TECHNICAL NOTES

The OECD *Economic Outlook* draws heavily on the statistical work of the Department of Economics and Statistics. The following notes describe briefly the statistical concepts and methods applied as well as the forecasting techniques used. Special emphasis is given to deviations from national (or other international) practices.

FORECASTING TECHNIQUES

The general forecast tables, the country tables on demand and output and the balance of payments of seven major countries are based on an internally consistent set of forecasts of national accounting aggregates for the OECD area. Relatively detailed forecasts are prepared for the major seven OECD countries (Canada, France, Germany, Italy, Japan, the United Kingdom and the United States), which account for more than 70 per cent of total OECD trade. For the other OECD countries only GDP and foreign trade forecasts are made. While account is taken of forecasts prepared in the countries concerned, both official and unofficial, the forecasts given here are entirely the responsibility of the Economics and Statistics Department. Some of the forecasting methods employed, particularly in the major countries, have been described in an OECD Report: *Techniques of Economic Forecasting*, Paris, 1965.

Forecasts are first prepared for what may be broadly called the exogenous elements of demand: public consumption, gross fixed investment and exports of goods and services. For public consumption and public investment as much use as possible is made of budgetary statements, although their availability and usefulness vary from country to country. With regard to private investment extensive use is made of the intention surveys which are carried out in most of the seven countries. Exports are initially forecast in the light of past trends, but as will be seen below, they are reconsidered as the general forecasts for each country and for all countries together take shape.

The forecast for these exogenous elements of demand, plus any information that may be obtained regarding stock changes, provides a first indication of the likely development of the pressure of demand. In order to get some indication of the possible growth of supply, use is made of relationships describing the " capacity " rate of growth of the economy. At this stage an appropriation account for the household sector is constructed which takes into account the probable development of incomes as indicated by wage settlements and by the forecast change in the pressure of demand and provides an estimate of personal disposable income. Little is known about the short-term behaviour of the personal saving ratio and hence the forecast underlying consumers' expenditures usually assumes an unchanged ratio unless there are particular reasons to assume otherwise. The forecast for the exogenous elements of demand, together with that for personal disposable income, provides a basis for a first assessment of likely price developments. This in turn is used to forecast the likely development of personal consumption in real terms.

Thus, a first forecast of the change in final expenditure is obtained and on the basis of past cyclical relationships with imports, an estimate is also made of the likely import demand. In this respect a number of relationships have been developed linking import demand with domestic demand which have thrown some light on the cyclical variation in import propen-

sities. Forecasts for merchandise imports and for imports of services are usually made in terms of customs and balance of payments statistics (see below) and then transposed in national accounting terms.

The subsequent stages of the forecasting procedure consist of reiterations, with a view to ensuring the international consistency of foreign trade forecasts of individual countries.

OECD trade forecasts are based on the projected import demand of individual countries, described above. The figures obtained for the seven major countries, together with direct import forecasts for the other OECD countries, provide the aggregate OECD import demand, which is broken down into:

i) demand for OECD exports;

ii) demand for imports from the rest of the world.

The forecast for OECD imports from the rest of the world is taken as the starting point for a forecast of OECD exports to the rest of the world, via an assessment of possible movements in other elements in the rest of the world's balance of payments with the OECD area, the financial position of the primary producing countries, and special factors affecting exports to the Sino-Soviet countries.

Exports to the rest of the world, in combination with *i*) above, yield the projected total of OECD exports [1], which is allocated among exporting countries on the basis of the projections shown in Table 12.

These projections distinguish between :

i) Potential exports—defined for each country as the exports which would take place in any given period if the country retained its share in OECD exports to each individual export market [2];

ii) Export performance — defined as a country's gain or loss in market shares. This has been found to be affected both by longer-run factors and by cyclical changes in relative pressures on capacity.

The export forecasts thus obtained are transposed into national accounting terms and incorporated in the forecasts of the seven major countries.

The foreign trade forecasting procedure outlined above has normally been carried out in terms of current values. Lately it has, however, been supplemented by forecasts in volume which are based on an econometric world trade model [3]. The two approaches are developed in parallel and the confrontation of the forecasts they provide for individual trade flows allows a further consistency check. It also contributes to the forecasts that are made for foreign trade average values.

A similar but much simpler process is employed in arriving at forecasts of invisible transactions. For each main category of invisibles—travel, transportation, investment income, Government services, other miscellaneous services, private and official transfers—forecasts are prepared for each country's imports (debits) and for the OECD's transactions with the

1. Allowing for inconsistent recording of intra-OECD trade, as discussed on p. 83.

2. For the purpose of this calculation, the following markets are distinguished: each major OECD country, other OECD countries aggregated into four groups, the primary-producing countries aggregated into seven groups and the Sino-Soviet area.

3. This model is a revised version of: F.G. Adams, H. Eguchi and F. Meyer-zu-Schlochtern, *An Econometric Analysis of International Trade*, OECD Economic Studies, Paris 1969.

rest of the world. The resulting total OECD exports (or credits) are then allocated to individual OECD countries.

The consistency check imposed by the foreign trade matrix and the invisibles forecast often contributes to the country forecasts themselves, since the inter-dependency of the OECD area is such that developments in one country or in a group of countries are as a rule reflected in developments elsewhere.

All forecasts are prepared on a half-yearly basis. In a number of cases this can be done on the basis of quarterly national accounts compiled in Member countries. In others, the half-yearly national accounts aggregates covering the past periods are prepared by the OECD Secretariat on the basis of the short term economic indicators available and can only be considered as more or less rough estimates.

NATIONAL ACCOUNTS

The figures shown in the country tables on Demand and Output follow, in general, the *OECD Standardized System*[1] definitions which need not be summarized here. There are however, some important deviations from the *Standardized System:*

a) *France*

In the French system the main aggregate is " Gross Domestic Production " which has a narrower definition of production. It excludes the services provided by the General Government, financial institutions and domestic servants.

It follows from the French definition that " government consumption " excludes salaries paid to civil servants. On the other hand, expenditure on goods and services of so-called " private administrations ", which would come under private consumption in the *Standardized System*, are included with government consumption in the French system.

In 1964 the French definition of stocks was extended to include unfinished as well as new, finished, but unsold dwellings which are excluded from " fixed capital formation " and " residential construction ".

Exports include net services plus freight earned on imports, the latter being given cif.

Finally, the activities are recorded on a territorial basis and thus, for instance, expenditure by foreign tourists is treated as part of French personal consumption, whereas in the *Standardized System* it is classified under exports.

The figures shown in this number of the *Economic Outlook* are based on the new series of French national accounts (see *Economic Outlook*, No. 4, pp. 99-101), adjusted to the definitions of the *Standardized System*.

There are no official French quarterly national accounts, but the INSEE publishes quarterly data on private consumption on a national accounts basis.

A new index of industrial production has been published in France since the beginning of the year. The main differences compared with the old index (base 1959 = 100) are the following:

— Adoption of 1962 as the base period.
— New weighting according to gross value added at factor cost, bringing the French index into line with the indices used in other EEC countries and facilitating international comparisons.
— Adoption of the National Accounts classification. The index covers roughly the production of the branches 02 to 24 of the French National Accounts.

— Publication of monthly, quarterly and annual indices.
— The new monthly index, published with a lag of about 40 days has a narrower coverage than the old one; it excludes equipment goods with a production period of several months. These are covered by quarterly surveys.
— Results of quarterly production surveys in the branches " Aircraft ", " Non-Electrical Machinery ", " Food Processing " are used to compute a quarterly index which is available with a lag of one quarter.
— An annual index is calculated and published towards June of the following year, once complete information on all industrial branches has become available.
— The annual index has therefore a wider coverage than the quarterly and the monthly indices. On the basis 1,000 for the annual index, the quarterly and the monthly indices have a weighting of respectively 940 and 714.

b) *Germany*

Although the German official national accounts follow the *Standardized System*, the rates of change in constant prices shown in *Economic Outlook* may differ a little from those published officially. The discrepancies result from the use of a 1962 price base in the official calculations whereas the OECD figures are expressed at 1968 prices.

The seasonal adjustments to the official half-yearly national accounts are made by the OECD Secretariat.

c) *Italy*

The definitions used are those of the *Standardized System*. Following improvements in the basic statistics, the annual national accounts published by the Istituto Centrale di Statistica (ISTAT) have been substantially revised for the period 1951-1967.

The annual aggregates for 1968 and 1969 are drawn from the data published by the Institute.

Past half yearly developments are based on seasonally adjusted quarterly national accounts estimated by the Istituto Nazionale per lo Studio della Congiuntura (ISCO), adjusted to fit with the official annual totals.

d) *United Kingdom*

The quarterly national accounts for the United Kingdom are published in *Economic Trends* by the Central Statistical Office and follow the *Standardized System*.

However, since the published expenditure, output and income accounts show different quarter to quarter movements, a weighted average of the three series is used to produce a " compromise estimate " of GDP. Any differences between the compromise and expenditure estimates of GDP are allocated to the expenditure components at the forecasters' discretion. All GDP aggregates published in this issue are based on OECD Secretariat compromise estimates.

e) *United States*

Government fixed investment expenditures (including those of government enterprises) are included in " public consumption " and no allowance is made for depreciation of government fixed capital. The investment figures therefore refer to the private sector only. Official quarterly national accounts are published in the *Survey of Current Business* of the Office of Business Economics of the US Department of Commerce.

f) *Canada*

Official quarterly national accounts appear regularly in the *Canadian Statistical Review* of the Dominion Bureau of Statistics.

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1. OEEC, *A Standardized System of National Accounts*, Paris 1958.

The Canadian national accounting convention includes a separate entry for the "residual error of estimate". This item is included in the Secretariat figures for GNP, which are therefore not the sum of the expenditure components. To avoid distorting the time-path it has been assumed in the forecast that the residual error will remain unchanged from the second half of 1969 onwards.

g) Japan

"Public expenditure" includes expenditure by some public enterprises and "Gross fixed investment" includes work in progress on heavy equipment and on ships for the domestic market which are hence excluded from "changes in stocks".

The quarterly national accounts are published in the *Annual Report on National Accounts* and *National Accounts Statistics Quarterly* of the Economic Planning Agency. However, data in constant prices only become available after a considerable delay. Hence the half-yearly figures shown for the most recent periods are estimates based on official quarterly figures at current prices.

BALANCE OF PAYMENTS DATA

a) Sources

Annual balance of payments statistics in *Economic Outlook* are derived from OECD countries' annual submissions to the Organisation, on the basis of a reporting system common to OECD and the IMF. The concepts and definitions underlying this system are, with few exceptions, those described in the IMF *Balance of Payments Manual* (third edition, July 1961).

Up-to-date information and figures for periods of less than one year are derived from national sources and adjusted by the Department of Economics and Statistics to internationally comparable definitions. Seasonally adjusted series are taken from national sources for Canada, Italy, the United Kingdom, the United States and, for some data, Germany and Japan and estimated by the Department of Economics and Statistics for other countries.

b) Presentation

For analytical purposes, the *Economic Outlook* makes use of a uniform presentation of the balance of payments data of all OECD countries. The analytical groupings adopted are the following:

A) *Trade Balance.* This is defined as merchandise exports less imports fob frontier. It is recorded on a transactions basis, i.e. derived from customs records of merchandise trade, with valuation and coverage adjustments required:

i) to put the figures on to an fob frontier basis;

ii) to ensure that the data reflect as closely as possible the net transfer of ownership of goods to and from abroad by the residents of a country.

B) *Current Balance.* This is the sum of the trade balance, net services and private and official transfers.

C) *Balance on non-monetary transactions.* This covers all current and long-term capital transactions, as well as the short-term capital transactions of the non-monetary sector of the economy (including the balance of unrecorded transactions). It excludes, however, official transactions undertaken for specific balance of payments reasons: such "special transactions" relate, in particular, to the anticipation or postponement of public debt servicing, and changes in official long-term assets and liabilities, such as the extension of special credits to international lending institutions.

D) *Balance on official settlements.* This is the sum of the balance on non-monetary transactions and the net change in the external short-term position of commercial banks. It is financed by:

i) changes in official holdings of gold, currency assets and SDRs;

ii) changes in the net IMF position;

iii) changes in official liabilities to foreign official monetary institutions, and in official short-term assets other than gold and currency;

iv) special transactions, as described above.

c) Relation to national concepts

In a number of cases, the uniform concepts and definitions used by the Department of Economics and Statistics to ensure inter-country comparability differ from those most commonly found in national presentations of balance of payments statistics. The main deviations are listed below:

A) *Trade Balance.* While the trade balance concept appears in all national publications, its definition may differ from that adopted in *Economic Outlook.*

i) In Canada, the trade balance as usually defined excludes inland freight on both imports and exports, and gold production available for export.

ii) In France and Belgium trade as well as other components of the balance of payments are recorded on a settlements basis, i.e. based on foreign exchange rather than customs statistics. The same applies to Italy, although data on a transactions basis are also given in national publications.

iii) In Germany, the trade balance concept which appears most frequently in public discussion is based on the customs figures. It includes, therefore, all freight on imports and excludes the coverage adjustments of customs data to a balance of payments basis.

B) *Current Balance.* Aggregates corresponding to the current balance concept appear in all national presentations, under various denominations. They are identical with the data appearing in *Economic Outlook* subject to the remarks made above about France, Italy and Belgium.

C) *Overall Balance.* Most national presentations emphasize some form of overall balance which either takes the form of a balance of monetary movements (akin to the balance on non-monetary transactions) or a balance on official reserve transactions (akin to the balance on official settlements). The concepts used in major OECD countries are related to those shown in *Economic Outlook* as follows:

i) The overall balance as defined under various denominations in France, Italy, Japan and the United Kingdom corresponds fairly closely to the balance on "non-monetary transactions", except insofar as special transactions are generally not shown below the line. Furthermore, the United Kingdom "balance of monetary movements" treats the recorded short-term capital transactions of the non-monetary sector of the economy as a financing item below the line.

ii) The United States "balance on liquidity basis" corresponds to a balance on non-monetary transactions *with the short-term claims of the banking sector moved above the line* (and without adjustment for special transactions). In addition, United States data have been adjusted by the Department of Economics and Statistics to include as financing items below the line certain obligations of the United States Government to foreign central banks in the form of special Treasury bonds, and purchases of US Government Agency bonds by international institutions, as well as foreign holdings of certificates of deposit in United States commercial banks, which are included above the line in the calculation of the "liquidity balance".

In view of the complexity of these adjustments a detailed reconciliation is shown in the table below

ii) The overall balance as defined in Canada and Germany, and also the " balance on official reserve transactions " which appears in United States publications, approximate the concept of the " balance on official settlements ", except insofar as special transactions are included above the line. In additi∴n, the figures appearing in German publications exclude changes in foreign official holdings of German money market paper which are treated as financing items in *Economic Outlook*.

d)   Inconsistencies in balance of payments recording

A uniform accounting framework does not by itself ensure consistent recording of each transaction by the two participating countries. In fact, transactions of the same type among OECD countries do not sum to zero as theoretically they should. The sum of any particular balance for all OECD countries should therefore not be taken to be the balance of the OECD area with the rest of the world, and developments in this type of aggregate should be interpreted with due regard to the possibility that the net effect of inconsistent recording may vary over time.

The analysis done to date points to the following main sources of inconsistency in OECD countries' balance of payments recording:

A)   On current account, inconsistencies arise in connection with the classification, coverage and valuation of transactions. In particular, the border-line between merchandise and service transactions tends to be blurred in the case of government purchases, while the distinction between services and transfers may be interpreted differently by the two partner countries in the case of workers' remittances; a cross-classification problem also arises from official indemnification payments to private recipients. Discrepancies occur in the estimation of freight on imports (which tends to exceed the corresponding receipts) and in the recording of foreign travel (where receipts tend to exceed payments). Further discrepancies result from the inclusion in some countries' data of re-invested earnings of foreign subsidiaries, which are not covered in most countries' statistics. Some, but by no means all, of these inconsistencies cancel out at the current balance level. For a more detailed

discussion of the various problems arising out of the inconsistent recording of invisible transactions, see the Technical Notes at the end of the article " OECD Invisibles in the 1960's " appearing in the supplement to this issue of *Economic Outlook*.

B)   On capital account, asymmetries result in the first place from the inconsistent recording of current transactions (the net effect of which produces an offsetting entry under unrecorded transactions). Further asymmetries result from the principle of allocating changes in assets and liabilities according to the domestic sector involved, which implies that international transactions between two different sectors (e.g. banks on one side and non-banks on the other) will be reported under different headings by the two partner countries. Inconsistent recording of official settlements will also be reflected in the capital account.

C)   On official settlements account, the sum of all OECD countries' balances will not reflect the change in the area's net official position vis-à-vis the rest of the world, due to:

i)   changes in total official gold holdings resulting from the incorporation of newly mined gold or sales to private users;

ii)   the inclusion in official reserve assets of claims on commercial banks (either in the form of non-reserve currencies or of Euro-dollars) the counterpart of which is not reported as a liability to monetary authorities.

MONETARY DEVELOPMENTS

a)   Monetary aggregates

Table 7 : Except as noted below, the table shows growth rates between last days of the periods indicated, and is based on series published in *International Financial Statistics*. Series from this source have been seasonally adjusted for the OECD Secretariat by the Statistics Bureau of the International Monetary Fund.

For *money* and *money plus quasi-money* in the United States the data are derived from monthly averages of daily figures as published in the *Federal Reserve Bulletin*.

UNITED STATES
Reconciliation between OECD " balance on non-monetary transactions " and US " balance on liquidity basis "

BALANCE ON NON-MONETARY TRANSACTIONS (OECD BASIS)		SOURCES[a]
Less:	Liquification of UK government dollar security portfolio	Secretariat estimates
Plus:	Debt prepayments received and sales of foreign obligations to foreigners	*SCB* Table 1, line 45, plus *SCB* Table 5, line C2
	Waiver of UK debt obligations	*SCB* Text Table A2, line 12
	Long-term bank liabilities	*SCB* Table 1, line 53
	Short-term banking claims	*SCB* Table 1, line 38
	Non-convertible, non-marketable US Treasury securities not associated with specific transactions	*SCB* Table 5, line C4
	Special Treasury securities issued to foreign official agencies in connection with military contracts	*Federal Reserve Bulletin*, International statistics, Table 12
	Non guaranteed US Government agency bonds held by international and regional institutions	*SCB* Text Table A2, line 8
	Special German Government 10-year loan to US Government	*SCB* Table 5, line C3
Equals:	BALANCE ON LIQUIDITY BASIS	*SCB* Table 3, line 1

a)   SCB refers to the US Department of Commerce *Survey of Current Business*, March 1970 (Article on Balance of Payments).

For France, data for all series are based on the publications of the Conseil National du Crédit.

For Japan and Canada, data for *money* and *money plus quasi-money* are derived respectively from the *Bank of Japan Statistics* and the *Bank of Canada Statistical Summary*.

For the definitions of *money, quasi-money* and *domestic credit*, see the sources quoted above.

For Canada, *money* consists of currency outside banks and Canadian dollar demand deposits held by the general public at chartered banks, and *money plus quasi-money* includes other categories of Canadian dollar deposits held by them at the banks, together with the former.

Domestic credit consists essentially of the claims of the Central Bank and deposit banks on the rest of the economy (claims on the central government being recorded net).

b) *Interest rates*

Chart E: The rates or yields shown, except the most recent, are generally those at or near ends of periods indicated. With the exceptions noted below, they are those on Government bonds and 3-months Treasury bills as published in OECD *Main Economic Indicators:* see the notes therein.

Other rates from the same source, and rates derived from various national sources, are:

Canada: Treasury bills and average of 10 industrial bonds—*Bank of Canada Statistical Summary.*

France : Call money on collateral of private bills; Public corporation bonds—Conseil National du Crédit, *Compte Rendu Trimestriel.*

Germany: 3-months interbank money—*Monthly Report of the Deutsche Bundesbank;* 6 per cent Government bonds—*Blick durch die Wirtschaft.*

Italy: 12-months Treasury bills.

Japan: Call money; Telephone and Telegraph bonds—Bank of Japan ; *Economic Statistics Monthly.*

Switzerland: Short-term deposit rate (major banks, Zurich).

United Kingdom: Local authority deposits and Company debenture and loan stocks (20 years to maturity)—*Financial Statistics.*

United States: Treasury bills, Certificates of Deposit, and Government and Corporate (Aaa) bonds—*Federal Reserve Bulletin* and other publications and releases of the Federal Reserve System.

3-months-Euro-dollar deposits in London: Various material prepared within the Federal Reserve System.

$ and DM denominated Eurobonds: Morgan Guaranty Trust Company, *World Financial Markets.*

INTERNATIONAL CAPITAL MOVEMENTS AND INTERNATIONAL LIQUIDITY

a) *International capital movements*

Charts M and N: The interest rate series used for these charts are the same ones as those shown in Chart E.

b) *International liquidity*

For details of OECD definitions of countries' reserve assets and of the adjustments made to the basic figures for analytical purposes, see *Economic Outlook* No. 5, pp. 50-51.

USE OF CURRENT NATIONAL STATISTICS

Unless otherwise stated, all the national statistics quoted in the *Economic Outlook* are taken from the *Main Economic Indicators* published monthly by the OECD (MEI). Starting in September 1967, supplements to MEI have been published

describing in detail the sources and methods of these statistics. The following notes are therefore confined to some methodological points of special importance for the understanding of the text.

Merchandise trade

Except where otherwise indicated, merchandise import and export data are taken from OECD foreign trade statistics as published in MEI and the OECD Foreign Trade Bulletins [1]. Except for Canada, whose trade is recorded fob place of shipment, exports are recorded fob frontier and imports cif frontier. For the United Kingdom and Ireland the export series used include re-exports. United States trade figures are taken from national publications; both import and export data are fob frontier and relate to general trade; exports exclude Department of Defence shipments.

Seasonal adjustments are made by the Department of Economics and Statistics except for Canada, the United Kingdom and the United States [2], where national estimates are used.

Data for total OECD trade by areas differ from the aggregates published in MEI on account of:

i) revisions of back data to adjust for significant changes in coverage, such as the inclusion of under-recorded exports in United Kingdom statistics or of trade in silver in United States data since 1969;

ii) adjustments for inconsistent recording of intra-OECD trade from the import and export sides respectively, arising from differences in timing, coverage and valuation, and inconsistencies in the seasonal adjustment of individual series. These adjustments could only be applied to major aggregates of OECD trade; where relevant, they are signalled by a footnote.

Seasonal adjustment

As noted above, some of the series used have been seasonally adjusted by the Department of Economics and Statistics, notably in the area of foreign trade but also in some cases for industrial production, unemployment, and retail sales. The method used is an OECD variant of U.S. Bureau of the Census Method known as X-10 and programmed for processing by electronic computer. (Further details can be obtained from the OECD Statistics Division). Where unadjusted series published by countries do not take into account the effects of unequal length of month and the incidence of public holidays, a prior calendar adjustment is carried out to eliminate possible distortions in the final seasonally adjusted series. Prior adjustments are also made where major irregularities such as strikes might interfere with the determination of seasonal factors.

COST AND PRICE DEVELOPMENTS

In order to facilitate the interpretation of current cost and price trends the OECD Secretariat has compiled from various sources short-term indicators on wage costs consumer and producer prices. In spite of the efforts made to make such series reasonably comparable there are still considerable divergencies in definitions and statistical methods and the figures can only be taken as indicators of broad orders of magnitude. The series marked (s.a.) are seasonally adjusted.

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1. The OECD publishes three sets of Foreign trade bulletins. *Series A*—overall trade by countries; *Series B*—trade by commodities, analysis by main trading areas; and *Series C*—trade by commodities, detailed analysis in the form of trade matrices.

2. For the United States, data seasonally adjusted by the Department of Economics and Statistics are also published in MEI.

Price indices (Tables 4-5 and appendix tables below)

The coverage and methods of calculation of the *consumer price indices* vary a great deal from country to country. In some countries the weights used to calculate the index are revised fairly frequently on the basis of family expenditure surveys using large samples; and in such cases the index generally moves quite closely in line with the price deflator for private consumption. In some countries however the weighting system relates only to low income groups and/or is seriously out of date; and in such cases the weight given to food is generally high and that given to services low, compared with the pattern of expenditure for private consumption as a whole. Coverage varies considerably and also the degree to which seasonal price changes are eliminated [1].

The lack of uniformity is even more marked when it comes

1. A supplement included in *Main Economic Indicators* every three months shows recent consumer price developments in eight selected countries, analysed in terms of four standard sub-indices: food; all goods less food; rent; and all services less rent.

to *wholesale price indices*. The components of this index are based on *net sector flows* in the United Kingdom, on commodity groupings by *degree of processing* in Canada, USA, and France and on commodity groupings by *end-use* in Italy and Japan. Differences in coverage are particularly important with regard to the degree to which the index covers finished goods in addition to raw materials and semi-finished products. The number of items included varies from a few hundred to several thousand.

Wages (*Country Charts*, Tables 4-5 and appendix tables below)

The wage indices are also not comparable from country to country, not only because of the wide variety of sources and methods of calculations, but also because of important differences in definitions (e.g. hourly rates, hourly earnings, monthly earnings, inclusion or exclusion of fringe benefits, etc.). Apparently, seasonal movements are important in some countries because of the tendency for wage settlements to bunch at the same period of the year. Seasonally adjusted data are used when available.

UNITED STATES
Index, 1966 = 100

		1967	1968	1969	1968 I	1968 II	1969 Q1	1969 Q2	1969 Q3	1969 Q4	1970 Q1	1970 Q2 a
Manufacturing (s.a.)												
	Wages and salaries per employee	103.6	110.9	117.6	108.8	112.7	114.8	116.7	118.6	120.1	120.6	121.5
	Output per employee	99.1	102.1	104.6	101.6	102.5	103.8	104.7	105.0	104.1	103.8	103.6
	Unit labour costs	104.7	108.4	112.7	107.1	110.0	110.7	111.7	113.1	115.6	116.7	116.6
	Ratio of prices to unit labour costs	96.7	95.3	95.0	96.2	94.7	95.4	95.5	95.1	94.1	94.5	94.8
Prices												
	Consumer prices	102.8	107.1	113.0	105.9	108.3	110.2	112.3	113.9	115.4	117.1	117.7
	Goods less food	102.5	106.3	110.7	105.2	107.4	108.7	110.3	111.1	112.7	113.0	114.2
	Wholesale prices	100.2	102.7	106.6	102.1	103.3	105.0	106.3	107.0	108.1	109.8	110.1
	Manufactured goods	101.2	104.1	107.9	103.4	104.9	106.0	107.2	108.4	109.9	111.3	112.5

a) April.
Sources: *Survey of Current Business, Economic Indicators* and *Business Conditions Digest*.

CANADA
Index, 1966 = 100

		1967	1968	1969	1968 I	1968 II	1969 Q1	1969 Q2	1969 Q3	1969 Q4	1970 Q1
Manufacturing (s.a.)											
	Wages and salaries	106.1	113.1	124.7	110.4	115.8	121.4	124.2	125.4	127.9	..
	Output	100.3	105.4	111.2	103.4	107.4	110.9	111.3	110.9	111.8	111.6
	Unit wage and salary costs	105.6	107.2	112.1	106.7	107.8	109.3	111.6	113.1	114.6	..
Prices											
	Consumer prices	103.5	107.8	112.7	106.8	108.9	110.3	112.4	113.7	114.4	115.5
	Wholesale prices	101.8	104.0	108.8	103.3	104.6	107.5	109.1	109.0	109.6	111.3
	Manufactured goods	102.0	104.8	109.7	103.7	105.8	108.8	110.1	109.6	110.2	111.3

Source: *Bank of Canada Statistical Summary.*

JAPAN
Index, 1966 = 100

		1967	1968	1969	1968 I	1968 II	1969 Q1	1969 Q2	1969 Q3	1969 Q4	1970 Q1	1970 Q2
Manufacturing (s.a.)												
	Monthly earnings per regular worker	113.3	130.7	152.0	126.3	135.1	139.5	149.9	156.8	161.9	161.9	..
	Production per regular worker	117.4	134.5	153.7	129.4	139.6	142.7	151.4	156.9	163.7	165.5	..
	Unit wage and salary costs	96.5	97.2	98.9	97.6	96.8	97.8	99.0	99.9	98.9	97.8	..
Prices												
	Consumer prices	104.0	109.6	115.3	108.6	110.6	112.1	114.2	116.7	118.2	121.3	123.5c
	Wholesale prices	101.9	102.7	104.9	102.7	102.7	103.3	104.2	105.3	106.7	108.2	109.1c
	Producer goods *a*	102.2	101.8	104.0	102.3	101.4	101.9	103.1	104.5	106.4	108.5	109.8c
	Investment goods *b*	100.7	101.5	102.0	101.4	101.7	101.7	101.7	102.0	102.5	102.8	103.3c

a) Including raw materials, fuels and energy, construction materials and semi-finished goods.
b) Manufactured goods.
c) April.
Sources: *Basic Data for Economic Analysis* (Bank of Japan); *Economic Statistics Monthly* (Bank of Japan).

FRANCE
Index, 1966 = 100

	1967	1968	1969	1968 I	1968 II	1969 Q1	1969 Q2	1969 Q3	1969 Q4	1970 Q1
Manufacturing										
Hourly rates a	106.0	119.1	132.6	110.0	123.8	126.9	129.4	132.4	135.3	138.8
Production (s.a.)	102.5	106.8	120.3	99.6	114.4	117.8	120.3	121.2	122.9	126.9
Unit wage costs (s.a.) b	101	106	107	109	103	105	106	108	109	110
Prices										
Consumer prices	102.7	107.4	113.9	106.0	108.8	111.7	113.2	114.5	116.2	118.1
Wholesale prices	99.3	100.8	109.4	99.4	102.2	106.5	108.0	109.1	114.1	118.0
Intermediate goods	99.3	97.4	107.1	96.1	98.7	103.6	105.5	107.7	111.5	114.1

a) Survey relating to the last complete week of preceding quarter; annual figures are centred by averaging data from January of each year to January of following year.
Source: INSEE, Bulletin Mensuel de Statistique.

b) A crude measure of unit wage costs (excluding salaries) has been derived using hourly wage rates, employment and hours worked, divided by the production index. The result has been adjusted for wage drift; employment and hours worked are seasonally adjusted.

GERMANY
Index, 1966 = 100

	1967	1968	1969	1968 I	1968 II	1969 Q1	1969 Q2	1969 Q3	1969 Q4	1970 Q1
Industry (s.a.) a										
Wages and salaries per manhour	105.1	111.5	122.6	109.3	113.7	117.1	119.9	122.8	130.5	136.9
Production per manhour	105.4	115.3	123.6	112.9	117.7	121.9	122.7	123.5	126.7	125.9
Unit wage and salary costs	99.5	96.8	98.8	96.8	96.6	96.6	97.5	98.3	102.7	108.8
Prices										
Consumer prices	101.5	103.3	106.0	103.0	103.6	105.4	105.9	106.0	106.8	109.1
Industrial producer prices	99.1	93.8b	96.1	93.9	93.8	94.7	95.2	96.1	98.2	100.5

a) Excluding public utilities and building and civil engineering.
Sources: Statistical Supplement of the Bundesbank and Wirtschaft und Statistik.

b) After the change-over to the value added tax system (TVA) as from January, 1968, industrial producer prices exclude indirect taxation. Hence, the price index fell by 4.8 per cent between the 4th quarter 1967 and the 1st quarter 1968. Consumer prices were slightly raised by the change-over to TVA.

UNITED KINGDOM
Index, 1966 = 100

	1967	1968	1969	1968 I	1968 II	1969 Q1	1969 Q2	1969 Q3	1969 Q4	1970 Q1	1970 Q2
Whole economy											
Hourly wage rates	104.0	111.1	117.2	110.0	112.2	115.5	116.1	117.4	119.6	124.0	..
Income from employment per head (s.a.)a	105.3	108.5	..	107.8	109.5	110.7	112.2	113.1	..	..	..
Real GDP per employee (s.a.)	103.1	107.8	..	106.9	108.8	108.6	110.4	110.6	..	..	..
Labour costs per unit of output (s.a.)	102.5	106.3	..	105.0	107.6	109.7	110.6	113.1	..	..	..
Manufacturing											
Hourly wage rates	104.4	112.5	118.9	111.6	113.4	117.4	117.9	119.1	121.2	125.6	..
Wage and salary bill	100.5	107.9	117.0	105.9	109.9	113.7	115.6	117.2	121.5	124.2e	..
Output (s.a.)	100.0	106.3	110.0	104.4	108.2	108.2	110.1	110.5	111.2	110.4e	..
Output per employee (s.a.)	102.9	110.4	113.9	106.8	112.2	112.0	113.8	114.5	115.1	114.6e	..
Employment (s.a.)	97.2	96.3	96.6	96.1	96.4	96.6	96.7	96.5	96.6	96.3e	..
Unit wage costs *	100.6	101.5	106.4	101.4	101.6	105.1	105.0	106.1	109.3	112.5e	..
Unit wage costs b	101.4	102.8	..	..	..	..	..	..	..	..	..
Unit labour costs b	97.6	100.3	..	..	..	..	..	..	..	..	..
Prices											
Consumer prices	102.5	107.3	113.2	106.0	108.6	111.4	113.2	113.3	114.8	117.0	119.4f
Goods less food	101.8	107.5	112.1	106.0	109.0	110.9	111.8	112.0	113.8	115.7	..
Food	102.1	105.9	113.1	105.0	106.7	110.9	113.5	113.4	114.5	117.0	119.3f
Wholesale prices											
Manufactured goods excl. food c	100.8	104.7	108.0	104.3	105.1	106.3	107.2	108.5	110.0	112.2	113.3f
Raw materials excl. food d	98.4	109.4	113.5	110.0	108.9	111.1	112.7	114.5	115.5	118.0	118.4f

a) National accounts definition.
b) As published by the Employment and Productivity Gazette.
c) Home market sales.
d) For use in manufacturing.
e) January-February.
f) April.
* OECD Secretariat estimate has been calculated from average earnings of all employees plus employment effect divided by output.

Sources: Monthly Digest of Statistics and Employment and Productivity Gazette.

ITALY

Index, 1966 = 100

	1967	1968	1969	1968 I	1968 II	1969 Q1	1969 Q2	1969 Q3	1969 Q4	1970 Q1
Manufacturing										
Hourly wage rates	105.2	109.0	117.2	108.3	109.6	111.6	116.6	119.3	121.2	136.3
Number of wage earners	103.5	105.3	108.5	104.0	106.5	106.8	108.4	108.8	109.9	110.3
Production (s.a.)	108.3	115.1	119.0	113.2	117.1	121.0	123.2	121.1	110.5	127.4
Unit labour costs (s.a.)	104.1	103.1	107.5	104.3	102.3	100.6	106.3	107.3	116.6	114.1
Prices										
Consumer prices	103.2	104.6	107.3	104.5	104.7	105.6	106.7	107.9	109.0	110.7
Wholesale prices:										
Investment goods	100.0	101.3	108.0	101.4	101.1	102.4	105.6	110.6	113.4	118.9
Consumer goods	99.5	99.3	103.2	99.4	99.2	101.0	102.2	103.7	106.0	108.2

Sources: *Banca d'Italia Annual Report for 1969 and Main Economic Indicators,* OECD.