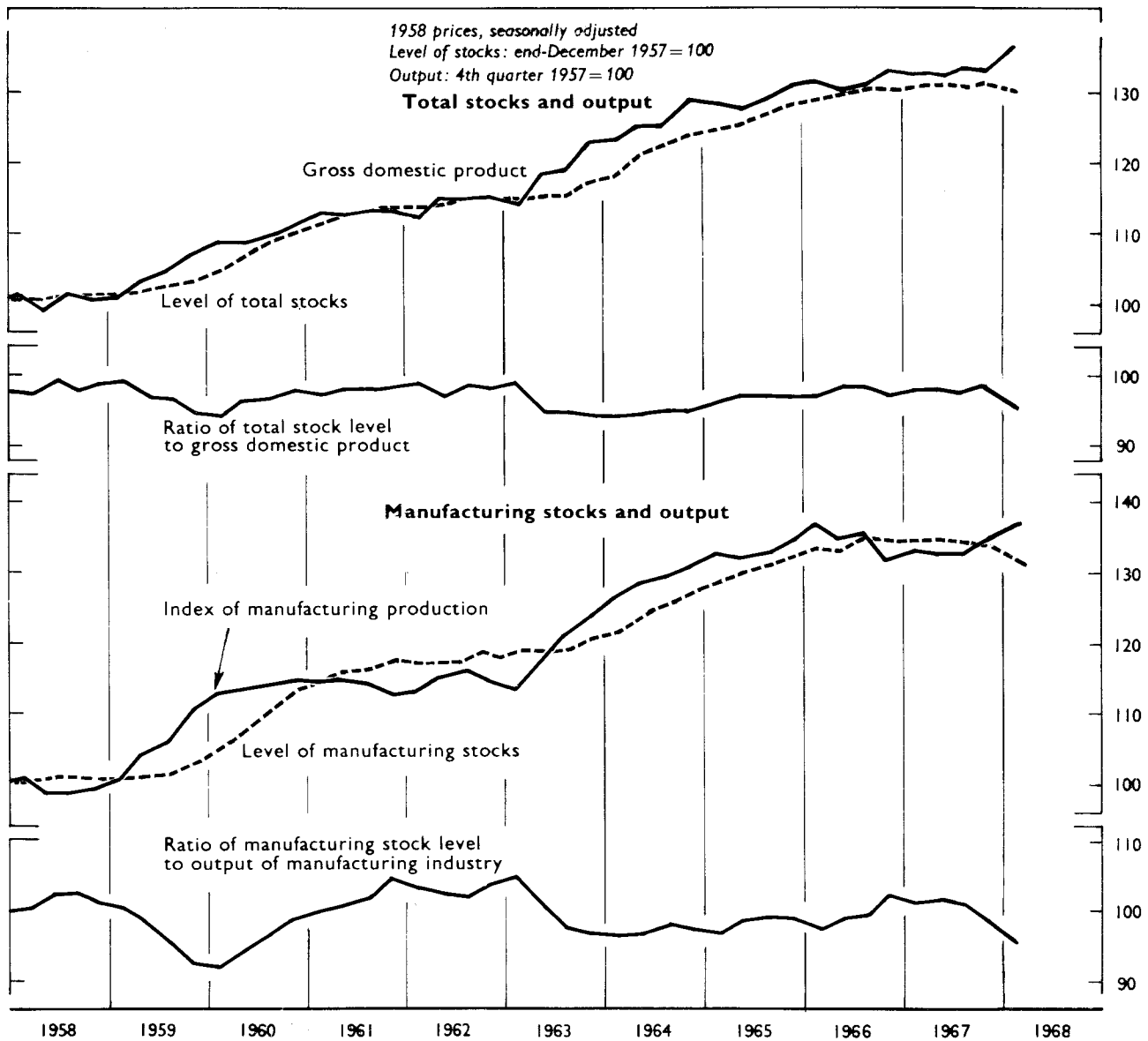
1958 prices, seasonally adjusted { Level of stocks end Dec. 1957 = 100 / Output 4th quarter 1957 = 100 }

	Level of total stocks	Gross domestic product	Ratio of total stock level to gross domestic product	Level of manufacturing stocks	Index of manufacturing production	Ratio of manufacturing stock level to output of manufacturing industry
1967 1st quarter	131	133	98	135	133	101
2nd quarter	131	133	99	135	132	102
3rd quarter	131	133	98	134	132	101
4th quarter	131	133	99	134	136	99
1968 1st quarter	130	136	95	131	137	95

Changes in stocks, manufacturing production and imports of industrial materials

Imports of industrial materials rise or fall with rising or falling manufacturing production and stockbuilding.
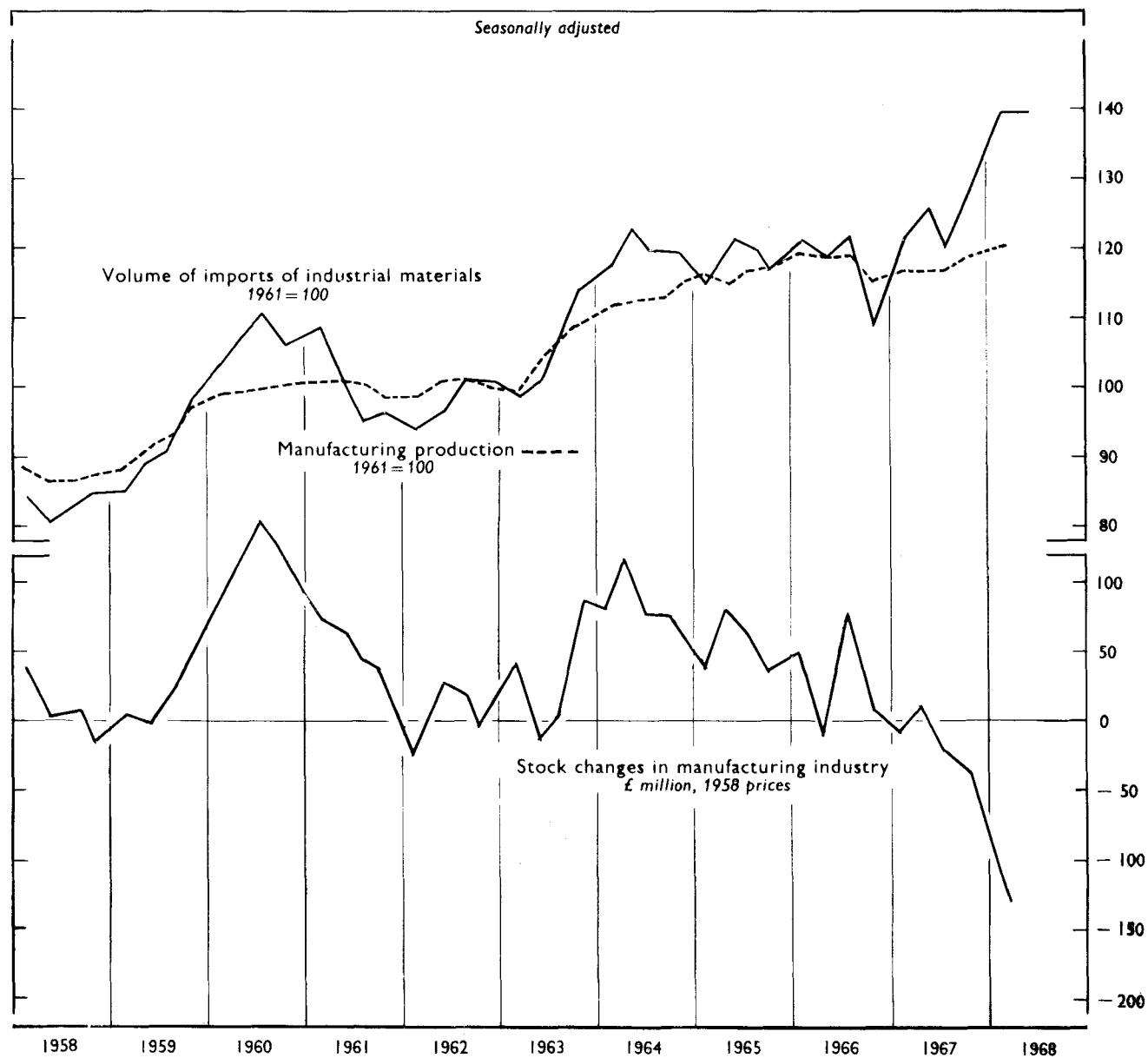
Seasonally adjusted

	Volume of imports of industrial materials(¹)	Manufacturing industry	
		Production	Stock changes
	1961 = 100		£ million, 1958 prices
1967 2nd quarter	126	116	11
3rd quarter	120	116	—18
4th quarter	129	119	—32
1968 1st quarter	138	121	—128
2nd quarter	138		

(¹) Basic materials and semi-finished manufactures.

15

Index of industrial production

The index of industrial production covers about half of the gross domestic product.

1958=100, seasonally adjusted

All industries

Engineering and allied industries

Food, drink and tobacco

1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968

16
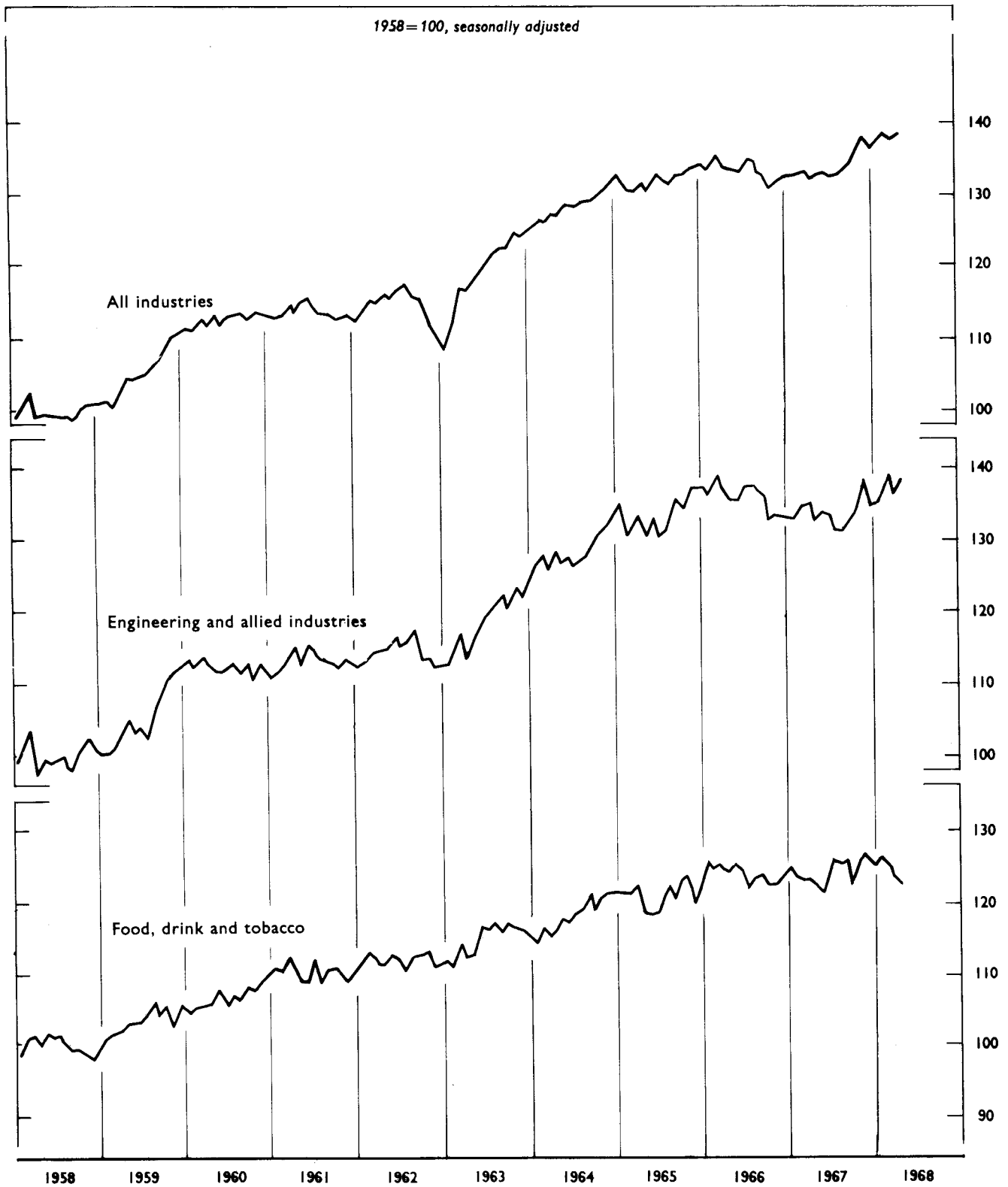
Index of industrial production *(continued)*

1958=100, seasonally adjusted

Chemicals and allied industries

Textiles, leather and clothing industries
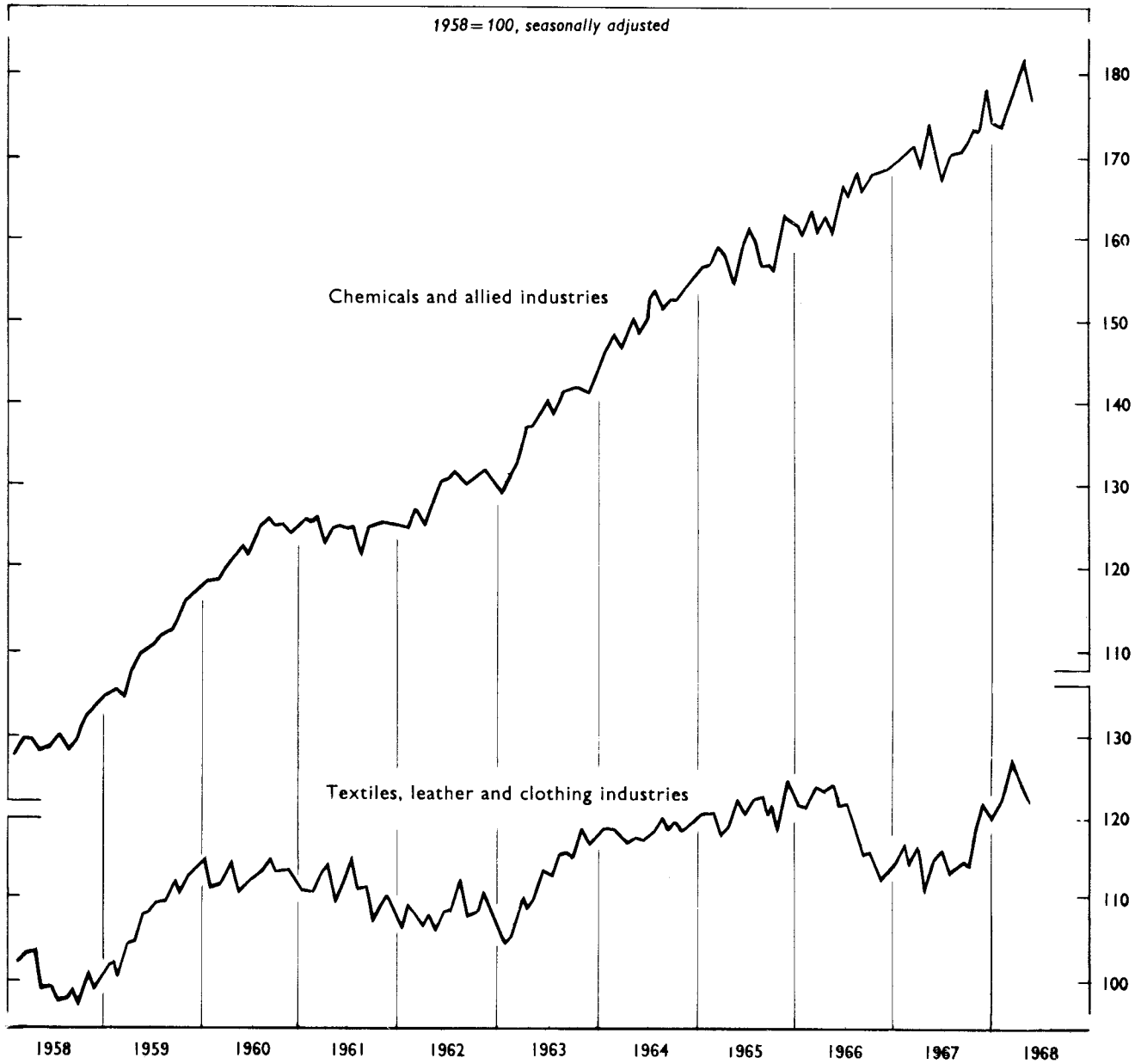
1958 = 100, seasonally adjusted

				All industries	Manufacturing industries			
					Food, drink and tobacco	Engineering and allied industries	Chemicals and allied industries	Textiles, leather and clothing industries
Weights				*1,000*	*86*	*310*	*68*	*92*
1967 June	..	..	..	133	122	134	170	115
July	..	..	..	133	126	133	167	116
August	..	..	..	133	125	131	170	114
September	..	..	..	133	126	132	171	115
October	..	..	..	134	122	133	174	115
November	..	..	..	135	126	134	173	119
December	..	..	..	138	127	138	179	122
1968 January	..	..	..	136	126	134	175	120
February	..	..	..	137	126	136	174	122
March	..	..	..	138	125	139	177	128
April	..	..	..	138	122	136	182	124
May	..	..	..	138	123	138	179	123
June	..	..	..	139	125	141	182	127

Cycles of industrial production

This chart shows cycles in the index of production (all industries) centred approximately at their troughs.
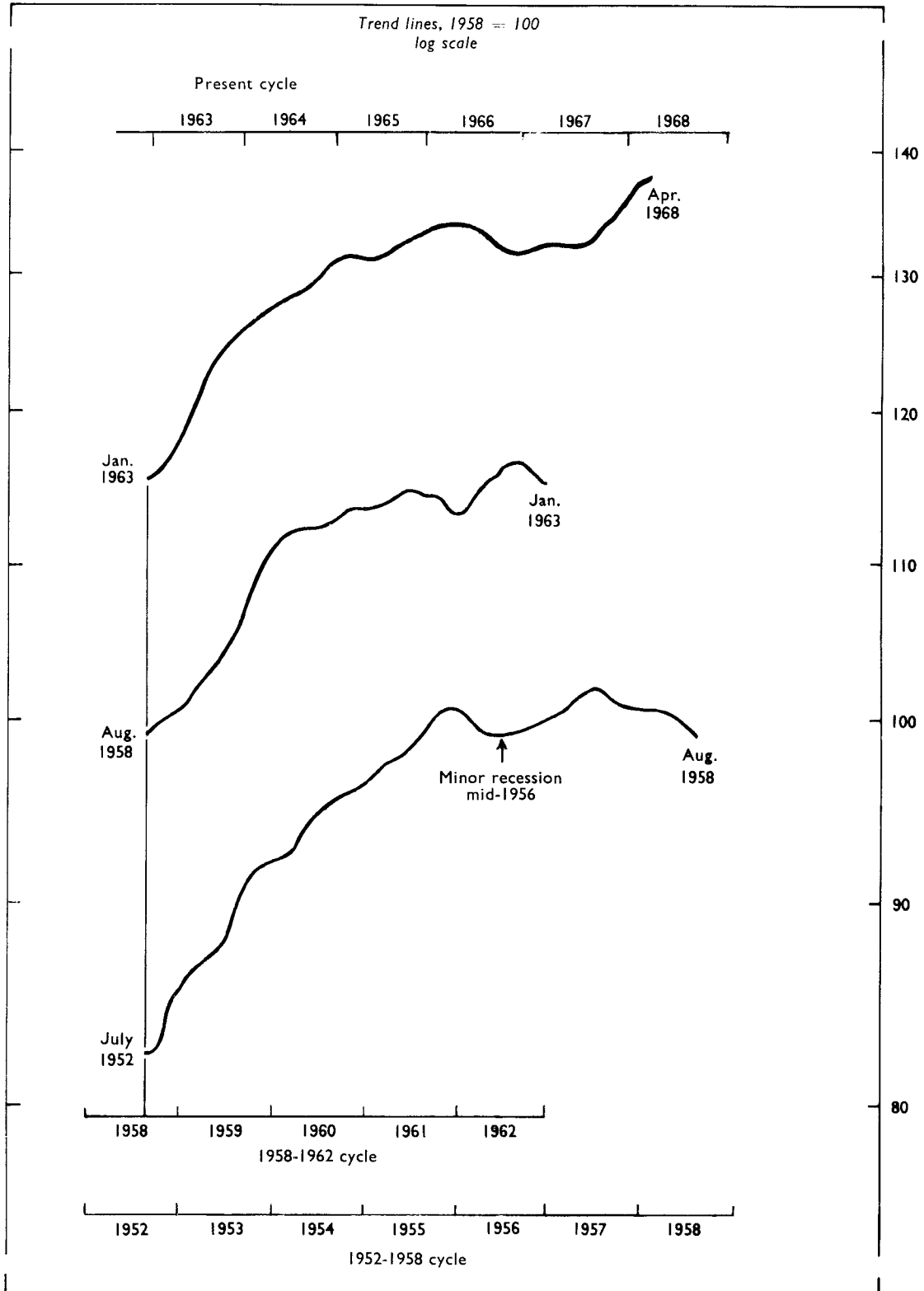
Trend lines, 1958 = 100
log scale

Present cycle

1963 1964 1965 1966 1967 1968

140

Apr.
1968

130

Jan.
1963

120

Jan.
1963

110

Aug.
1958

100

Aug.
1958

Minor recession
mid-1956

90

July
1952

80

1958 1959 1960 1961 1962
1958-1962 cycle

1952 1953 1954 1955 1956 1957 1958
1952-1958 cycle

18

Steel

Thousand tons, seasonally adjusted

Crude steel production

Finished steel consumption

Changes in consumers' and merchants' stocks

1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968

Thousand tons, seasonally adjusted

				Crude steel production	Finished steel consumption	Changes in consumers' and merchants' stocks
1967 2nd quarter	..	..	..	6,029	3,917	—135
3rd quarter	..	..	..	5,998	3,787	— 8
4th quarter	..	..	..	6,067	3,981	+ 44
1968 1st quarter	..	..	..	6,073	4,097	— 97
2nd quarter	..	..	..	6,521	4,000	+ 48

19

Motor vehicle production
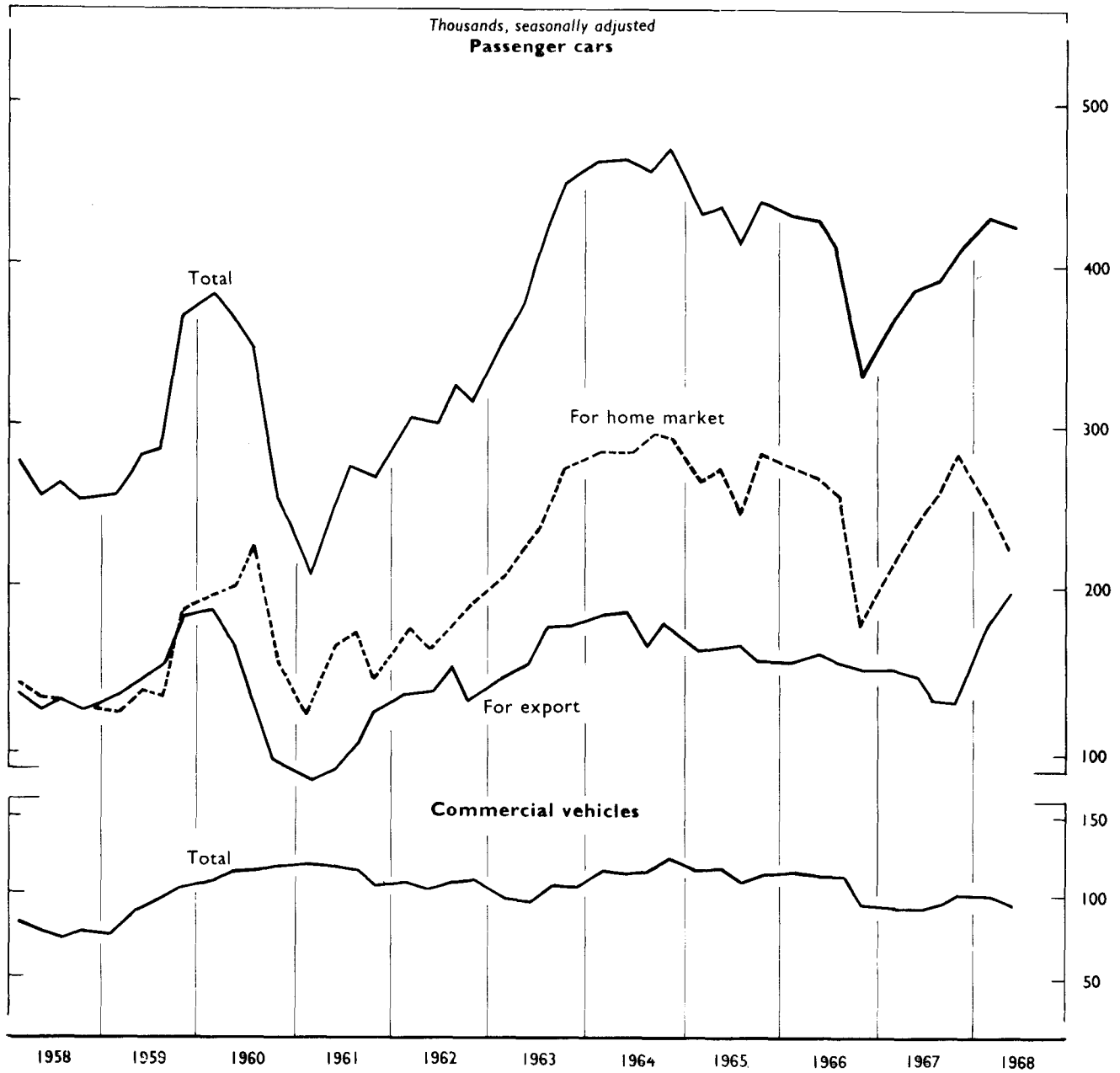
Thousands, seasonally adjusted

Passenger cars

Total

For home market

For export

Commercial vehicles

Total

1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968

		Passenger cars			Commercial vehicles
		Total	For home market	For export	Total
1967 2nd quarter		384	236	148	94
3rd quarter		390	258	133	97
4th quarter		413	281	131	100
1968 1st quarter		430	250	180	100
2nd quarter		424	225	199	96

20

Construction industry

New construction

Orders received

Work outstanding

Output

Building materials

Production of bricks, cement, etc.

1959 1960 1961 1962 1963 1964 1965 1966 1967 1968
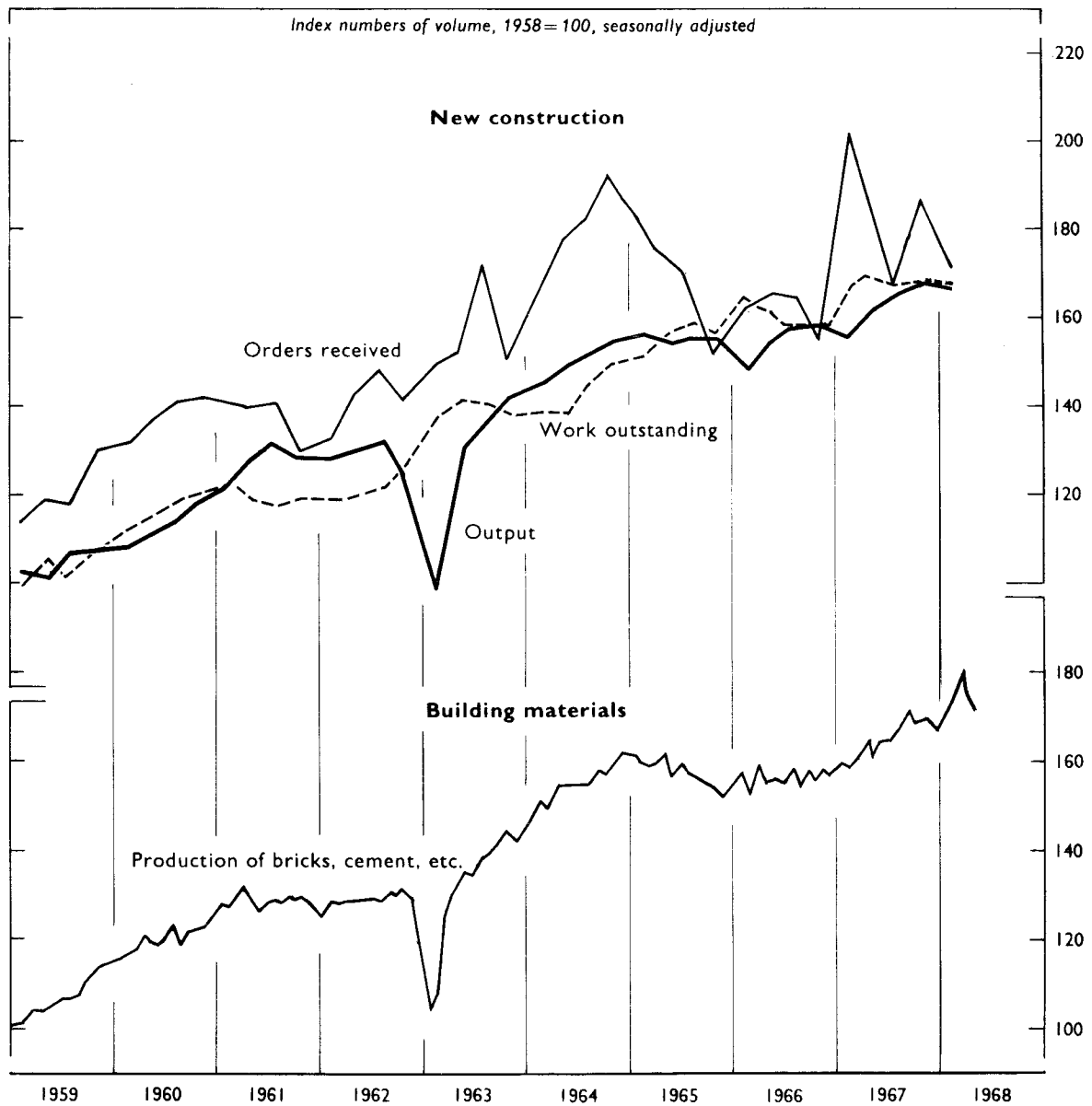
Index numbers of volume, 1958 = 100, seasonally adjusted

		New construction			Production of bricks, cement, etc.(¹)
		Output	Orders received	Work outstanding	
1967 July	.. ..	} 166	167	167	{ 165
August	.. ..				167
September	.. .. ..				171
October	.. ..	} 167	186	168	{ 169
November	.. .. ..				169
December	.. .. ..				170
1968 January	.. .. ..	} 166	171	167	{ 167
February	.. ..				175
March	.. ..				181
April	.. ..	}			{ 174
May	.. ..				171
June	.. ..				

(¹) Index of industrial production series.

Inland fuel and power consumption

Annual rates, seasonally adjusted and temperature corrected

Inland fuel

Total inland fuel consumption
Million tons coal equivalent

Before temperature correction ... ...

Net inland coal consumption
Million tons

Total inland fuel consumption
Million tons coal equivalent

Electricity and gas

Electricity available
Thousand million kilowatt hours

Gas available
Thousand million therms

1958   1959   1960   1961   1962   1963   1964   1965   1966   1967   1968

Annual rates, seasonally adjusted and temperature corrected

	Total inland fuel consumption ([1])	Net inland coal consumption ([2])	Total inland oil fuel consumption	Electricity available ([3]) G.B.	Gas available ([4]) G.B.
	Million tons coal equivalent	Million tons	Million tons coal equivalent	Th. million kilowatt hours	Thousand million therms
1967 2nd quarter ..	298·9	163·8	123·4	177·88	4·37
3rd quarter ..	293·7	162·0	116·5	177·18	4·38
4th quarter ..	299·1	162·6	119·6	181·55	4·50
1968 1st quarter ..	304·9	164·3	126·7	183·26	4·89
2nd quarter ..		163·0	119·6	185·51	4·80

([1]) Includes consumption of nuclear energy.   ([2]) Net of exports and stock changes of manufactured fuel.   ([3]) Until 1st quarter 1962 the figures are of electricity sent out. The inclusion of Northern Ireland would add about 2% to the total.   ([4]) The inclusion of Northern Ireland would add about 1% to the total.

22

Orders: Selected manufacturing industries
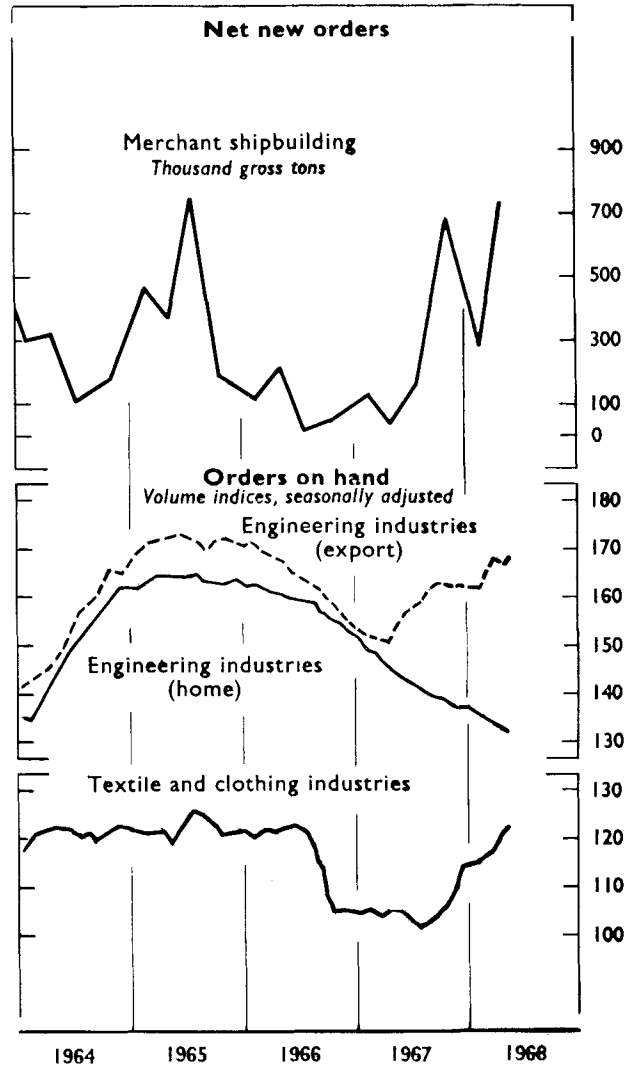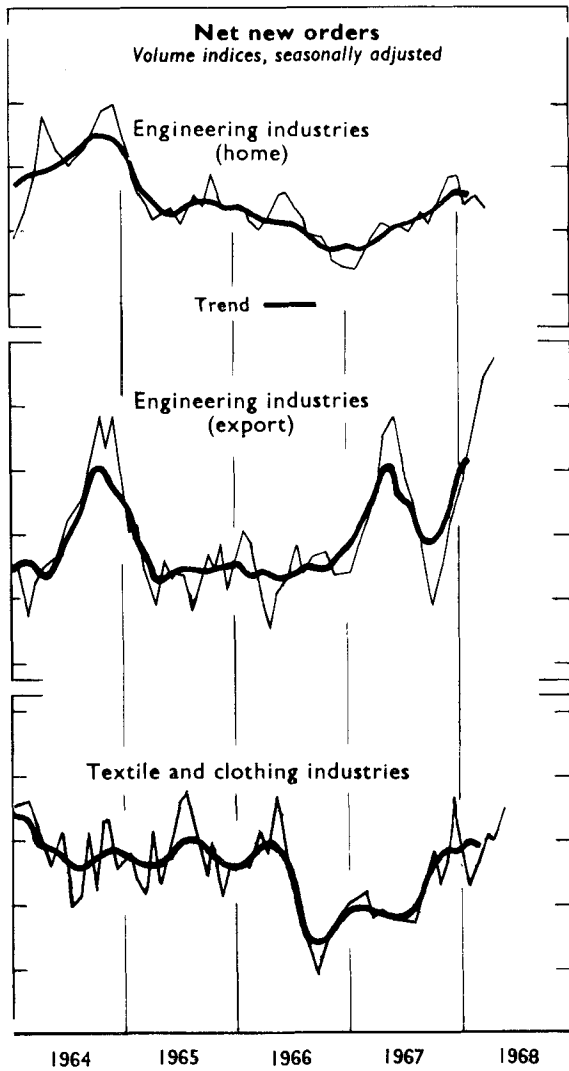
	Engineering industries([1])				Textiles and clothing industries		Merchant shipbuilding
	Home market		Export				
	Orders on hand end of period	Net new orders	Orders on hand end of period	Net new orders	Orders on hand end of period	Net new orders	Net new orders
	Dec. 1958=100	Av. 1958=100	Dec. 1958=100	Av. 1958=100	Apr. 1959=100	Av. 1959=100	Thousand gross tons
	Seasonally adjusted						
1967 July	143	140	159	158	102	88	} 170
August	141	143	161	156	103	96	
September	140	141	162	147	105	99	
October	139	145	162	140	106	94	} 689
November	138	146	162	146	109	99	
December	137	149	162	152	114	108	
1968 January	137	149	162	158	114	93	} 283
February	136	144	162	170	116	96	
March	134	145	168	174	117	101	
April	134	143	167	177	120	101	} 720
May	132		168		123	105	
June							

([1]) Engineering and electrical goods, locomotives and railway track equipment, railway carriages and wagons, heavy commercial vehicles and wheeled tractors.

23

Unemployment and unfilled vacancies, hours worked
Great Britain
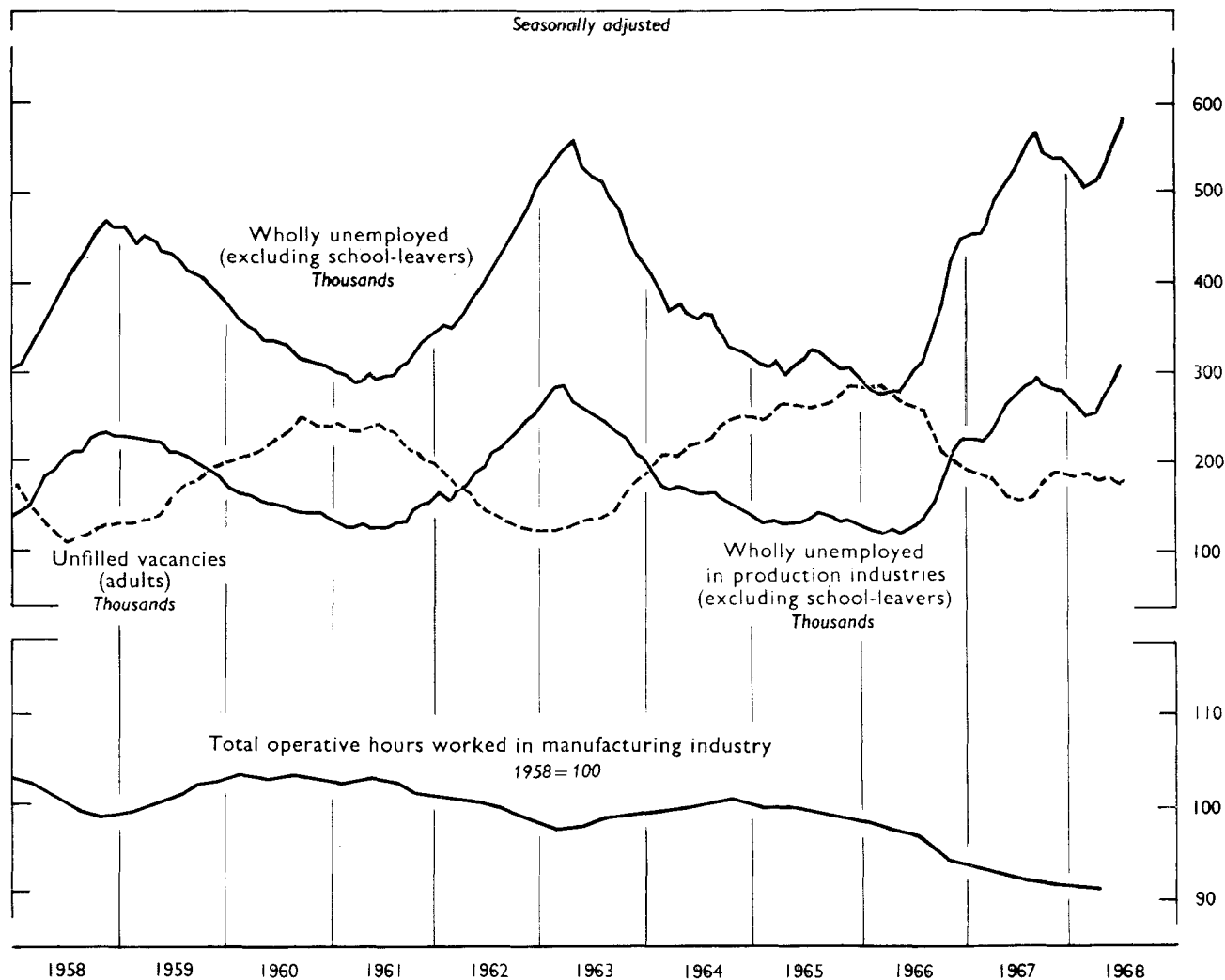
		Wholly unemployed (excluding school-leavers)				Unfilled vacancies		Total operative hours worked in manufacturing industry
		Total		Production industries				
		Actual	Seasonally adjusted	Actual	Seasonally adjusted	Actual	Seasonally adjusted	1958=100
		Thousands						Seasonally adjusted
1967	July	464	543	241	282	184	161	} 91·7
	August ..	493	559	255	290	174	161	
	September ..	503	563	259	295	177	166	
	October ..	522	541	263	285	176	178	} 91·5
	November ..	548	536	275	280	166	181	
	December ..	556	538	284	280	163	188	
1968	January ..	596	520	310	263	159	183	} 91·0
	February ..	593	503	307	252	165	185	
	March ..	570	509	294	255	177	184	
	April	558	535	290	276	186	180	
	May	532	545	279	286	194	181	
	June	504	569	267	299	203	178	
	July	497	580	262	306	205	180	

24

Present and previous cycles of unemployment
Great Britain

The unemployment cycle has usually lagged some months behind the production cycle (see page 18).

Wholly unemployed (excluding school-leavers)
Thousands, seasonally adjusted

Regional unemployment

Registered unemployed
Percentage rates

Scotland

U.K.

Wales

U.K.

Northern Ireland

U.K.

London and South East

U.K.

7·0

5·0

3·0

1·0

5·0

3·0

1·0

11·0

9·0

7·0

5·0

3·0

1·0

3·0

1·0

1958   1959   1960   1961   1962   1963   1964   1965   1966   1967   1968

Percentage rates
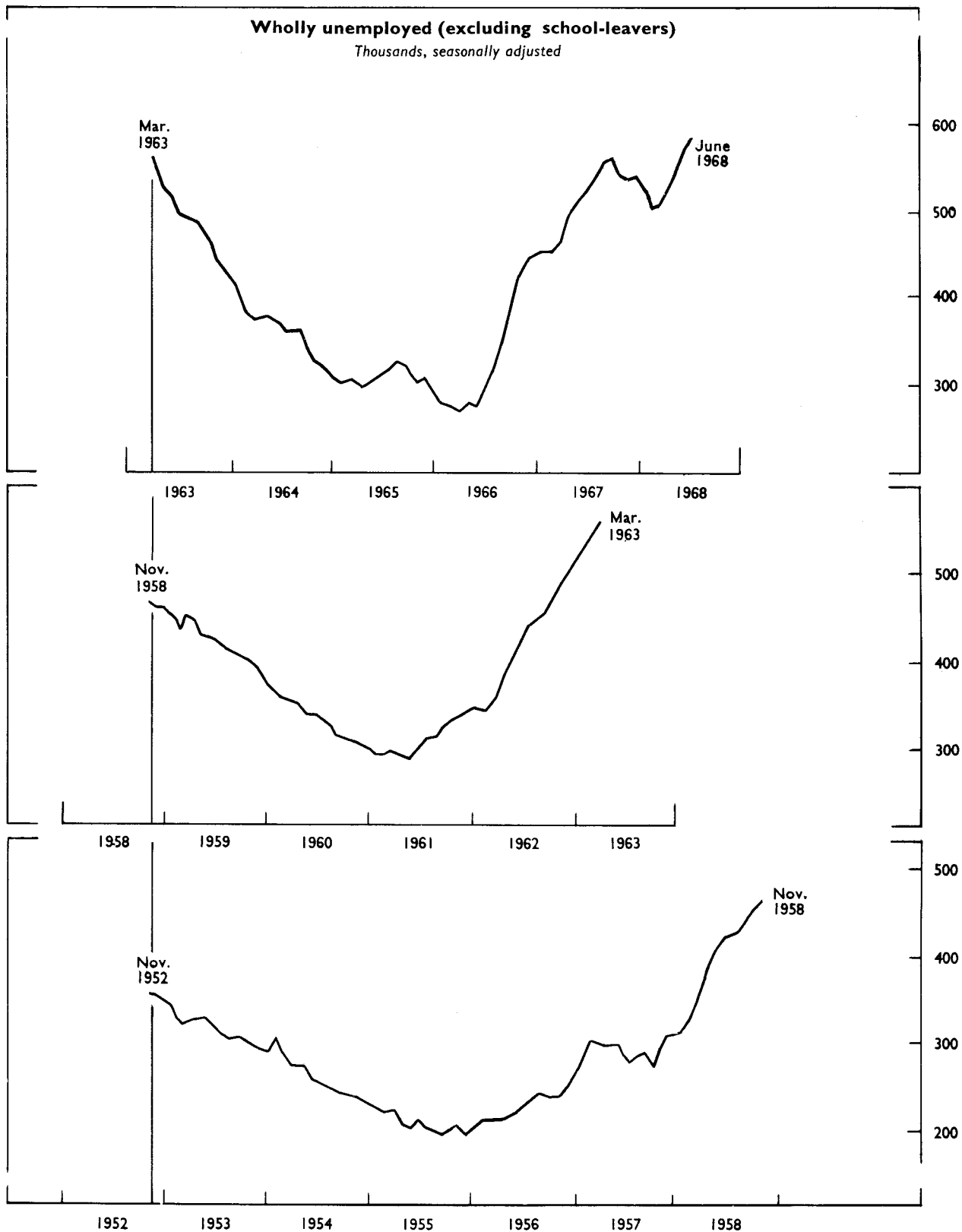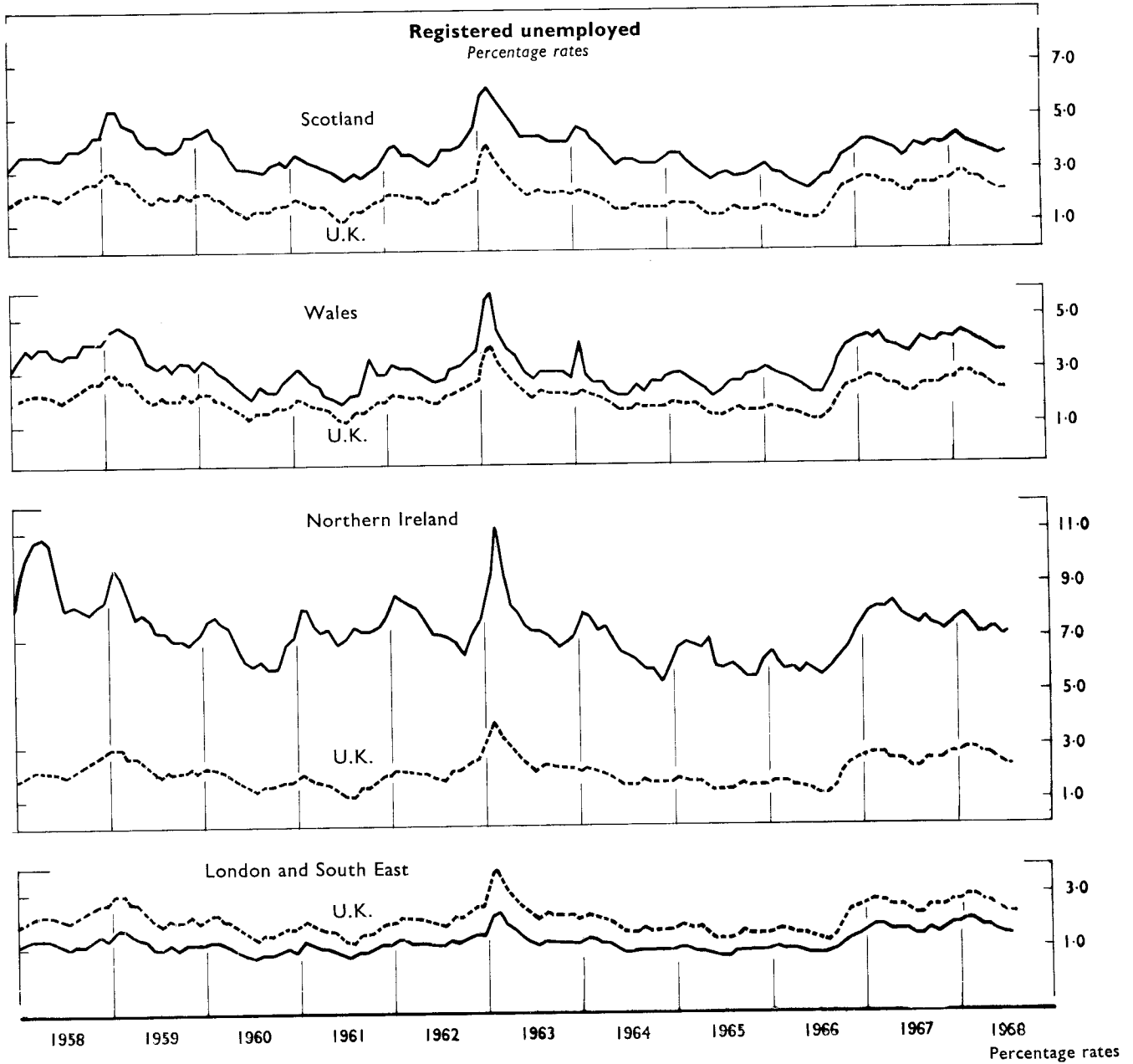
					United Kingdom	Scotland	Wales	Northern Ireland	London and South East
1967 July	..	..	..	..	2·2	3·7	3·7	7·5	1·4
August	..	..	..		2·5	3·9	4·2	7·6	1·6
September	..	..	..		2·5	3·8	4·0	7·5	1·5
October	..	..	..		2·5	3·9	4·0	7·4	1·6
November	..	..	..		2·6	4·0	4·2	7·2	1·7
December	..	..	..		2·6	4·0	4·2	7·4	1·7
1968 January	..	..	..		2·8	4·4	4·4	7·8	1·8
February	..	..	..		2·8	4·2	4·2	7·5	1·8
March	..	..	..		2·6	4·0	4·1	7·1	1·7
April	..	..	..		2·6	3·9	4·0	7·1	1·7
May	..	..	..		2·5	3·7	3·8	7·3	1·6
June	..	..	..		2·3	3·6	3·6	7·0	1·5
July	..	..	..		2·3	3·7	3·6	7·1	1·4

26

Regional unemployment *(continued)*

Registered unemployed
Percentage rates

Eastern and Southern · South Western · Midlands · Yorkshire and Humberside · North Western · Northern · U.K.

1958 · 1959 · 1960 · 1961 · 1962 · 1963 · 1964 · 1965 · 1966 · 1967 · 1968

Percentage rates
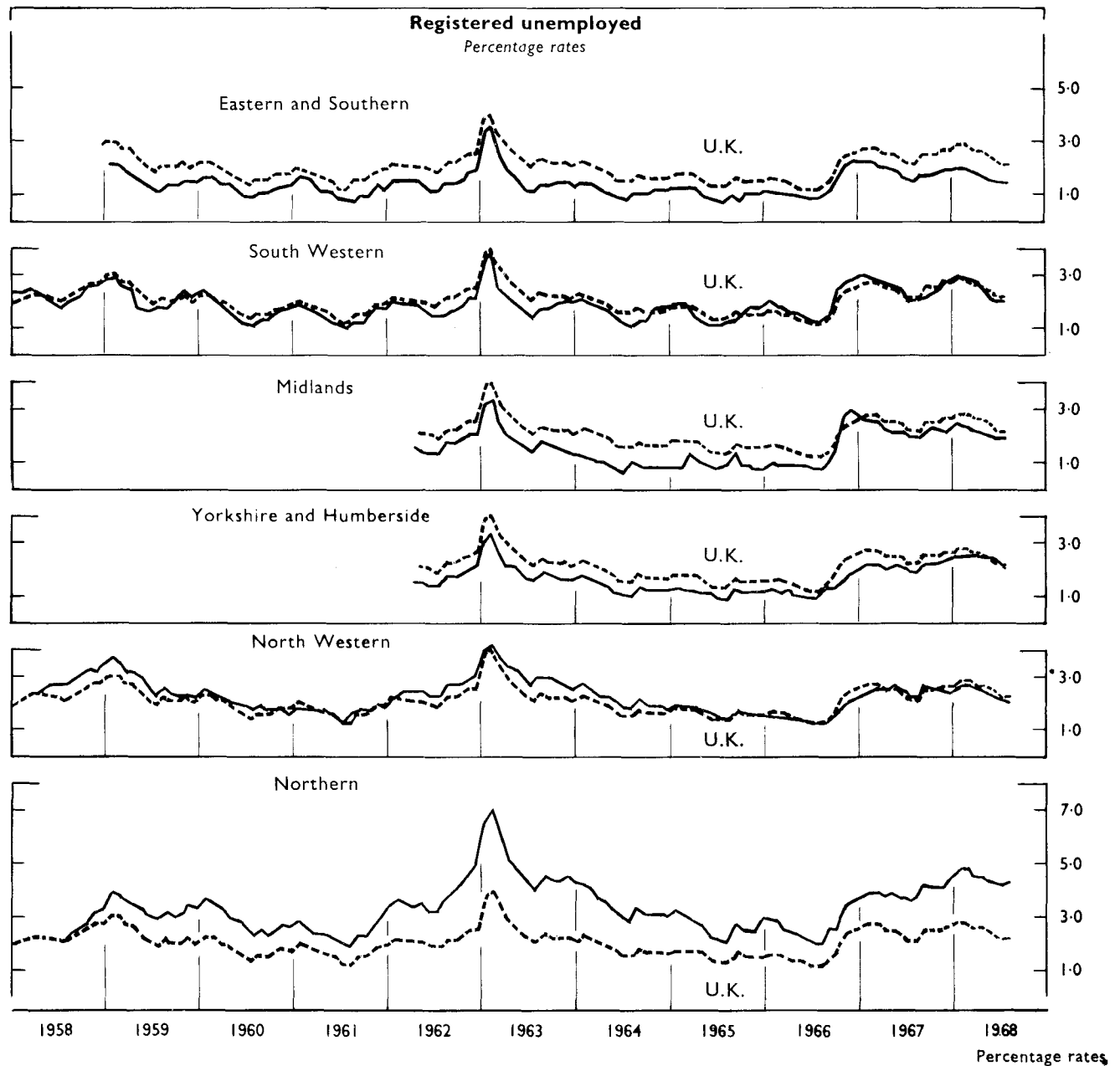
			United Kingdom	Eastern and Southern	South Western	Midlands	Yorkshire and Humberside	North Western	Northern
1967 July	..	.. .. ..	2·2	1·5	2·0	1·9	1·9	2·3	3·7
August	..	.. ..	2·5	1·7	2·2	2·2	2·2	2·6	4·3
September	..	.. ..	2·5	1·7	2·3	2·3	2·2	2·6	4·2
October	..	.. ..	2·5	1·8	2·5	2·2	2·3	2·5	4·2
November	..	.. ..	2·6	1·9	2·7	2·2	2·4	2·6	4·3
December	..	.. ..	2·6	1·9	2·8	2·2	2·5	2·5	4·4
1968 January	..	.. ..	2·8	2·0	2·9	2·5	2·7	2·7	4·7
February	..	.. ..	2·8	2·0	2·8	2·4	2·7	2·7	4·6
March	..	.. ..	2·6	1·9	2·7	2·2	2·6	2·5	4·5
April	..	.. ..	2·6	1·8	2·6	2·1	2·6	2·5	4·5
May	..	.. ..	2·5	1·7	2·3	2·0	2·5	2·4	4·4
June	..	.. ..	2·3	1·6	2·1	1·9	2·4	2·3	4·3
July	..	.. ..	2·3	1·5	2·1	1·9	2·3	2·2	4·4

27

Incomes, output and prices

Incomes and profits have generally risen faster than output; as a consequence retail prices have risen.
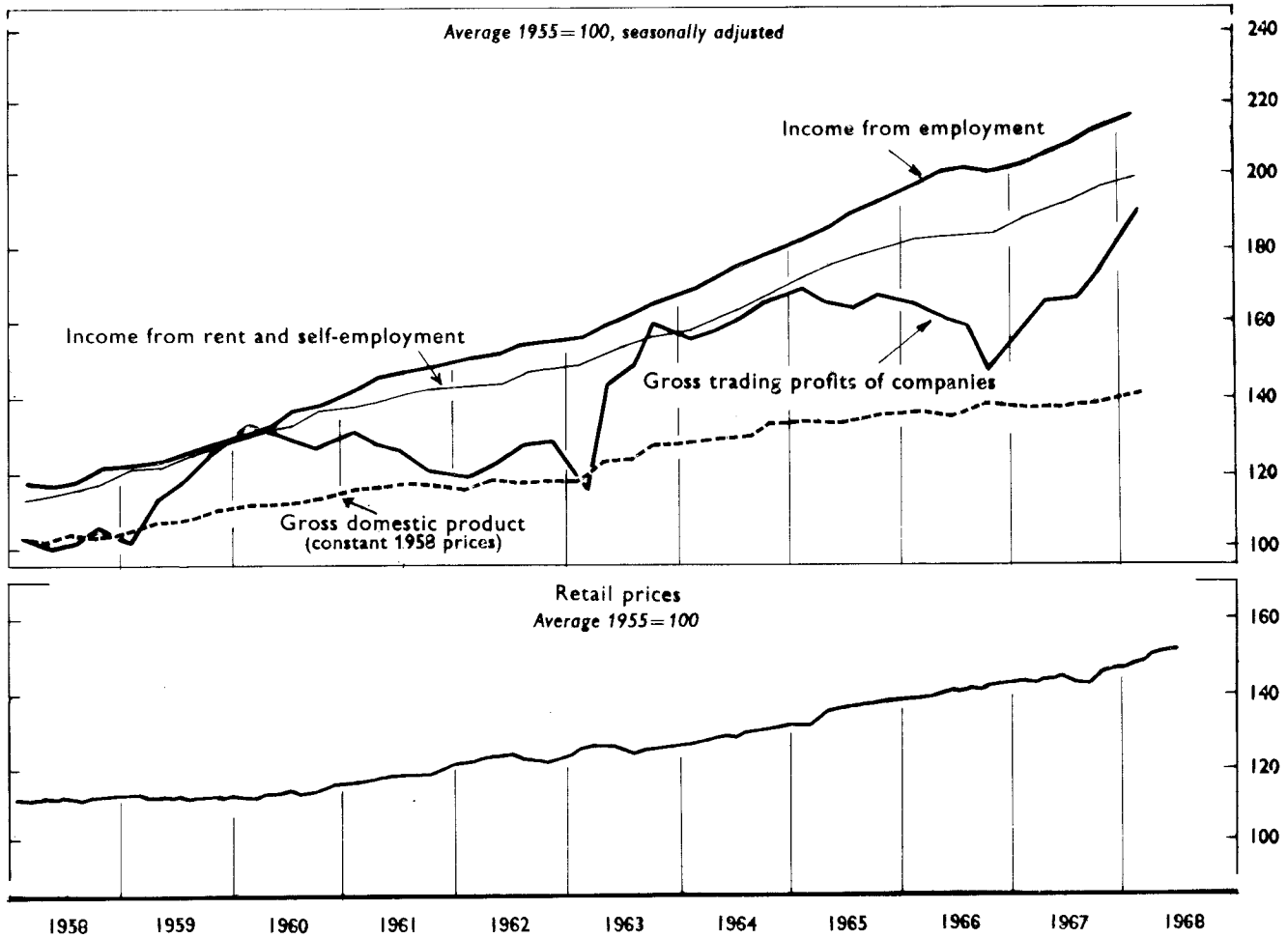
Average 1955=100, seasonally adjusted

Income from employment

Income from rent and self-employment

Gross trading profits of companies

Gross domestic product (constant 1958 prices)

Retail prices
Average 1955=100

1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968

Average 1955 = 100

	Income from employment	Gross trading profits of companies	Income from rent and self-employment	Gross domestic product (constant 1958 prices)	Index of retail prices
Value in 1967 (£ million)	23,265	4,851	4,697		
Seasonally adjusted					
1967 July	} 207·7	166·9	192·2	137·6	{ 144·1
August					143·7
September					143·6
October	} 212·2	175·2	196·4	137·5	{ 144·7
November					145·6
December					146·5
1968 January	} 216·0	190·4	198·4	140·8	{ 147·0
February					147·8
March					148·2
April					150·8
May					151·0
June					151·6

28

Earnings, hours worked and basic rates of wages

Salary and wage earnings tend to rise together. Wage earnings rise faster than basic rates of wages, partly because of a rising proportion of hours paid at overtime rates, partly for the reasons generally referred to as 'wage drift'.
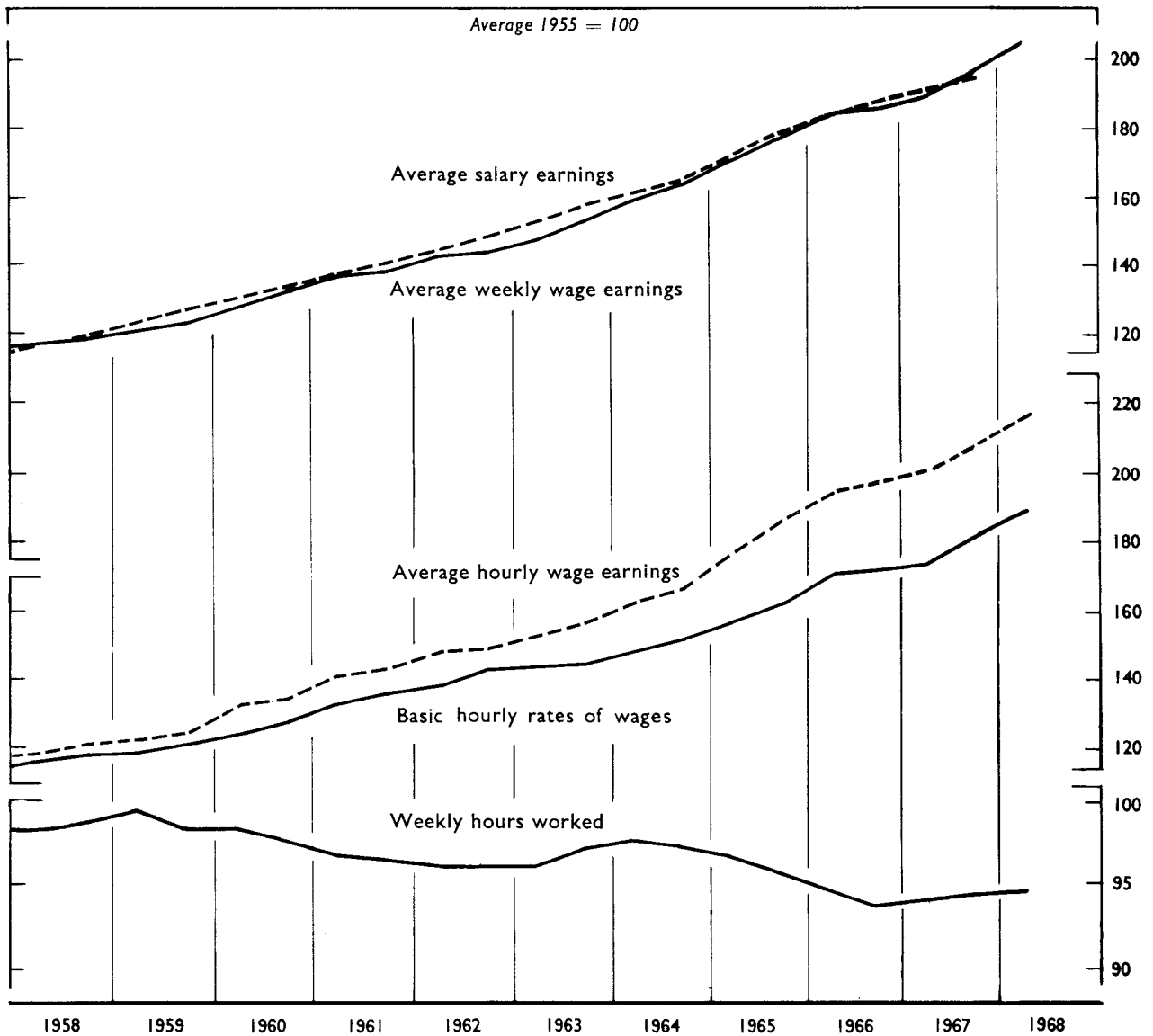
Average 1955 = 100

	Average salary earnings	Average weekly wage earnings	Weekly hours worked	Average hourly wage earnings	Basic hourly rates of wages
1966 April	..	·184·7	94·7	194·9	170·1
October	186·1	185·2	93·8	197·4	172·4
1967 April	..	188·5	94·0	200·4	174·8
October	194·7	196·0	94·3	207·9	181·4
1968 April	..	205·0	94·5	216·9	189·8

Note.   The index numbers of wage earnings, hours worked and basic hourly rates of wages relate to all manual workers in selected industries which together account for about half the total number of wage earners.

29

Costs, output per head and prices in manufacturing industry

There are cyclical variations in the growth of output per operative hour and in wage costs per unit of output. Wholesale prices of output are not generally sensitive to these short-term fluctuations in wage costs but follow rather their long-term trend.

Average 1955 = 100

Production
Seasonally adjusted

Operative hours worked
Seasonally adjusted

Average hourly wage earnings

Output per operative hour
Seasonally adjusted

Wage costs per unit of output

Wholesale prices of output

Wholesale prices of materials and fuel

1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968
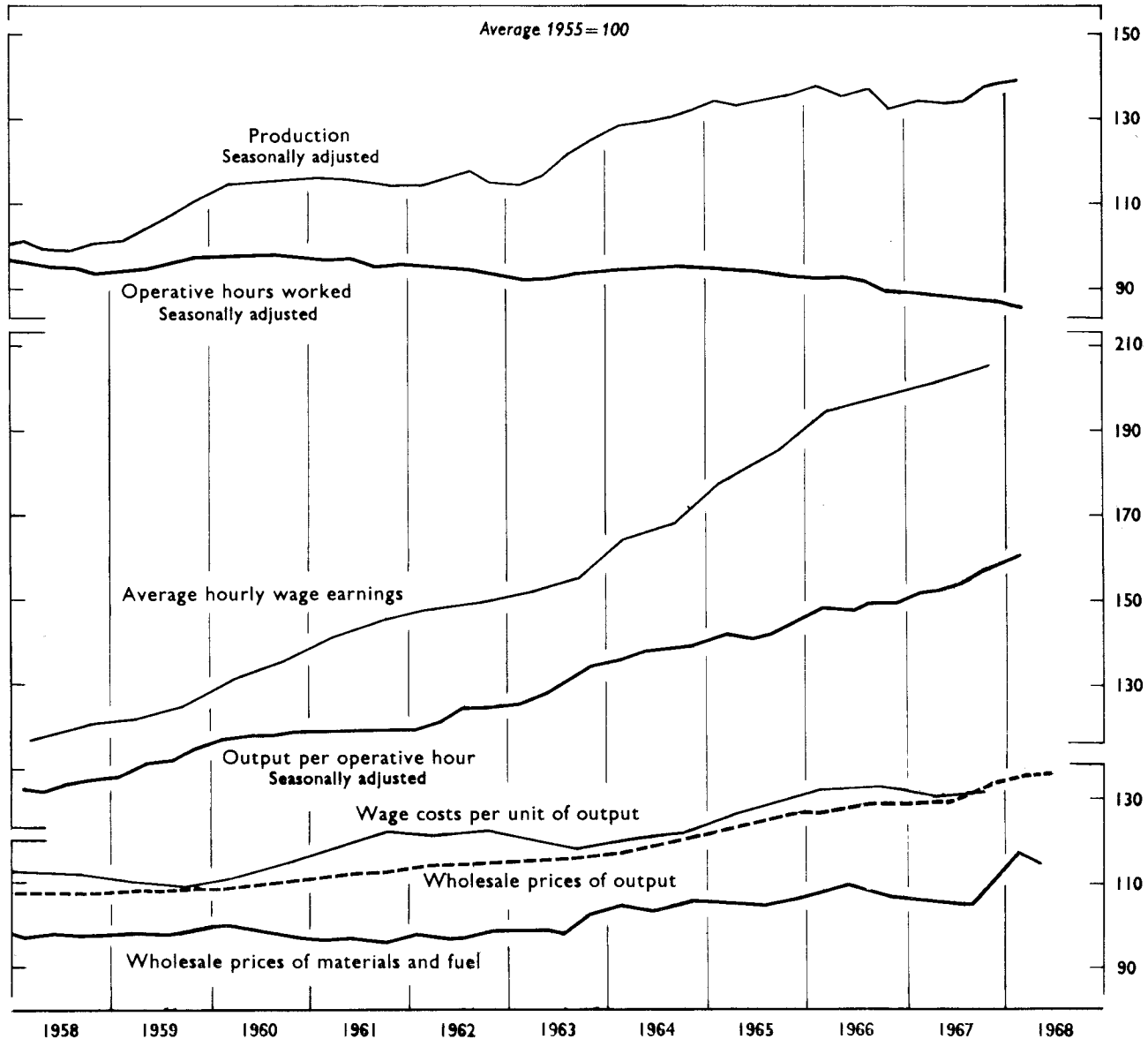
Average 1955=100

	Production	Operative hours worked	Output per operative hour	Average hourly wage earnings (¹)	Wage costs per unit of output (¹) (²)	Wholesale prices	
						Materials and fuel	Output
	Seasonally adjusted						
1967 2nd quarter	134·0	87·2	153·6	200·3	130·4	105·3	129·3
3rd quarter	134·0	86·8	154·3	..	..	105·4	130·2
4th quarter	137·1	86·6	158·2	206·6	130·6	110·3	131·4
1968 1st quarter	139·2	86·2	161·5			117·1	134·5
2nd quarter						115·3	136·9

(¹) April and October; all workers in manufacturing industry.
(²) Index of average hourly wage earnings divided by index of output per operative hour.

30

London clearing banks

The banks' main assets are their advances to customers, their liquid assets (these are cash and balances with the Bank of England, other than special deposits, money at call and short notice and bills discounted) and their investments (mainly British government securities). Deposits are their main liabilities. In recent years the ratio of advances to deposits has risen and the ratio of liquid assets to deposits has fallen.

Deposits and advances
£ million, seasonally adjusted

Main assets as proportions of total deposits
Percentages
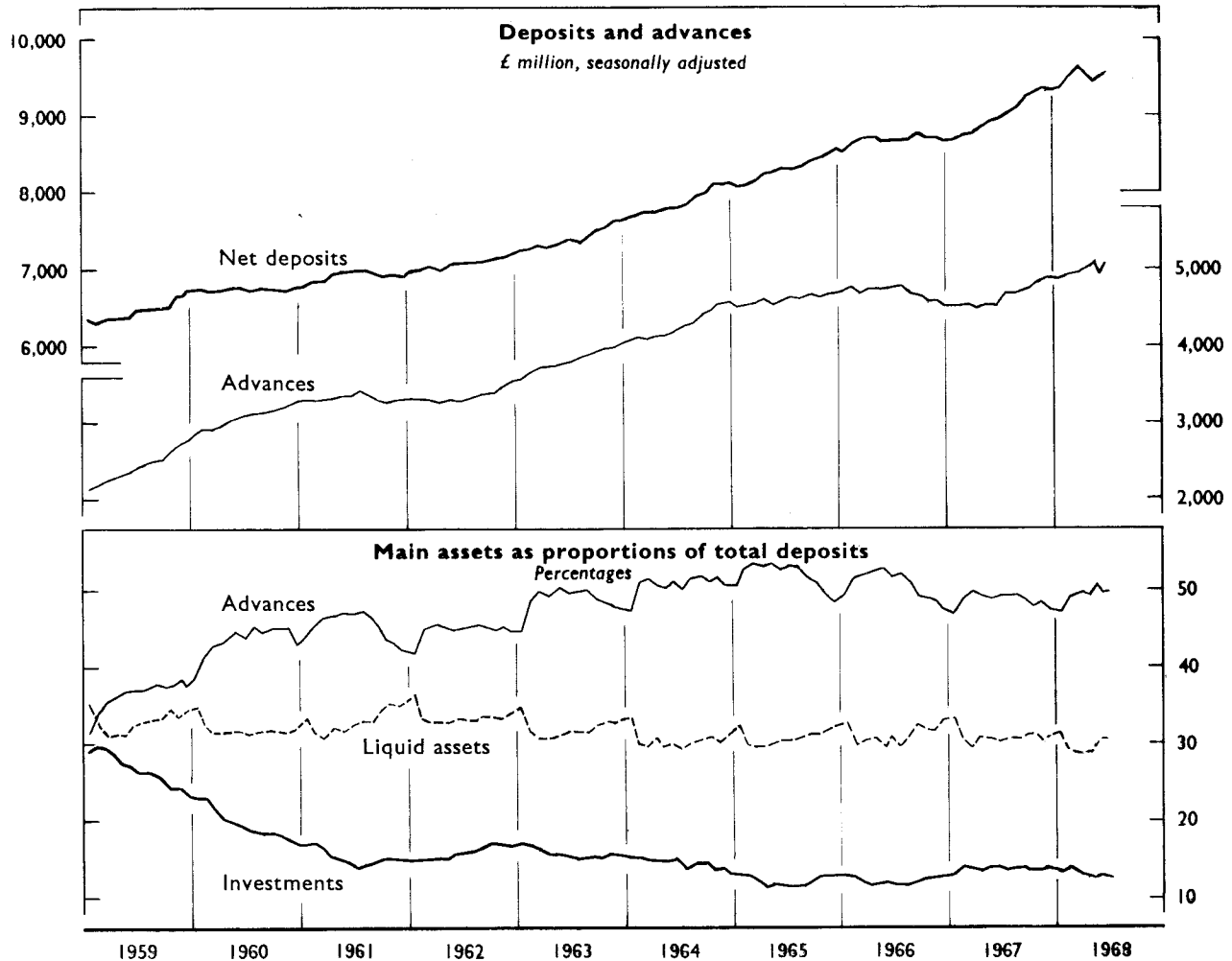
	Net deposits (¹)	Advances to customers, etc. (²)	Main assets as proportions of total deposits		
			Liquid assets	Investments	Advances (³)
	£ million, seasonally adjusted		Percentages		
1967 July	8,995	4,680	30·3	13·8	48·9
August	9,095	4,675(⁴)	30·2	13·9	48·8
September	9,205	4,710	31·0	13·9	48·3
October	9,305	4,755	31·0	13·6	47·9
November	9,370	4,810	30·2	13·6	48·1
December	9,365	4,845	30·5	13·7	47·4
1968 January	9,385	4,845	31·3	13·5	47·0
February	9,500	4,915	29·1	13·7	49·6
March	9,610	4,995	28·7	13·2	49·9
April	9,515	5,030	28·8	12·9	49·7
May	9,485	5,060	28·9	13·1	50·4
June	9,495	4,950	30·2	12·9	49·5
July	9,550	5,050	30·2	12·6	49·7

(¹) Total deposits *less* balances with, and collections on, other banks, and items in transit, etc.   (²) Excluding advances to nationalised industries and items in transit.   (³) Total advances excluding items in transit.   (⁴) The British Steel Corporation was transferred from private to public ownership on 28 July 1967.

Interest rates, security prices and yields
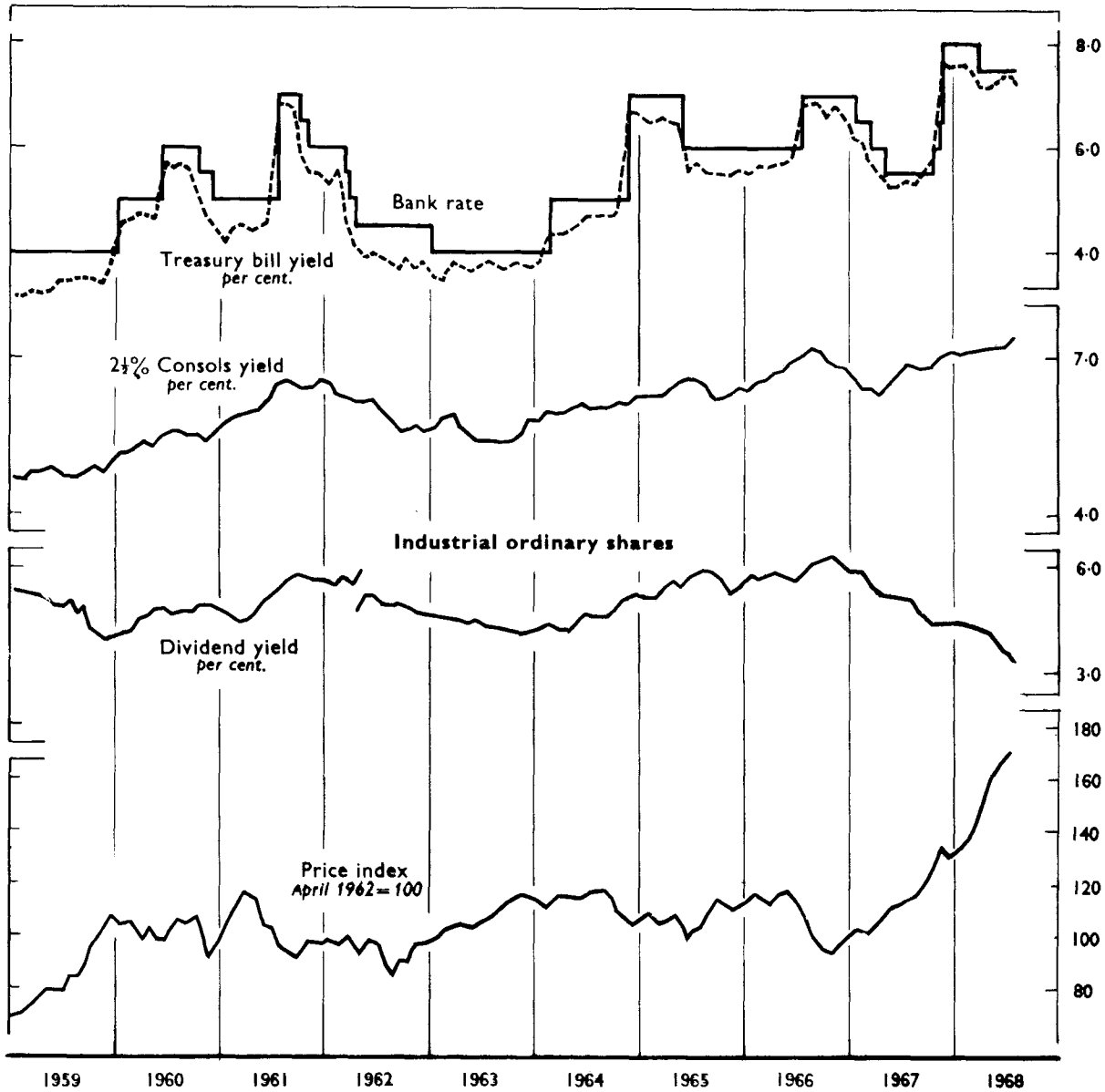
		Bank rate	Treasury bill yield	2½% Consols yield	Industrial ordinary shares (¹)	
		Last Friday of each month			Yield	Price index
		Percentage				April 1962 = 100
1967 July	.. .. ..	5½	5·42	6·87	5·14	114·30
August	.. ..	5¼	5·36	6·80	5·06	115·24
September	.. ..	5½	5·55	6·79	4·82	121·06
October	.. ..	6	5·80	6·87	4·60	127·31
November	.. ..	8(²)	7·70	7·02	4·40	132·31
December	.. ..	8	7·63	7·13	4·47	130·09
1968 January	.. ..	8	7·66	7.09	4·43	131·75
February	.. ..	8	7·51	7·13	4·31	135·60
March	.. ..	7½	7·24	7·18	4·26	138·49
April	.. .. ..	7½	7·21	7·18	3·86	153·17
May	.. .. ..	7½	7·37	7·26	3·68	160·17
June	.. .. ..	7½	7·37	7·46	3·60	163·71
July	.. .. ..	7½	7·19	7·55	3·42	172·37

(¹) F.T.—Actuaries series from April 1962: previously Actuaries' Investment series.　　(²) 6½% from 9 November and 8% from 19 November 1967.

Balance of payments
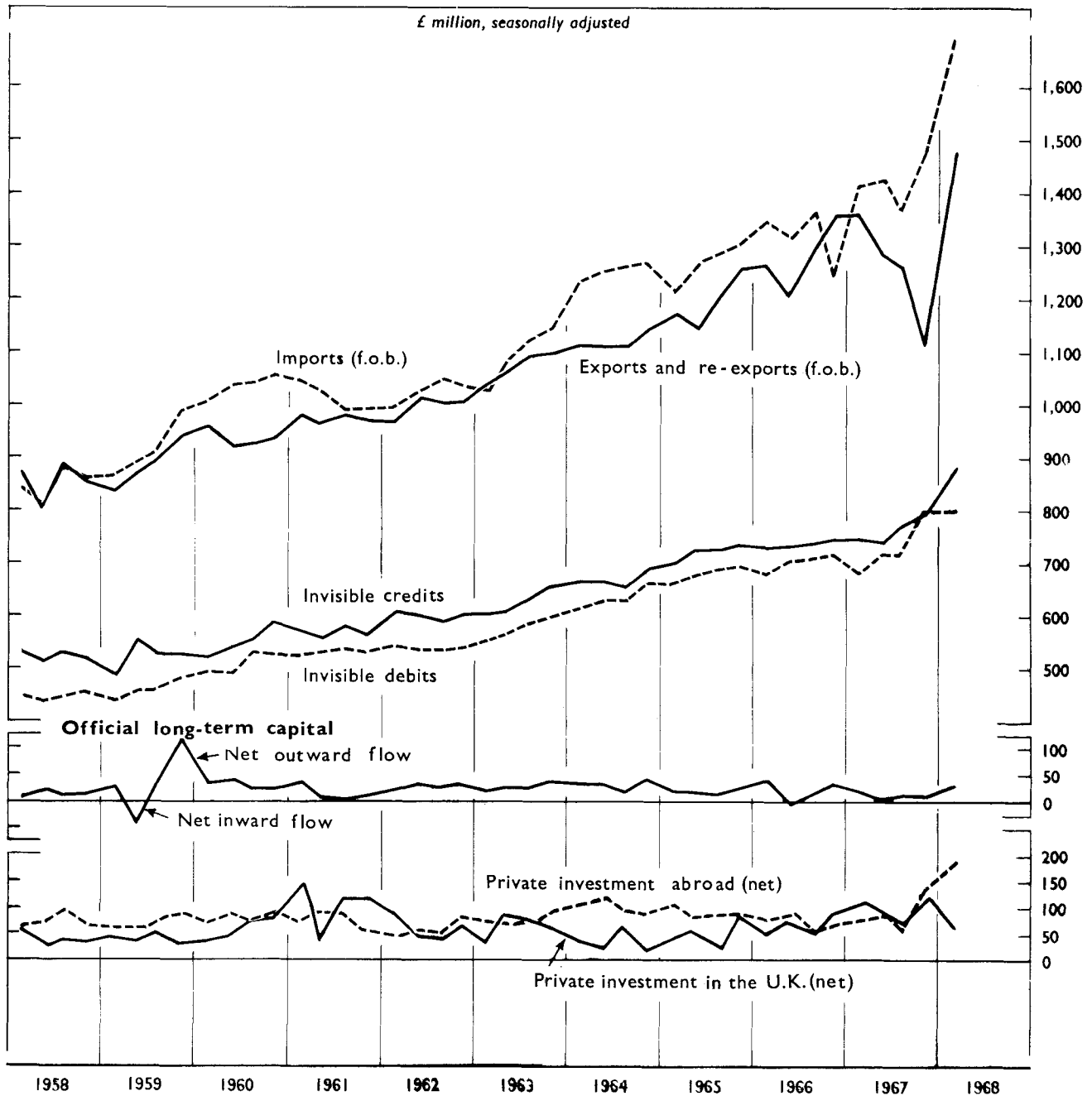
£ million, seasonally adjusted

	Imports (f.o.b.) (¹)	Exports and re-exports (f.o.b.)	Invisibles		Official long-term capital		Private investment	
			Debits	Credits	Outward (net)	Inward (net)	Abroad (net)	In the U.K. (net)
1967 1st quarter ..	1,405	1,359	679	747	22	—	77	·⁻⁻
2nd quarter ..	1,424	1,280	717	740	3	—	88	⁻·
3rd quarter ..	1,368	1,268	716	771	15	—	61	⁻⁻
4th quarter ..	1,476	1,116	799	789	14	—	137	·⁻⁻
1968 1st quarter ..	1,696	1,476	800	886	30	—	183	⁻⁻

(¹) Excluding deliveries of, but including payments for, U.S. military aircraft and missiles.

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Balance of payments *(continued)*

£ million, seasonally adjusted

Invisible balance

Visible balance

Balance of long-term capital

Balance of current and long-term capital

1958 1959 1960 1961 1962 1963 1964 1965 1956 1967 1968
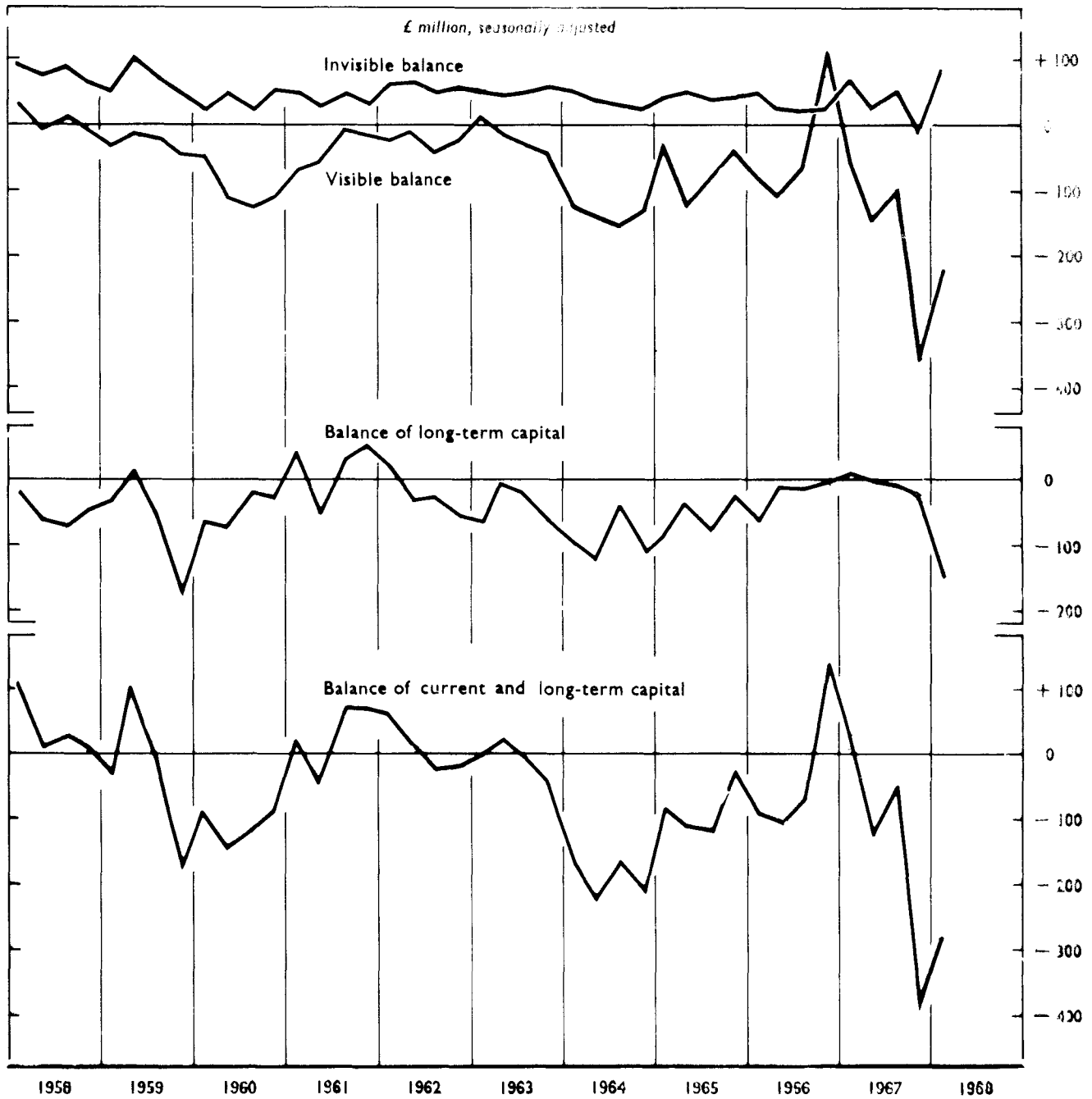
£ million, seasonally adjusted

	Visible balance(¹)	Invisible balance	Current balance	Balance of long-term capital	Balance of current and long-term capital
1967 1st quarter	— 46	+68	+ 22	+ 4	+ 26
2nd quarter	—144	+23	—121	— 1	—122
3rd quarter	—100	+55	— 45	— 5	— 50
4th quarter	—360	—10	—370	—24	—394
1968 1st quarter	—220	+86	—134	—148	—282

(¹) Excluding deliveries of, but including payments for, U.S. military aircraft and missiles.

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Exports and imports: terms of trade

The index numbers of unit value give measures of price changes in United Kingdom exports and imports. A rise in the terms of trade (unit value index for exports divided by unit value index for imports) is favourable to the visible balance of payments.

£ million, seasonally adjusted

— Trend

Imports (c.i.f.)

Exports (f.o.b.)

700

600

500

400

300

1961 = 100

Unit value of imports

Unit value of exports

Terms of trade

120

110

100

100

90

1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968
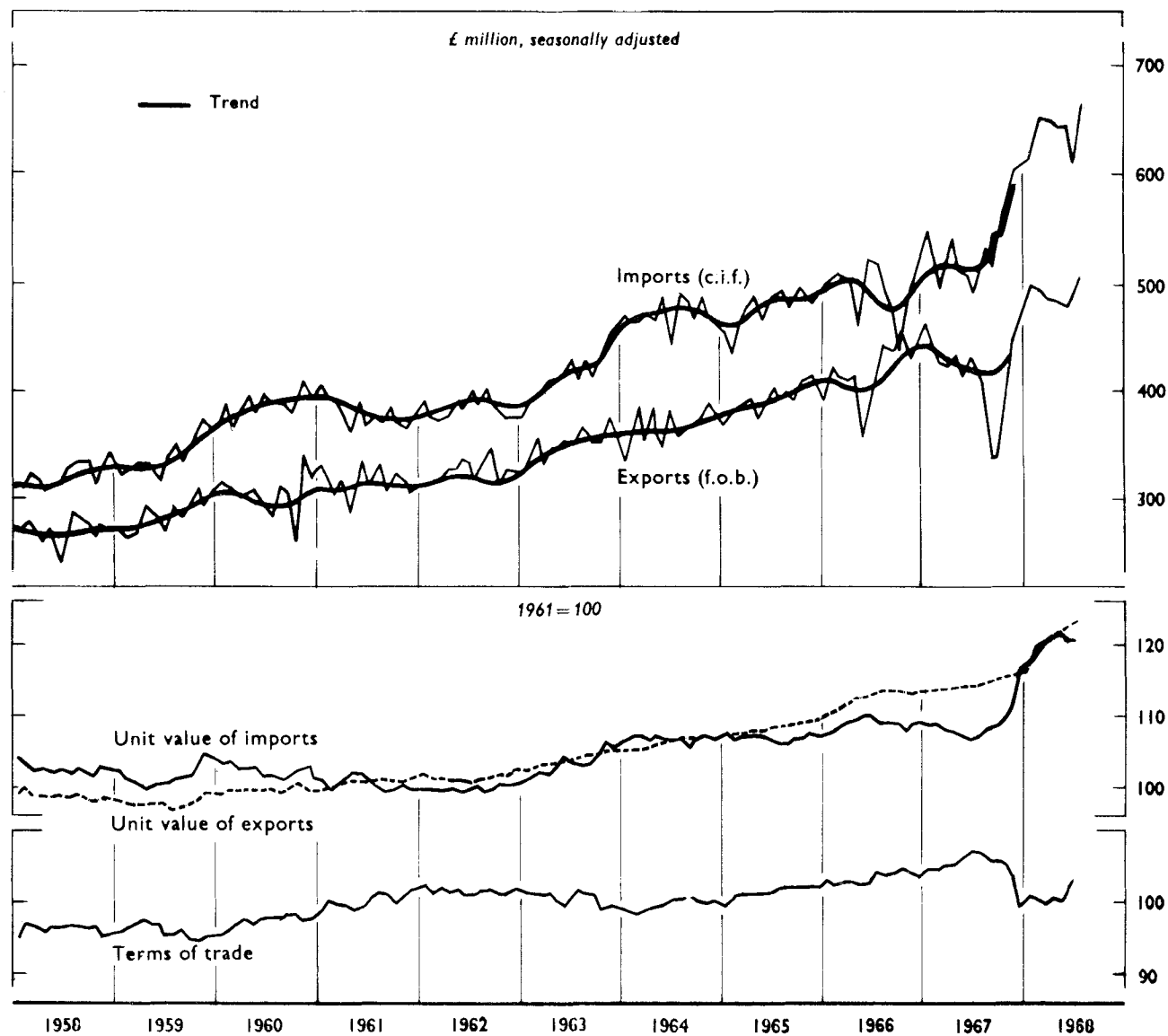
	Exports (f.o.b.)	Imports (c.i.f.) (¹)	Unit value of exports	Unit value of imports	Terms of trade
	£ million, seasonally adjusted		1961 = 100		
1967 July	433	493	114	107	107
August	421	519	115	108	106
September	408	534	115	109	106
October	339	519	116	110	105
November	340	574	116	112	104
December	449	605	116	117	100
1968 January	500	617	120	119	101
February	496	656	121	120	101
March	489	652	121	121	100
April	488	645	122	122	100
May	483	648	122	121	101
June	493	608	125	121	104
July	510	663			

(¹) Excluding U.S. military aircraft, etc.

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Exports : analysis by destination

£ million, seasonally adjusted log scale

Trend

Sterling area

E.E.C.

E.F.T.A.

North America

1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968
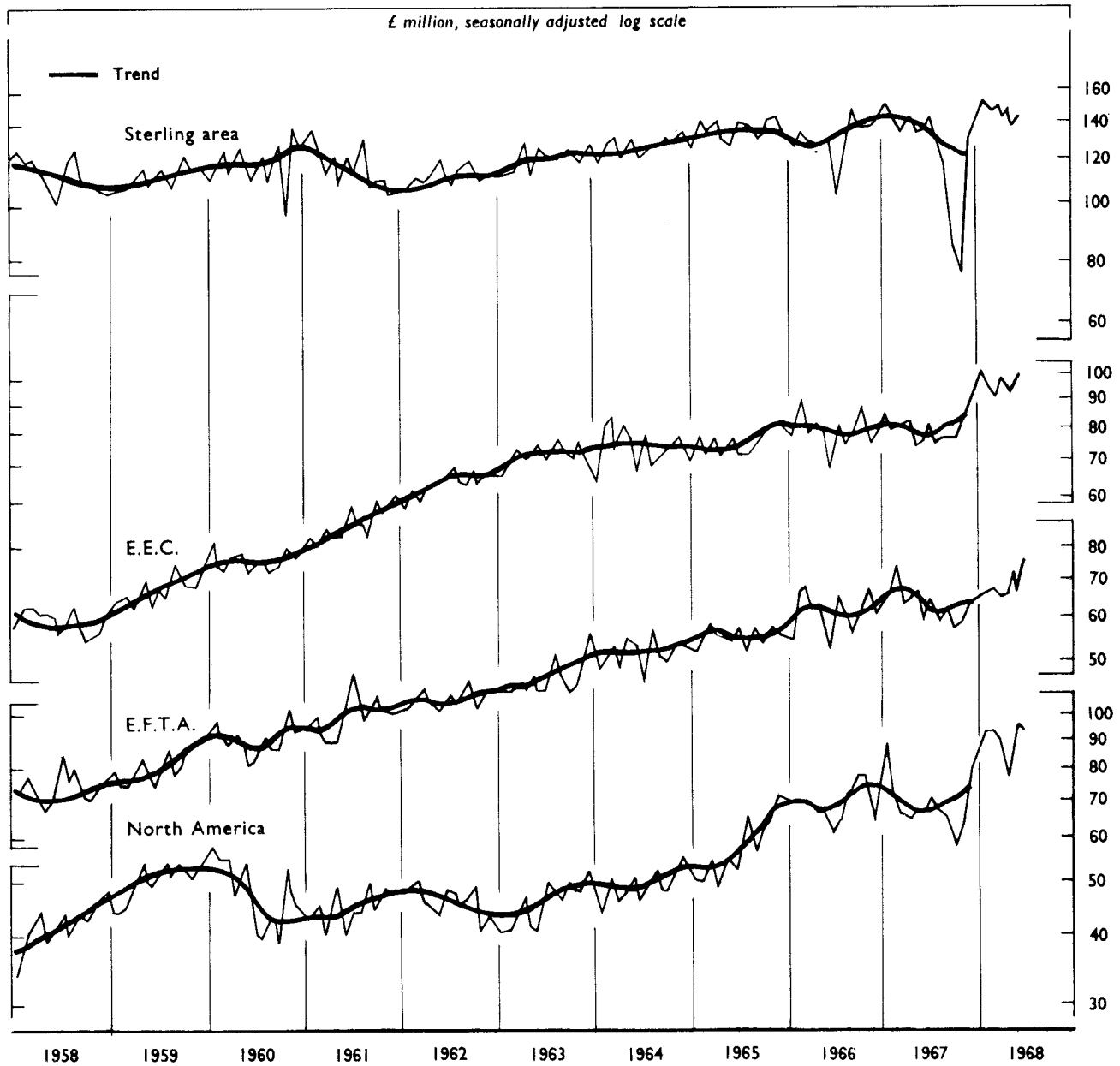
		Total	Sterling area	E.E.C.	E.F.T.A.	North America
1967	July	433	142	76	65	71
	August	421	129	81	59	67
	September	408	120	76	62	65
	October	339	87	77	57	57
	November	340	76	77	59	63
	December	449	128	89	64	80
1968	January	500	152	102	66	94
	February	496	148	95	67	94
	March	489	149	91	65	90
	April	488	142	99	66	83
	May	483	148	94	72	77
	June	493	138	92	67	96
	July	510	143	100	76	94

Exports: analysis by commodity classes

£ million, seasonally adjusted, log scale

Trend

Machinery

Road motor vehicles

Metals and miscellaneous manufacturing

Chemicals

1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968

£ million, seasonally adjusted
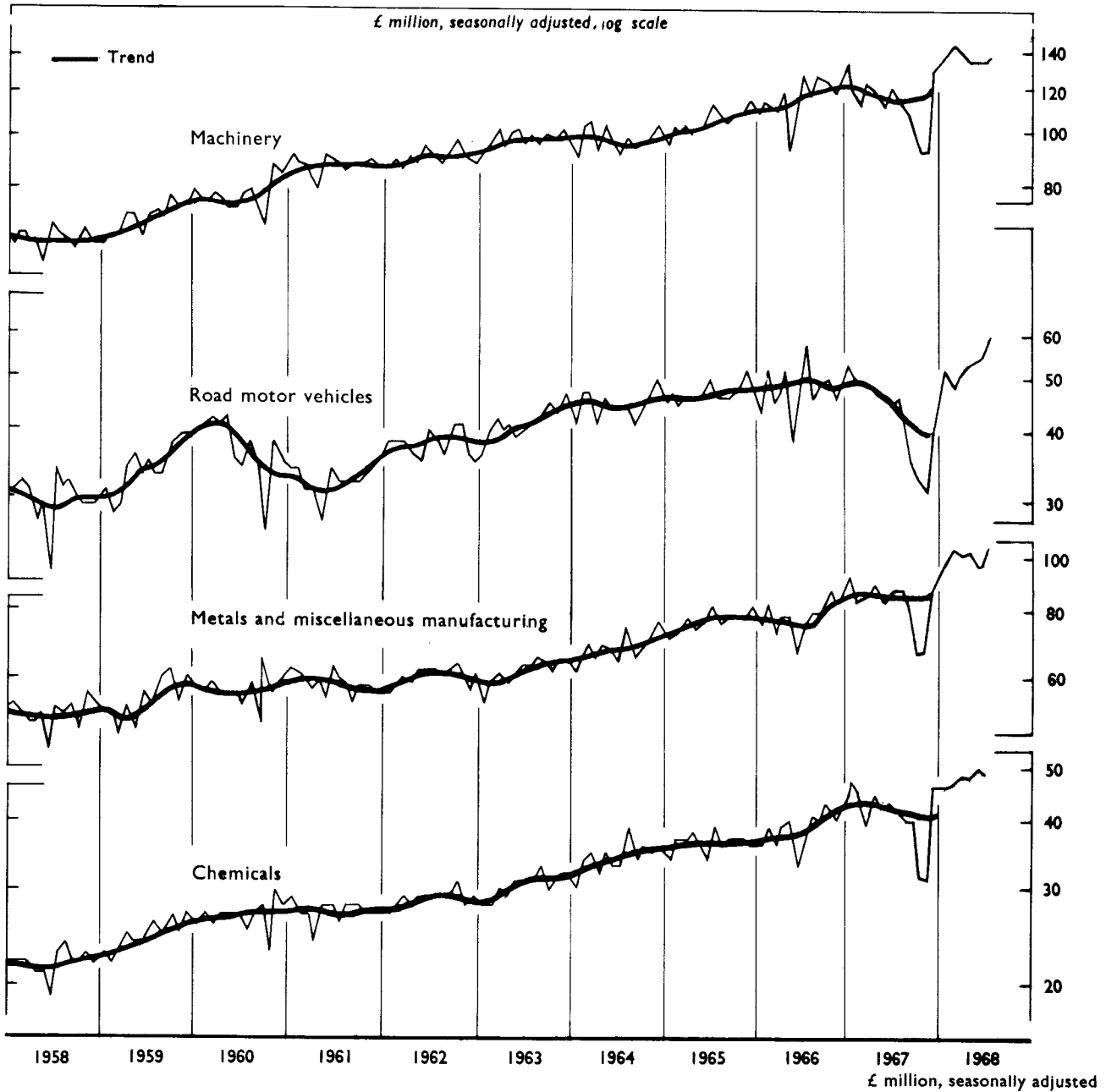
		Total	Machinery	Road motor vehicles	Metals and miscellaneous manufacturing	Chemicals
1967 July	.. .. ..	433	120	45	86	42
August	.. .. ..	421	114	46	87	40
September	.. ..	408	111	36	87	40
October	.. ..	339	92	33	67	33
November	.. ..	340	92	31	67	32
December	.. ..	449	129	39	87	46
1968 January ..	.. ..	500	137	52	97	46
February	.. ..	496	146	48	102	47
March	.. ..	489	140	51	100	48
April	.. .. ..	488	135	53	101	48
May	.. .. ..	483	136	54	96	49
June	.. .. ..	493	136	55	97	50
July	.. .. ..	510	138	60	102	49

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Imports : analysis by commodity classes

£ million, seasonally adjusted, log scale

Fuels

Food, drink and tobacco

Industrial materials

Finished manufactures

1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968
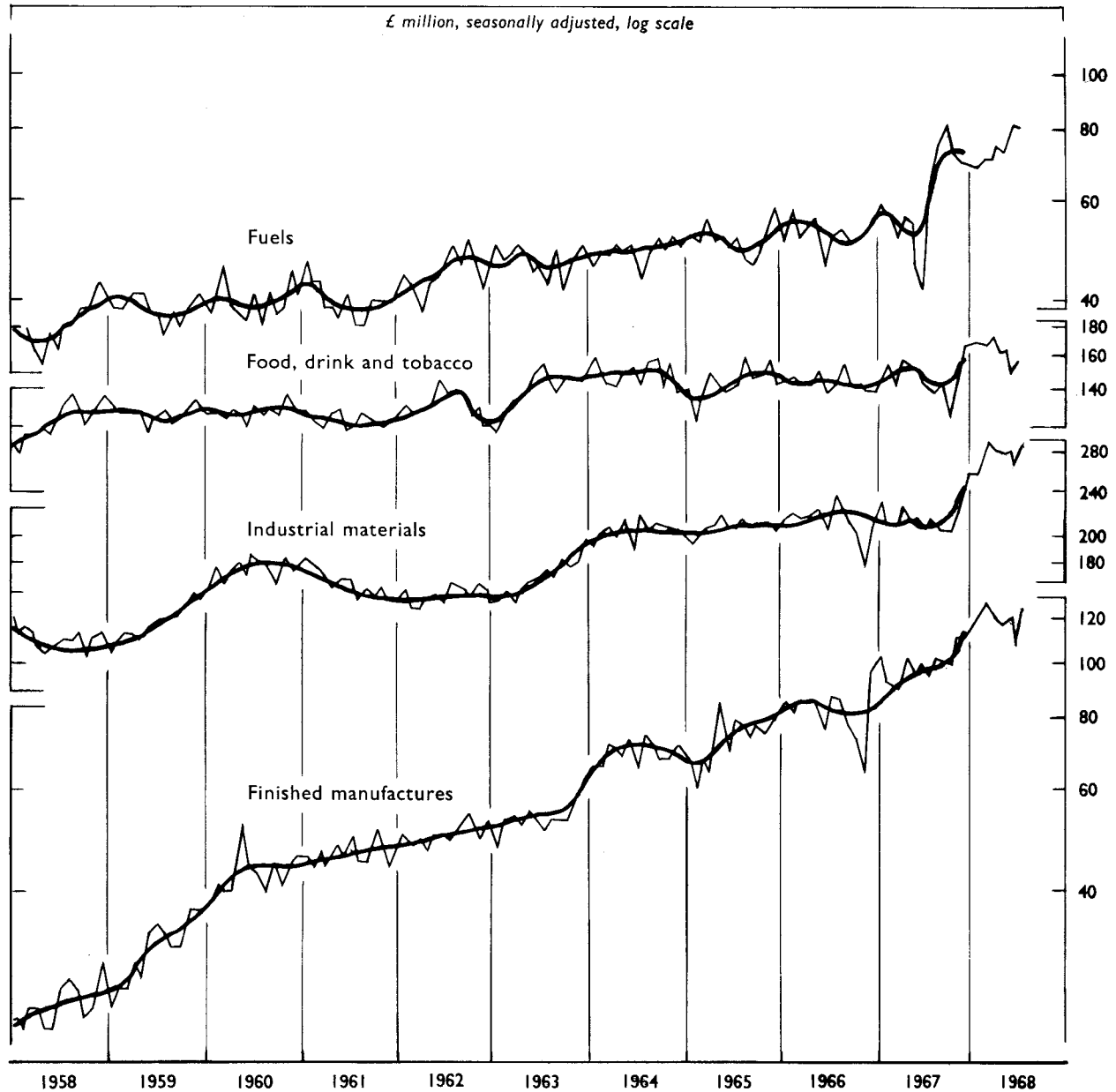
£ million, seasonally adjusted

	Total (¹)	Fuels	Food, drink and tobacco	Industrial materials (²)	Finished manufactures (¹)
1967 July	493	42	143	208	96
August	519	64	139	215	96
September	534	77	142	206	99
October	519	82	125	205	97
November	574	73	150	225	115
December	605	70	167	254	115
1968 January	617	69	168	252	120
February	656	71	167	284	126
March	652	71	172	277	120
April	645	75	161	275	118
May	648	73	164	277	120
June	608	81	148	267	106
July	663	80	157	285	125

(¹) Excluding U.S. military aircraft, etc. (²) See also page 15.

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United Kingdom exports of manufactures in world markets

$ thousand million, log scale

Exports of manufactures to world

By main manufacturing countries

By United Kingdom

Exports of manufactures to O.E.C.D. countries in Europe

By main manufacturing countries

By United Kingdom

Exports of manufactures to North America

By main manufacturing countries
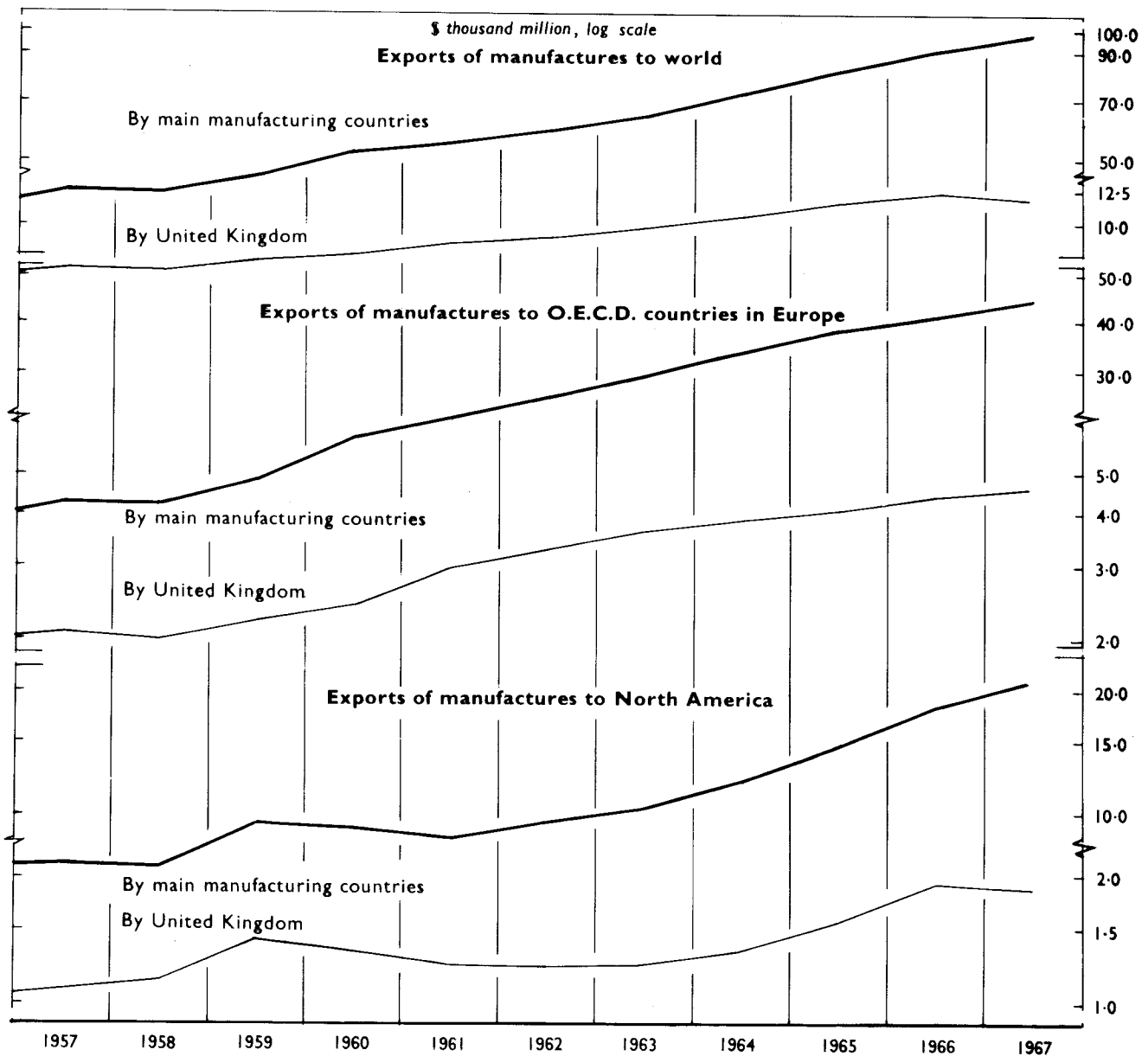
By United Kingdom

$ thousand million

						To world		To O.E.C.D. countries in Europe		To North America	
						By main manufacturing countries (¹)(²)	By United Kingdom	By main manufacturing countries (¹)(²)	By United Kingdom	By main manufacturing countries (¹)(²)	By United Kingdom
1962	..	..	..	..	..	58·68	9·16	26·51	3·27	9·85	1·24
1963	..	..	..	..	..	63·66	9·80	29·87	3·62	10·37	1·24
1964	..	..	..	..	..	73·06	10·35	34·41	3·88	12·13	1·33
1965	..	..	..	..	..	82·74	11·19	38·53	4·09	14·96	1·58
1966	..	..	..	..	..	92·61	11·98	42·51	4·47	18·56	1·96
1967	..	..	..	..	..	99·15	11·79	44·71	4·53	20·49	1·89

(¹) United Kingdom, United States of America, German Federal Republic, France, Italy, Belgium/Luxembourg, Netherlands, Sweden, Switzerland, Canada and Japan. (²) United States Special Category exports are excluded ; many manufactures, exports of which are estimated at approximately $1,030 million in 1964, were removed from the Special Category in 1965, thus introducing discontinuities into the series.

Reserves and net liabilities in sterling and in other currencies

End of period
£ million

| | Gold and convertible currency reserves | External sterling liabilities (net)(1) | | | | | External liabilities (net) in overseas sterling area currencies (1) | External liabilities (net) in non-sterling currencies (1) | | |
| | | Total | International organisations (2) | Countries | | | | Total | Official | U.K. banks |
				Total	Sterling area (3)	Non-sterling area(4)				
1962	1,002	3,769	606	3,163	2,430	733	72	28	—	28
1963	949	3,889	627	3,262	2,592	670	66	12	—	12
1964	827	4,296	991	3,305	2,591	714	74	230	72	158
1965 1st quarter	832	4,277	977	3,300	2,533	767	71	405	100	305
2nd quarter	997	4,624	1,479	3,145	2,506	639	80	209	—	209
3rd quarter	984	4,822	1,476	3,346	2,531	815	68	155	—	155
4th quarter	1,073	4,856	1,481	3,375	2,594	781	81	128	—	128
1966 1st quarter	1,276	5,012	1,654	3,358	2,679	679	104	75	—	75
2nd quarter	1,170	5,111	1,644	3,467	2,853	614	86	9	—	9
3rd quarter	1,129	5,196	1,644	3,552	2,684	868	41	34	18	16
4th quarter	1,107	5,145	1,656	3,489	2,589	900	36	—20	14	— 34
1967 1st quarter	1,164	4,891	1,625	3,266	2,665	601	46	106	—	106
2nd quarter	1,012	4,697	1,455	3,242	2,554	688	60	84	—	84
3rd quarter	976	4,895	1,439	3,456	2,489	967	37	54	—	54
4th quarter	1,123(5)	5,339	1,540	3,799	2,443	1,356	60	155	193	— 38
1968 1st quarter	1,134	5,689	1,543	4,146	2,545	1,601	61	247	320	— 73
April	1,155	..	..	..	..	..	..	..	..	..
May	1,144	..	..	..	..	..	..	..	..	..
June	1,118	5,629	2,135	3,494	2,172	1,323	158	363	402	— 39
July	1,139	..	..	..	..	..	..	..	..	..

		External sterling liabilities (net)(1) : countries							
			Funds with		Other liabilities (net)				
	Total countries	U.K. local authorities	Hire purchase finance companies	Sterling area countries (3)	Non-sterling countries(4)				
					Total	North America	Latin America	Western Europe	Other countries
1962	3,163	93	98	2,338	634	82	—60	487	125
1963	3,262	84	76	2,509	593	72	—53	458	116
1964	3,305	132	87	2,462	624	164	—52	470	42
1965 1st quarter ..	3,300	153	90	2,376	681	207	—66	481	59
2nd quarter ..	3,145	151	105	2,326	563	216	—63	377	33
3rd quarter ..	3,346	166	119	2,298	763	380	—55	419	19
4th quarter ..	3,375	170	126	2,362	717	307	—53	456	7
1966 1st quarter ..	3,358	172	149	2,445	592	200	—45	382	55
2nd quarter ..	3,467	169	171	2,606	521	258	—71	344	—10
3rd quarter ..	3,552	151	159	2,451	791	392	—80	526	—47
4th quarter ..	3,489	140	137	2,386	826	387	—83	506	16
1967 1st quarter ..	3,266	165	145	2,442	514	121	—76	426	43
2nd quarter ..	3,242	181	146	2,321	594	258	—95	401	30
3rd quarter ..	3,456	155	77	2,308	916	459	—93	523	27
4th quarter ..	3,799	138	102	2,244	1,315	822	—107	647	—47
1968 1st quarter ..	4,146	137	111	2,340	1,558	1,031	—110	718	—81
2nd quarter ..	3,494	84	76	2,031	1,304	855	—113	698	—137

(1) Liabilities *less* claims; a minus sign indicates that claims exceed liabilities.
(2) Including I.M.F.
(3) Including Rhodesia up to the end of 1965 and Burma up to the end of 1966.
(4) Including Rhodesia from the beginning of 1966 and Burma from the beginning of 1967
(5) Valued at new parity of £1 to $2.40 established on 18 November 1967.

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(¹) Published by the British Steel Corporation.

CENTRAL STATISTICAL OFFICE

STATISTICAL NEWS

No. 2 AUGUST 1968

The purpose of this quarterly publication is to put the user of statistics in touch with all that is going on in the world of official statistics. Each issue contains two or three main articles treating selected topics in depth and shorter Notes report what is new in official statistics. A cumulative index of the contents makes the book a most useful reference source.

In the first issue, which appeared in May, Professor Moser, the Director of the Central Statistical Office, discussed the future role of the Central Statistical Office. Mr. J. Stafford, Director of Statistics at the Board of Trade, wrote about a new Business Statistics Office and Mr. W. F. F. Kemsley of the Government Social Survey explained changes in the sample design of the Family Expenditure Survey.

The August issue contains three new articles. The first, by Mr. R. F. Fowler, Director of Statistical Research in the Department of Employment and Productivity, discusses Duration of Unemployment. Another article by Mr. H. E. Bishop of the Central Statistical Office, deals with Scientific Manpower. The third main article is by Dr. A. T. Park of the Ministry of Finance and describes Northern Ireland Government Statistics.

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