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news items

STATISTICS ON THE BUSINESS CYCLE IN BUILDING AND CIVIL ENGINEERING

Council Directive N° 78/166/EEC of 13 February 1978

On 13 February 1978 the Council of the European Communities issued a Directive concerning coordinated statistics on the business cycle in building and civil engineering. This Directive had been drawn up by the SOEC in collaboration with the experts of the Working Party on Building and Civil Engineering Statistics and may be regarded as complementary to Directive N° 72/211/EEC of 30 May 1972 concerning coordinated statistics on the business cycle in mining and quarrying and in the manufacturing industries.

Building and civil engineering may in several respects be regarded as the most important industrial sector. It accounts for over 18 % of employees in all industrial branches in the Community, represents almost 60 % of gross fixed capital formation and uses large quantities of materials produced by several branches of manufacturing industry. It has a marked influence on general economic stability and is itself sensitive to business cycle fluctuations. It thus occupies a key position within the economic structure particularly as it is the general practice for the various countries to regulate activity in this sector by means of public investment in buildings and civil engineering works. For all these reasons it is true to say that the new Directive finally makes it possible to fill a major gap in the Community system of statistics on the business cycle.

The sector in question was provisionally excluded from the scope of the enquiries covered by the 1972 Directive because it differs from other industrial activities by virtue of certain distinctive features; it was therefore necessary to give detailed consideration to the validity of certain of the data required under the terms of the 1972 Directive as business cycle indicators for building and civil engineering, and of certain information from administrative sources, such as data on numbers of building permits granted.

The two Directives provide for the data to be collected on a monthly, or initially at least a quarterly basis, for the calculation of industrial production indices and on orders received, number of employees (specifying the number of manual workers), gross wages and salaries and number of hours worked. The 1972 Directive also makes provision for data on turnover, but this variable could not be included in the building and civil engineering Directive as the experts of several Member States argued that turnover is subject to marked seasonal variations which do not necessarily reflect the volume of activity, and in particular that there is a substantial accumulation of invoices at the end of the year. On the other hand, the Directive of 13 February 1978 requires the provision of monthly data on a variable which is typical for the building industry, viz. the number of building permits granted for residential and non-residential buildings, with an indication of certain characteristics of the buildings to be constructed.

There is general agreement on the value of this last variable as a forward indicator which makes it possible to forecast the level of constructional activity in the building sub-sector. As, however, statistics on building permits are based on administrative records and as the regulations and administrative practices governing the issue and duration of permits in two or three Member States do not permit the compilation of such statistics, the data in question will not be available for all the Member States for some years to come.

The same applies to the variable "number of hours worked", which most of the Member States also regard as a very valid indicator and which certain of them even use, with certain modifications, as the basis for the industrial production index. The main difficulty here lies in the fact that the building and civil engineering sectors of certain countries exhibit a rather distinctive employment structure characterized by a fairly high but fluctuating number of "lump" or self-employed workers who are not attached to any undertaking and cannot readily be included within the scope of the existing statistical enquiries. In these countries, the number of hours worked is thus not a valid indicator of the volume of work done, at least under present circumstances.

The data required under the terms of the Directive are to be collected for the first time not later than in the fourth quarter after the notification of the Directive to the Member States. In order, however, to minimize the difficulties involved in introducing the necessary enquiry or extending existing national enquiries to comply with the Directive, it has been necessary to allow a period of two to four years for the Member States to cover all the variables breakdowns, and especially the breakdown into building and civil engineering sub-sectors.

INITIAL EXPERIENCE IN THE PRODUCTION OF EC RAW MATERIALS BALANCES

As already announced (in EUROSTAT News 3/4-1977, p. 8) the first statistics required for drawing up raw materials balances for 1975, for the Community and the individual Member States, were available at the end of 1977. At the second meeting of the SOEC Working Party on Raw Material Balances (in October 1977) these provisional results were discussed and, at the Commission's suggestion, the following raw materials were added to those already covered : antimony, zirconium, mercury and fluorspar. This brings the number of raw materials on which data are collected to 23. At the meeting of D.G. III Working Party on the Supply of Raw Materials in the Community (on 16 March 1978) it was further decided that the following non-mineral raw materials should also be included : tropical wood, paper and paper pulp, natural rubber, leather and skins.

We plan to have revised the raw materials balances for 1975 and completed those for 1976 by mid-1978. So far the SOEC's examination of the figures has indicated that :

1. for some raw materials, viz. aluminium, lead, copper, zinc, tin and iron, enough data are available for us to draw up both overall balances (on the basis of the metal content) and sub-balances (for various stages of processing and fabrication);
2. for the other 11 metallic raw materials, there are still fairly large gaps in certain countries' data for the sub-balances. For the overall balances, the results available would be more satisfactory if indications of changes in stocks and domestic recovery were initially excluded;
3. as for the two non-metallic raw materials, namely phosphates and cotton, there are some gaps in the data on phosphates, but filling in the cotton balances is less problematic.

All in all, it can be stated that so far between half and two-thirds of the data collection programme for 1975 has been completed, but that the remaining part of the programme will certainly raise particular problems.

The outcome shows that (despite the excellent results achieved at short notice) considerable efforts will have to be made by the national services to correct and supplement the available raw materials tables in the second stage of work. The main problem is still that of obtaining confidential information and it is hoped that individual solutions can be found by direct contact with the firms concerned.

A particularly important result of our work to date has been the finding that only the systematic and consistent coverage of raw materials by this new system of balances shows up any inadequacies, contradictions or even mistakes in the raw materials statistics, and also provides a constructive method for filling in gaps in the statistics. The removal of these discrepancies will also help to improve official figures and data series forwarded to other international organizations.

LABOUR COSTS IN INDUSTRY IN 1975

The detailed results of the Community survey on labour costs in industry in 1975 are now all available at Eurostat (summary results were already published in "Hourly earnings - Hours of work n° 2/1977", EUROSTAT, Yellow series: Social statistics). The more important trends shown by the detailed results are as follows :

In almost every country indirect costs have risen faster than direct wages

Since the previous survey, the proportion of labour costs taken up by indirect costs has increased in almost every country by about 3 %. This rise is mainly due to an increase in the amount of statutory social security contributions and in payments for days not worked.

The relative significance of indirect costs varies widely from one country to another; they represent 9 % of labour costs in Denmark, between 20 and 24 % in Ireland and the United Kingdom, between 33 and 37 % in Luxembourg and the Federal Republic of Germany, 42 % in France, the Netherlands and Belgium, and 50 % in Italy. In particular this explains why direct wages in a given country may be higher than in another while its labour costs remain lower (as, for example, Denmark compared with the Netherlands, or the United Kingdom compared with Italy).

Reduction in the average number of hours worked

The results of the survey confirm the trend observed in almost every country towards a reduction in the average number of hours worked annually by industrial workers; depending on the country concerned, these have been reduced by between 30 and 200 hours since 1972/1973, which in approximate terms represents a drop of between 2 % (in Denmark) and 12 % (in Belgium).

No appreciable reduction in disparities in labour costs between the various industrial activities

In general, labour costs are higher in the mining and durable goods industries than in the industries producing consumer goods.

The disparity between the highest and lowest costs in the various industrial activities has remained constant in France and Belgium (more than 60 %), the United Kingdom (59 %) and the Federal Republic of Germany (52 %), whilst in Italy and the Netherlands it has dropped from more than 60 % to about 53 %; the smallest difference is found in Denmark (39 %).

Differences in the level of labour costs between Member States are growing *

As in the previous survey carried out in 1972/1973, Member States fall into three groups :

- the Federal Republic of Germany, the Benelux countries and Denmark, where labour costs are highest ;
- France and Italy follow with costs approximately 30 % lower ;
- finally, costs in the United Kingdom and Ireland are about 50 % lower.

However, disparities between countries have increased somewhat, both between these three groups and within the leading group itself ; thus average costs in the Netherlands, Denmark and Belgium have risen above those in the Federal Republic of Germany.

* Comparison of the level of labour costs between countries should be made with caution : the statistics for example should be interpreted in conjunction with statistics of labour productivity, capital intensity, financing of social protection, exchange rates, foreign trade and so on.

The Community Survey on Labour Costs in Industry in 1975

The survey was carried out simultaneously in the nine Member States and used identical methods and definitions. It covered some 350,000 industrial undertakings with at least ten employees, altogether employing some 28 million wage earners.

This survey, the fourth of a series which began in 1966, normally takes place every three years ; the next one will therefore cover the year 1978.

For the purposes of this survey, labour costs were defined as including the following costs borne by employers : direct wages, bonuses and allowances, holiday pay, employers' social security contributions (both statutory and non-statutory), benefits in kind and various other items of expenditure of a social nature connected with the employment of labour (vocational training, transport, etc.).

The final results of the survey, including details on the level of labour costs, their structure (proportions taken up by direct wages and by various associated costs), the numbers of wage-earners concerned and the average annual working hours, will be published during the year. These results will cover each industrial activity and will be broken down by size of undertaking and by region.

Labour Costs in Industry in 1975 (1)

	FR Deutsch- land	France	Italia	Neder- land	Belgique België	Luxem- bourg	United Kingdom	Ireland (2)	Denmark (3)
	Labour costs in national currency								
	DM	FF	Lit	F1	Fb	Flx	£	£	Dkr
Hourly labour costs (manual workers)	15,96	19,83	3 091	.	249,15	227,72	1,56	1,38	36,52
Monthly labour costs (non manual workers)	3 278	5 581	887 000	.	53 943	57 327	317	307	7 568
Hourly labour costs (manual + non manual workers)	17,57	24,44	3 400	20,21	271,55	255,75	1,69	1,51	40,50
	Labour costs in EUC (5)								
Hourly labour costs (manual workers)	5,23	3,73	3,82	.	5,47	5,00	2,76	2,46	5,15
Monthly labour costs (non manual workers)	1 075	1 049	845	.	1 187	1 258	566	548	1 065
Hourly labour costs (manual + non manual workers)	5,76	4,59	4,20	6,45	5,96	5,61	3,02	2,70	5,74
	Country with the highest costs = 100								
Hourly labour costs (manual + non manual workers)	89	71	65	100	92	87	47	42	79
	Proportion of manual workers								
% of all employees	73	70	82	.	60	81	73	77	73
	Hours worked during the year								
Hours worked per manual worker	1 680	1 362	1 521	.	1 550	1 768	1 540	2 035	1 659

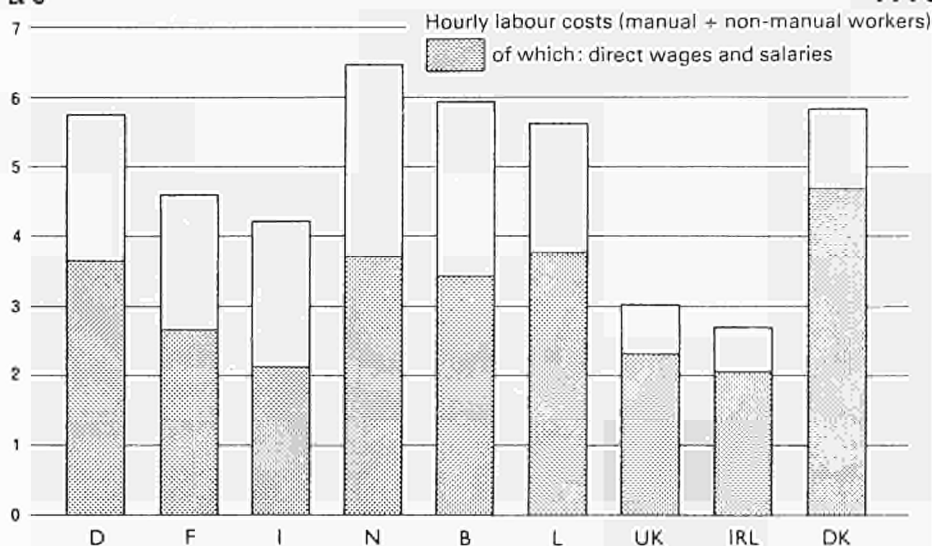
(1) Mining and quarrying, manufacturing industries, building and civil engineering.

(2) Excl. building and civil engineering.

(3) 1 EUC = 3,04935 DM; 5,31923 FF; 809,545 Lit; 3,13490 F1; 45,5690 Fb/Flx; 0,560026 £; 7,1266 Dkr.

UC

1975



Structure of Labour Costs in Industry in 1975

as % of total cost:

Nature of expenditure	BR	France	Italy	Neder-	Belgique	Luxem-	United	Ireland	Danmark
	Deutsch-			land	België	bourg	Kingdom	(1)	(1)
	Manual + non manual workers								
1 Direct remuneration + regular bonuses (2)	63,25	58,05	50,12	57,54	57,82	67,52	76,35	77,12	81,37
2 Other bonuses and gratuities	4,24	3,80	7,57	3,01	4,55	6,06	0,63	0,89	5,10
3 Payments for days not worked	12,55	9,31	11,61	13,32	12,95	9,13	8,75	7,73	11,13
4 Social security costs :									
- statutory social welfare costs	16,03	18,41	27,64	17,01	21,39	12,89	6,85	5,51	2,86
- customary, contractual or voluntary costs	1,56	6,00	0,60	6,24	1,26	1,11	4,83	4,94	1,92
- total	17,59	24,42	28,24	23,24	22,65	14,01	11,68	10,45	4,78
5 Other expenditure (3)	2,36	4,39	2,06	2,89	2,03	3,29	2,39	3,82	1,62
6 Total costs	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00

(1) Excl. NACE 50.

(2) Incl. payments to workers' savings schemes.

(3) Benefits in kind, other expenditure of a social nature, vocational training, taxes and subsidies.

PRIMARY ENERGY PRODUCTION IN 1977

In 1977 developments in the production of primary energy began to depart quite significantly from previous trends. The change is particularly marked in terms of the structure of production as crude oil represents 11 % of Community production of primary energy sources and its importance will increase rapidly in the coming years.

The production trends for the various sources of energy differ quite considerably, largely as a result of basic tendencies and to a lesser extent as a result of contingent factors.

Despite a drop of about 5 million tep, coal production declined slightly less rapidly than in recent years; the drop in production was 3 % as opposed to an average of about 4 % since 1971.

Crude oil production increased sharply from 21 to 47 million tonnes as the new British fields in the North Sea came on stream.

The availability of greater quantities of imported natural gas from third-party countries, and especially from the USSR and Norway, led Community producers to reduce the rate of extraction. Thus, for the first time, production dropped in Italy and in the Netherlands, with a consequent slight decrease in Community production.

The sharp increase in the generation of hydroelectric power is not the result of additional plant but a favourable weather conditions, especially in comparison with the 1976 drought.

Production of nuclear energy has also risen considerably (+20 %) as a result of the increase in the number of nuclear power stations in the Federal Republic of Germany.

Total production of primary energy increased considerably in the United Kingdom because of oil and in France because of nuclear energy and hydroelectricity while there was a slight drop in the Federal Republic of Germany and the Netherlands.

PRIMARY ENERGY PRODUCTION

millions of tonnes of oil equivalent

		EUR - 9		BH	FINANCE	ITALIA	NEDERLAND	BELGIQUE	LUXEMBOURG	UNITED	IRELAND	DANMARK
				DEUTSCHLAND				BELGIE		KINGDOM		
Hard coal	1977	153,7	36 %	59,7	13,5	0,0	-	4,4	-	76,1	0,0	-
	1976	158,4	40 %	63,0	13,9	0,0	-	4,5	-	77,0	0,0	-
	1977/76	- 3,0 %		- 5,2 %	- 2,8 %			- 2,2 %		- 1,2 %		
Brown coal	1977	25,8	6 %	23,6	0,9	0,3	-	-	-	-	1,0 (*)	-
	1976	28,1	7 %	25,9	0,9	0,3	-	-	-	-	1,0	-
	1977/76	- 8,2 %		- 8,9 %	- 3,7 %	- 11,2 %						
Crude oil	1977	47,3	11 %	5,4	1,0	1,0	1,6	-	-	37,8	-	0,5
	1976	20,9	5 %	5,5	1,1	1,1	1,5	-	-	11,5	-	0,2
	1977/76	+ 126,3 %		- 1,9 %	- 9,1 %	- 9,1 %	+ 6,7 %			+ 228,7 %		
Natural gas	1977	141,1	33 %	15,2	6,4	11,0	73,6	-	-	34,9	-	-
	1976	141,9	36 %	14,8	6,0	13,1	74,9	-	-	33,1	-	-
	1977/76	- 0,6 %		+ 2,7 %	+ 6,7 %	- 16,0 %	- 1,7 %			+ 5,4 %		
Electrical, hydro-electrical and geothermal energy	1977	33,5	8 %	3,7	16,8	11,8	-	0,0	0,0	1,0	0,2	0,0
	1976	23,8	6 %	2,9	10,7	9,1	-	0,0	0,0	0,9	0,2	0,0
	1977/76	+ 40,9 %		+ 28,7 %	+ 56,8 %	+ 29,0 %				+ 8,6 %		
Nuclear electrical energy	1977	26,2	6 %	8,2	4,0	0,7	0,8	2,7	-	9,8	-	-
	1976	21,8	5 %	5,5	3,5	0,8	0,9	2,2	-	8,9	-	-
	1977/76	+ 20,2 %		+ 48,0 %	+ 14,4 %	- 11,1 %	- 4,2 %	+ 19,4 %		+ 10,4 %		
TOTAL PRIMARY ENERGY (**)	1977	431,0	100 %	117,0	43,5	25,1	76,4	7,1	0,0	160,2	1,2	0,5
	1976	397,6	100 %	118,6	36,9	24,7	77,6	6,8	0,0	131,6	1,2	0,2
	1977/76	+ 8,4 %		- 1,3 %	+ 17,9 %	+ 1,6 %	- 1,6 %	+ 4,4 %		+ 21,7 %		

(*) peat

(**) including other fuels and primary petroleum products

NOTICE FOR OUR READERS

The 1977 edition of the "Yearbook of social statistics" has been dropped

We should like to inform all of our interested readers that the 1977 edition of the "Yearbook of social statistics" has been dropped.

In fact, a volume of "Social indicators" was published for the first time in 1977 as part of the series "Social statistics". This publication relates to all areas of social statistics. Moreover the detailed basic data appear regularly in the annual publications on population, employment, education and social accounts.



publications

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Published :

Special publications and series :

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Structure of earnings in wholesale and retail distribution, banking and insurance in 1974, Vol. 1-4, Vol. 6	31
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ANNUAL PUBLICATIONS

Purple series : Balances of payments - Geographical breakdown

ISBN 92-825-0126-4	DA/NL	Price : UKL	11
ISBN 92-825-0127-2	DE/IT	DKR	122,20
ISBN 92-825-0128-0	EN/FR	USD	21.50
		BFR	700

Approximately 300 pages Format A 4

Editions DA/NL, DE/IT, EN/FR to be published in May 1978

This volume presents the most recent available data on the geographical breakdown of the balance of payments of each European Community country and of the United States and Japan.

The balances of the European Community countries are also given, where possible, in the form of totals relating to the nine member states (EUR 9) as a whole.

The data are expressed in millions of EUC, the new unit of account of the European Community intended to replace progressively the various units used by the different Community institutions. They are presented according to the EUROSTAT balance of payments and geographical breakdown schemes, and cover the period 1972 to 1976. The figures are preceded by a commentary on their development during 1976 and by two notes concerning, respectively, the drawing up of a consolidated balance of payments of the European Community countries and the balance of payments of the Community institutions.

Tax statistics 1970-1976

ISBN 92-825-0143-4	Price : UKL	6.30
	DKR	70
	USD	12.30
	BFR	400

Approximately 150 pages Format A 4

Multilingual edition to be published in May 1978

Detailed statistics on taxes and social contributions levied in the member states.

The various taxes are classified according to their economic nature into three categories (ordinary taxes on income and inheritance, taxes on capital and taxes relating to production and imports) and according to the collecting body. This classification is based on the concepts and definitions of the ESA (European System of Integrated Economic Accounts).

Land use and production 1970-1976

ISBN 92-825-0144-2

Price : UKL 6.30
DKR 70
USD 12.25
BFR 400

Approximately 110 pages Format A 4

Multilingual edition to be published in May 1978

This publication updates the statistical series published in the green series 1976 "Land use and production".

Part I concerning "Land use" contains results for EUR 9 for the years 1958, 1965 and 1974 to 1976.

To part II concerning the "production of cereals, dried pulses, root and industrial crops" in EUR 9 will be added statistics on production of green forage. The publication contains data for three years (1974 to 1976) except for the data on green forage which is for the years 1970 to 1976.

Prices of fruit, vegetables and potatoes

ISBN 92-825-0081-0

Price : UKL 3.20
DKR 34
USD 5.60
BFR 200

130 pages Format A 4

Multilingual edition published in March 1978

This edition is bringing up to date the prices published together with their descriptions in the special issue "Agricultural prices - Fruit, vegetables and potatoes" S 8/1973.

The new edition contains the definite prices of fruit, vegetables and potatoes for 1975 and provisional figures for 1976.

Blue series : Annual investments in fixed assets 1973-1975

ISBN 92-825-0135-3

Price : UKL 7.20
DKR 79,20
USD 14
BFR 450

224 pages Format A 4

Trilingual edition DE/EN/FR published in March 1978

The publication contains for the nine Member States and for the period 1973 to 1975 the detailed results of the coordinated annual inquiry into capital investments in industry carried out in accordance with a Directive issued by the Council of the European Economic Community on 30 July 1964.

Iron and steel - Yearbook 1977

ISBN 92-825-0136-1

Price : UKL 10
DKR 105,60
USD 19
BFR 600

Approximately 350 pages Format A 4

Multilingual edition to be published in April 1978

The first edition of the revised "Iron and Steel Yearbook 1977" is now available, forming part of the new programme of statistical publications covering the iron and steel industry (see EUROSTAT News 3/4 - 1977).

The revised yearbook - which has been made clearer and more concise in both form and content - will in the future appear annually. Basically it contains annual data covering the five most recent years for which data are available as well as comparable data, using 1960 as the base. It thus complements the "Monthly Bulletin of Iron and Steel Statistics", which appeared for the first time in September 1977 and is intended to supply the most up-to-date data available short-term economic developments in the iron and steel sectors. The "Quarterly Iron and Steel Bulletin" has likewise been revamped and considerably shortened; it is intended to fill the gap between the two major iron and steel statistical publications. The series is complemented by the yearbook "External Trade - ECSC Products".

The new yearbook has been made considerably shorter than the previous edition, and this despite the fact that a number of new tables have been incorporated, in particular tables illustrating the importance of the iron and steel industry in the economy as a whole, together with purely analytical tables. This was achieved by a measure of coordination with other publications to avoid duplication, and by cutting down on the number of years covered.

The yearbook contains nine chapters :

1. Main summary tables
2. Basic production factors (employment, structure of enterprises and works, raw materials supplies)
3. Production
4. Deliveries by works, receipts
5. External trade
6. Steel consumption
7. Investments
8. Prices, average values and labour costs
9. Levy.

Ruby series : Overall energy balance-sheets 1963-1976

ISBN 92-825-0123-X

Price : UKL 3.20
DKR 34
USD 5.60
BFR 200

70 pages

Format A 4

Edition FR

published in February 1978

Second edition 1977

This brochure is drawn up in accordance with the layout and methodology developed by the Statistical Office of the European Communities. It contains energy balance-sheets in tonnes coal equivalent for each of the Member States and for the Community.

The presentation adopted is that of unified balance sheets and balance-sheets broken down by product. Data are provided for the years 1963, 70, 71, 72, 73, 74 and 75, with two growth rate series.

This publication is available in French only.

Olive series : Statistical yearbook : ACP - 1970-1976

ISBN 92-825-0154-X

Price : UKL 4.80
DKR 49,20
USD 8.25
BFR 300

136 pages Format A 4

Edition EN/FR to be published in April 1978

This yearbook presents :

- 1) For the ACP states, Maghreb, Mashrek
Tables for each country drawn from the available demographic and economic data, each table covering a particular sector (balance of payments, public finance ...).
- 2) For all developing countries
Tables permitting comparison of demographic and economic data from the different countries (ACP states, Maghreb, Maschrek and other developing countries).

The statistics in this publication relate to the period 1970-1976.

Yearbook of foreign trade statistics for the ACP States 1968-1976

ISBN 92-825-0082-9

Price : UKL 9.60
DKR 105,60
USD 18.60
BFR 600

890 pages Format A 4

Edition EN/FR published in March 1978

This publication presents the most recent data available to the Statistical Office of the European Communities on the external trade of the ACP States and includes time series dating back to 1968 for certain countries.

The Yearbook contains statistics for ACP States in West, Central and East Africa, the Caribbean and the Pacific.

Trade is analysed by major products and product groups, with a variety of tables reflecting the trends in the principal raw material and primary product exports of the ACP countries and their main destinations. This changes which have taken place in the pattern of imports into these countries are also shown by major product group (investment goods, consumer goods, etc.) and by country of origin.

From the contents of this publication it is possible to extract a wide variety of detailed statistical information.

SPECIAL PUBLICATIONS AND SERIES

Orange series : Confidentiality and business statistics in the European Community

Price :	UKL	3.20
	DKR	31,30
	UKL	5.40
	BFR	200

147 pages Format C 5

Editions DA, DE, EN, FR, IT, NL

Published : DE, EN, FR, DA, IT

It is the constant concern of the official statistical services to safeguard the confidentiality of the information with which they are entrusted. Each Member Country has its own customary procedures taking the form, in many cases, of national laws defining the rules of confidentiality applicable to business statistics.

These rules, which were elaborated in a national context, are now applied to Community statistics where they have led, in combination, to a far more drastic shrinkage of information than that which they cause at a national level. At the same time, in industrial circles in every Member Country, there is evident reluctance to release more information than is released by the others, apprehensions conducive to the development of a restrictive approach.

For that reason, the Statistical Office of the European Communities has decided, in agreement with the national statistical services, to examine this problem with a view to its solution. This report is a major contribution to such an undertaking. Its preparation was rendered possible by the collaboration of the various National Statistical Institutes, which not only provided the author with the necessary information regarding the laws and practices relating to the confidentiality of business statistics in their respective countries but also submitted their comments on the first version of the report. Nevertheless, as the author himself has emphasized in his preface, the opinions expressed in this document are strictly his own, and are in no way to be taken as those of the national statistical services or of the Commission of the European Communities.

By circulating this report, the Statistical Office of the European Communities hopes to elicit the reactions and opinions of its readers, including in particular the organisations representing the producers and users of business statistics.

Purple series : Input-output tables 1970

Price :

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UKL	30.50	UKL 4.25
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Published :

- Volume 1 - Methodology 1970-1975 : 38 pages
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- Volume 2 - United Kingdom 1970 : 121 pages
Edition EN/FR
- Volume 3 - Nederland 1970 : 119 pages
Edition NL/FR
- Volume 4 - Italia 1970 : 119 pages
Edition IT/FR
- Volume 5 - België/Belgique 1970 : 120 pages
Edition NL/FR
- Volume 6 - BR Deutschland 1970 : 124 pages
Edition DE/FR

Volume 1 of this series describes the methodology established by the SOEC for the construction of input-output tables calculated, from the year 1970 on, according to Community rules. A general description of the input-output table is given, with some detail on its various components and their relationships. The classifications and the accounting rules which are used are defined by a number of references to the European System of integrated economic Accounts (ESA). The last chapter shows a few examples of the way in which the tables can be used for economic analysis.

Each of the volumes 2 to 7 deals with the input-output table of one country (United Kingdom, the Netherlands, Italy, Belgium, Germany, France). In each volume, the first part describes the problems encountered when using the Community classifications and methods and the adjustments made in order to improve comparability from one country to another. A short description of the table is also given. The second part is composed of the input-output table expressed in units of account EUR, tables of direct coefficients (vertical and horizontal) and several tables of indirect coefficients (inverse matrix, content of imports, content of primary inputs in the final uses).

Volume 8 will put together the tables for the countries and the one for the Community. Volume 9 will present the corresponding coefficient tables and will include a comparative analysis of the economic structure of the various countries.

Yellow series : Censuses of population in Community countries 1968-1971

ISBN 92-825-0145-0

Price :	UKL	7.90
	DKR	87.50
	USD	15.30
	BFR	500

Approximately 130 pages Format A 4

Multilingual edition to be published in May 1978

Each of the countries of Europe-9 carried out a census of population during the period 1 March 1968 to 24 October 1971. The presentation of the results in the various national census reports differs very much from country to country, making comparisons difficult. Partly on the basis of special returns provided by the national census offices and partly using their published material, the SOEC has prepared the present volume which sets out the principal census results in a manner as comparable as possible between the member countries. Tables are given showing, in a concise and easily understood form, the structure of the population of countries and of the entire Community, by sex, age, marital status, nationality and economic activity. Some basic information on households and dwellings is also included. Because of the wide diversity in size of population in member countries, ranging from 61 millions in Germany FR to 340 000 in Luxembourg, direct comparisons are sometimes difficult and a number of tables have been included expressing the results in proportional form (per cent or per thousand). Europe-6 totals are also included, this being the actual Community at the time of the censuses.

Demographic statistics 1960-1976

ISBN 92-825-0046-2

Price :	UKL	4.80
	DKR	51
	USD	8.30
	BFR	300

120 pages Format A 4

Multilingual edition published in February 1978

While all member countries possess highly developed systems of demographic statistics, the wide diversity of practice with regard to the publication and presentation of results make it very difficult to obtain comparable and up-to-date information necessary to study trends within the Community. The present publication, which is the first of a new annual series, represents an attempt to make good this deficiency. All the principal series of demographic statistics are covered, namely population by sex and age groups, births, deaths, migration, marriages, divorces, fertility, life expectancy and population projections. Both absolute numbers and rates are given in considerable detail for countries and for the total Community.

Structure of earnings in wholesale and retail distribution, banking
and insurance in 1974

		Price :	
		complete series	per volume
UKL	55	UKL	7.30
DKR	708	DKR	94,50
BFR	4 500	BFR	600
USD	130	USD	17.20

Special series in 10 volumes Format A 4

Published :

Volume 1 - Methods and Definitions : 223 pages
multilingual edition

Volume 2 - Luxembourg : 376 pages
Edition EN/FR

Volume 3 - Danmark : 442 pages
Edition EN/FR

Volume 4 - Belgique/België : 476 pages
Edition EN/FR

Volume 6 - United Kingdom : 380 pages
Edition EN/FR

This survey has been conducted simultaneously, and according to identical methods, in the 9 countries of the European Community.

Its essential objective was to obtain details of the earnings and of individual characteristics (sex, age, level of professional qualification, length of service, etc.) of employed persons, and of the structure (branch of activity, size, etc.) of the enterprises employing them, in order to bring out the relationships between these facts and the levels of remuneration.

The results are published in one volume for each country.

Labour costs in distributive trades, banking and insurance - 1974

Price : UKL 6.30
DKR 65,50
USD 11
BFR 400

232 pages Format A 4

Multilingual edition published in February 1978

This publication contains the methodology and detailed results of the Community survey of labour costs in wholesale and retail distribution, in banking and in insurance in 1974.

These results cover the labour force and number of enterprises, the average annual hours worked, the wages and salaries and labour costs by employee. The structure of labour costs is analysed by types of expenditure. The results for wholesale and retail distribution are analysed according to the size of enterprises, measured by number of employees and the activities as defined in the General Classification of Economic Activities in the European Communities (NACE).

Working conditions in the European Community 1975

ISBN 92-825-0125-6

Price : UKL 5
DKR 53
USD 9.50
BFR 300

Approximately 150 pages Format A 4

Multilingual edition to be published in May 1978

In this publication the Statistical Office of the European Communities presents the main results of a survey on working conditions in the countries of the Community which was carried out as part of the Community labour force sample survey conducted in spring 1975 pursuant to Regulation (EEC) N° 2640/74 of the Council of 15 October 1974.

This was the first survey carried out in this field at Community level. The content of this survey was determined by a series of questions relating to :

- a) work performed : shift work, working on Sundays and public holidays, at night;
- b) working environment : noise, hygiene, safety;
- c) distance between home and place of work and means of transport used.

Green series : Fishery - Catches by fishing region 1964-1976

ISBN 92-825-0122-1

Price : UKL 8
DKR 88
USD 15.50
BFR 500

Approximately 350 pages Format A 4

Multilingual edition to be published in April 1978

This volume, the first in a new series reflecting the development of Community policies for the management of the fishery resources of the Community sea, gives for the Member States historical series (1964-1976) of catches by fishing region for the principle species.

Agricultural statistical study N° 19

Medium term forecasting of orchard fruit production in the EC :
Methods and analyses (by Jean Haworth and Peter Vincent)

ISBN 92-825-0155-8

Price : UKL 4
DKR 41
USD 6.90
BFR 250

Approximately 112 pages Format A 4

English edition to be published in April 1978

The report examines the problems of structural surplus in the supply of apples, pears, peaches and oranges in EUR-6, and reviews the data on orchard area and unit yields which are currently available for making medium term forecasts of future production potential. It discusses the theoretical methods of statistical curve fitting and proposes a forecasting model.

A computer program written in FORTRAN is described with instructions for use and for subsequent modification. A forecast is made of the 1979 production of major varieties of the four species of fruit, together with an analysis of the sensitivity of the forecast to the data available and to assumptions made in the model.

Agricultural statistical study N° 20 (Dr. Kurt Häfner)

ISBN 92-825-0169-8	Price :	UKL	5
ISBN 92-825-0170-1		DKR	53
ISBN 92-825-0171-X		USD	9.50
		BFR	300

Approximately 190 pages Format A 4

Editions EN, FR, DE to be published in April 1978

This study presents a detailed and systematic summary of current knowledge on agricultural supply balance sheets. In addition to the "philosophy" of these balance sheets, the system and techniques of the different types of balance-sheets are also commented upon. The calculation of the degree of self-sufficiency as well as the questions raised by the use of physical or monetary units are also described. Finally the author, who before retiring as Head of a Directorate-General of the Ministry of Agriculture in Bonn was, inter alia, responsible for balance sheets, looks into their use as an aid to policy decisions affecting agriculture.

Red series : Geonomenclature 1977

ISBN 92-825-0139-6	Price :	UKL	6.30
		DKR	69,80
		USD	12.30
		BFR	400

Approximately 150 pages Format A 4

Multilingual edition to be published in April 1978

An annotated edition of the country nomenclature for the external trade statistics of the Community and statistics of trade between the Member States and a publication containing maps and tables with indexes.

EUROSTAT PERIODICALS

Orange series : Monthly general statistics bulletin

ISSN 0378-3456

Annual subscription :	UKL	24	Single copy :	UKL	3.20
	DKR	246		DKR	32,80
	USD	41.50		USD	5.50
	BFR	1 500		BFR	200

Approximately 188 pages Format A 4 monthly

Principal figures on the short-term economic evolution in the enlarged Community, i.e. : employment, industry, internal trade and services, transport, external trade, price and wage indices, finance, balance of payments.

Yellow series : Hourly earnings - Hours of work

ISSN 0378-3596

Annual subscription :	UKL	9.60	Single copy :	UKL	6.40
	DKR	98,50		DKR	65,55
	USD	16.50		USD	11.10
	BFR	600		BFR	400

Approximately 266 pages Format A 4 half-yearly

This publication which is updated every six months contains harmonized data on workers' hourly wages, on labour costs, and weekly hours worked, plus indices of developments in employees' monthly salaries, by region. The publication also contains some data on the earnings and the conditions of employment of permanent workers in agriculture.

Green series : Crop production

ISSN 0378-3588

Annual subscription :	UKL	40	Single copy :	UKL	4.80
	DKR	410		DKR	49,20
	USD	69		USD	8.25
	BFR	2 500		BFR	300

Approximately 120 pages Format A 4 11 issues per year

The most recent information on

- Crop production of arable land (area, yield, production)
- 1) or Fruit and vegetable production (area, yield, production)
 - 2) Areas sown (twice a year)
 - 3) Stocks and deliveries of cereals and potatoes
 - 4) Meteorological report
 - 5) Supply balances for crop products (3 or 4 per year).

Monthly statistics of meat

ISSN 0378-3553

Annual subscription :	UKL	40	Single copy :	UKL	4.80
	DKR	410		DKR	49,20
	USD	69		USD	8.25
	BFR	2 500		BFR	300

Approximately 100 pages Format A 4 11 issues per year

Publication of monthly statistics supplied by Member States in application of the Council's Directives 73/132/EEC and 76/630 EEC concerning surveys to be carried out in the cattle and pig sectors. The bulletin contains information on slaughterings, on foreign trade in live animals, on production by species and by country. In addition, it may also give information on head structure - comments (red pages) - information about supply balances.

Monthly statistics of sugar

Annual subscription :	UKL	Single copy :	UKL
	DKR		DKR
	USD		USD
	BFR		BFR

Approximately 75 pages Format A 4 11 issues per year

Monthly balance sheets showing the main flows of sugar only, expressed as white sugar equivalent. Products containing sugar (sweetened products) are therefore excluded. The objective of the publication is two-fold : to make provisional annual data rapidly available at the end of the crop year, before the issue of final figures, and to follow the seasonal trends of the different flows.

Monthly statistics of milk

ISSN 0378-3545

Annual subscription :	UKL	22.40	Single copy :	UKL	2.90
	DKR	229,50		DKR	29,50
	USD	39		USD	5
	BFR	1 400		BFR	180

Approximately 60 pages Format A 4 8 to 10 issues per year

Publication of weekly and monthly statistics transmitted by Member States in compliance with the Council directive of 31st July 1972, on the statistical surveys to be made by Member States concerning milk and milk products (72/280/EEC).

The bulletin contains the data relating to cows milk collection and the production of processed products by the dairy industry. From time to time the bulletin may contain a commentary on the supply balance sheets and information on dairy structure.

Monthly statistics of eggs

ISSN 0378-3537

Annual subscription :	UKL	22.40	Single copy :	UKL	2.90
	DKR	229,50		DKR	29,50
	USD	39		USD	5
	BFR	1 400		BFR	180

Approximately 75 pages Format A 4 8 to 10 issues per year

Publication of monthly statistics transmitted by Member States in compliance with the Council regulations 2782/75 and 1868/77 on the commercialisation of hatching eggs and farmyard poultry chicks. The bulletin contains data on the selection, multiplication and the uses by species as well as trade with third countries. In addition the bulletin may contain data on structure of hatcheries, commentaries (pink pages) and information on supply balance sheets.

Selling prices of vegetable products

ISSN 0378-6714

Annual subscription :	UKL	43.20	Single copy :	UKL	4.80
(Selling prices of animal products included)	DKR	442,50		DKR	49.20
	USD	74.50		USD	8.25
	BFR	2 700		BFR	300

Approximately 100 pages Format A 4 bi-monthly

Monthly and annual up-dating of the prices of the most important vegetable products and of a number of products processed by the food industry. The prices for each of the member countries are given in national currency and in EUA. The percentage variations refer to the same period of the year before. The monthly evolutions of the prices in EUA of most products are illustrated also by graphs.

Selling prices of animal products

ISSN 0378-6722

Annual subscription :	UKL	43.20	Single copy :	UKL	4.80
(Selling prices of vegetable	DKR	442,50		DKR	49.20
products included)	USD	74.50		USD	8.25
	BFR	2 700		BFR	300

Approximately 125 pages Format A 4 bi-monthly

Monthly and annual up-dating of the prices of the most important animal products and of a number of products processed by the food industry. The prices for each of the member countries are given in national currency and in EUA. The percentage variations refer to the comparable period of the year before. The monthly evolutions of the prices in EUA of most products are illustrated also by graphs.

Purchase prices of the means of production

ISSN 0378-6692

Annual subscription :	UKL	11.20	Single copy :	UKL	4
	DKR	115		DKR	41
	USD	19.50		USD	6.90
	BFR	700		BFR	250

Approximately 140 pages Format A 4 quarterly

Up-dated monthly and annual figures for the principal products bought by farmers. The series for each of the member countries cover animal feed, fertilizers, transport and heating fuels, seeds and pesticides.

EC-Index of producer prices of agricultural products

Annual subscription :	UKL	11.20	Single copy :	UKL	2.40
	DKR	115		DKR	24,60
	USD	19.50		USD	4.15
	BFR	700		BFR	150

Approximately 28 pages Format A 4 bi-monthly

This publication presents for EUR 9 and each of the member countries the evolution of the indices of the producer prices for agricultural products during the last known 12 months.

Fishery statistics

Annual subscription :	UKL	Single copy :	UKL
	DKR		DKR
	USD		USD
	BFR		BFR

Approximately 72 pages Format A 4 quarterly

The publication contains monthly statistics on the quantities and values of landings for the principal fish species in Member States.

Blue series :

Industrial short-term trends

ISSN 0378-7427

Annual subscription :	UKL	8	Single copy :	UKL	0.80
	DKR	82		DKR	8,20
	USD	13.80		USD	1.40
	BFR	500		BFR	50

Approximately 50 pages Format A 4 monthly

Publication of short-term industrial indicators.

The publication contains indices of industrial production for about 40 industrial branches and groups of branches. During 1978 the contents will be gradually increased to include indices of turnover, new orders, employees, wages and salaries and hours worked.

Methodological supplements and retrospective series will complete the regular monthly publication.

Quarterly bulletin of industrial production

ISSN 0378-3529

Annual subscription :	UKL	14.40	Single copy :	UKL	4.80
	DKR	147,50		DKR	49,20
	USD	25		USD	8,25
	BFR	900		BFR	300

Approximately 147 pages Format A 4 quarterly

Data on production within the Community of certain raw materials and finished or semi-finished products.

Quarterly iron and steel bulletin

ISSN 0378-3510

Annual subscription :	UKL	14.40	Single copy :	UKL	4.80
	DKR	147,50		DKR	49,20
	USD	25		USD	8.25
	BFR	900		BFR	300

Approximately 120 pages Format A 4 quarterly

Annual, quarterly and monthly statistics of production, deliveries, receipts and foreign trade in iron ore, pig iron, crude steel and rolled steel products, on the consumption of raw materials in the iron and steel industry and deliveries by merchants of steel products and of scrap, together with statistics of the labour force, hours of work and wages in the iron and steel industry.

Monthly iron and steel bulletin

Annual subscription :	UKL	6.40	Single copy :	UKL	0.80
	DKR	65,50		DKR	8,20
	USD	11		USD	1.40
	BFR	400		BFR	50

Approximately 19 pages Format A 4 monthly (11 issues per year)

Monthly statistics on the number of short-time workers; the production of pig iron, crude steel and finished rolled products; new orders, order books and deliveries of ordinary steels; the production and deliveries of special steels; foreign trade in ECSC steel products; the consumption and net receipts of ferrous scrap by the iron and steel industry.

Ruby series : Coal - Monthly bulletin

ISSN 0378-357X

Annual subscription :	UKL	4.80	Single copy :	UKL	0.65
	DKR	49		DKR	6,50
	USD	8.50		USD	1.15
	BFR	300		BFR	40

Approximately 14 pages Format A 4 monthly (11 issues per year)

Produce monthly the principal statistical series characterising the short term movements in the coal industry.

Hydrocarbons - Monthly bulletin

ISSN 0378-3731

Annual subscription :	UKL	9.60	Single copy :	UKL	0.95
	DKR	98,50		DKR	9,85
	USD	16.50		USD	1.65
	BFR	600		BFR	60

Approximately 20 pages Format A 4 monthly (11 issues per year)

Produce monthly the principal statistical series characterising the short term movements in the petroleum and gas industries.

Electrical energy - Monthly bulletin

ISSN 0378-3561

Annual subscription :	UKL	4.80	Single copy :	UKL	0.65
	DKR	49		DKR	6,50
	USD	8.50		USD	1.15
	BFR	300		BFR	40

Approximately 12 pages Format A 4 monthly (11 issues per year)

Produce monthly principal statistical series characterising the short term movements in the electrical economy in general and fuel consumption in power stations in particular.

Red series : Monthly external trade bulletin

ISSN 0378-3723

Annual subscription :	UKL	24	Single copy :	UKL	2.90
	DKR	246		DKR	29,50
	USD	41.50		USD	5
	BFR	1 500		BFR	180

Approximately 130 pages Format A 4 monthly (11 issues per year)

General summary of foreign trade of the European Community by countries and by products.

Trends in EC trade by countries and by products.

Trade of the main non-EC countries. Indices.

Crimson series : Monthly tables of transport

ISSN 0378-3502

Annual subscription :	UKL	20	Single copy :	UKL	2.40
	DKR	205		DKR	24.60
	USD	34.50		USD	4.15
	BFR	1 250		BFR	150

Approximately 60 pages Format A 4 monthly

Monthly data on :

- Transport of persons and goods by Railway, Inland Waterways, Merchant Shipping and Road
- Registration of motor vehicles
- Road traffic accidents
- Aviation
- Tourism.

3

articles

Contributions to european statistics
(Studies, Analyses)

This part of "EUROSTAT NEWS", which will appear occasionally, contains original contributions on statistics, in particular on European statistics. The authors alone are responsible for the articles in question and the opinions expressed are not necessarily those of the Statistical Office of the European Communities nor of the Commission. The articles appear in one language only, that chosen by the author.

LA CONDITION DE "TRANSITIVITE ELARGIE"
ET SES IMPLICATIONS POUR LES NOMBRES INDICES A UTILISER DANS LE CADRE
DES COMPARAISONS "SPATIO-TEMPORELLES"

par Dino GERARDI

1. Quand l'on doit effectuer une comparaison en termes réels, entre pays appartenant à un ensemble, et pour une succession d'années, l'on rencontre le problème de la cohérence entre les déflateurs temporels de chaque pays et les parités de pouvoir d'achat (PPA) entre ces pays.

En effet, il est normal, par exemple, de s'attendre à ce que la comparaison réelle entre les valeurs courantes de deux pays effectuée à travers la parité courante soit équivalente à la comparaison réelle de ces valeurs exprimées à prix constants, à travers les parités de l'année de base.

L'identité entre les deux comparaisons réelles est évidente dans le cas où les parités sont obtenues à travers l'actualisation des parités de l'année de base à l'aide des déflateurs temporels des deux pays. Dans le cadre de la CE, toutefois, ce procédé n'est pas utilisé.

On ne se limite pas à la seule estimation des PPA de l'année de base, mais au contraire les parités courantes sont estimées au moins pour certains domaines.

Ceci permet à l'EUROSTAT d'améliorer la précision des estimations précédentes et, en plus, il est possible d'introduire les structures de dépenses courantes dans les schémas de pondération des PPA courantes en les substituant ainsi aux structures de dépense de l'année de base qui seraient fatalement incluses dans les parités actualisées.

2. Le calcul annuel des parités courantes pose donc le problème de leur cohérence avec les déflateurs temporels nationaux.

Si l'on appelle ${}_j P_j^0$ et ${}_j P_j^t$ les parités des années 0 et t entre le pays j et le pays de base h et par ${}_0 I_t^h$ et par ${}_0 I_t^j$ les indices temporels de deux pays entre l'année t et l'année de base 0, on peut, avec plus de précision, affirmer que les parités et les indices sont cohérents si l'on peut constater l'égalité suivante :

$${}_j P_j^t / {}_j P_j^0 = {}_0 I_t^j / {}_0 I_t^h$$

Comme nous l'avons déjà affirmé dans notre document à diffusion interne de l'EUROSTAT 1), la cohérence entre les déflateurs spatiaux et les déflateurs temporels est un problème de nature exclusivement formelle. Ceci signifie, en d'autres termes, qu'il est nécessaire, mais aussi suffisant, pour que les parités et les indices nationaux soient cohérents, que les uns et les autres soient calculés à l'aide de formules qui remplissent la condition formelle indiquée précédemment et que nous convenons d'appeler "transitivité élargie".

Au cours de cette note, nous présenterons des formules pour calculer, sur la base des parités et d'indices originaux non cohérents, un système de déflateurs "spatio-temporels" dérivés, remplissant la condition de "transitivité élargie".

3. Obtenir deux nouveaux ensembles de déflateurs spatiaux et temporels qui se surajoutent aux déflateurs originaux peut entraîner au premier abord quelques perplexités; dans une mesure différenciée cependant, selon qu'il s'agit des parités ou des indices temporels.

Dans le premier cas, en effet, l'idée qu'il puisse y avoir pour le même couple de pays différentes mesures de PPA, a déjà été acceptée depuis longtemps. Une double série de PPA, loin de présenter une contradiction, constitue au contraire une nécessité lorsque l'on veut, par exemple, effectuer en même temps des comparaisons bilatérales d'un côté et des comparaisons multilatérales "fermées" de l'autre. Si une comparaison multilatérale est répétée pendant une série d'années successives, il s'impose par nécessité que le calcul de déflateurs spatiaux soit réalisé dans le cadre d'un système "spatio-temporel" intégré.

En ce qui concerne la dimension temporelle, la situation est complètement différente, en effet habituellement l'on calcule pour k époques, $k-1$ indices temporels directs à base fixe ou bien des indices de type chaîne. Le calcul des premiers impose le choix d'une année de base, tandis que le calcul des seconds utilise l'ordre naturel des époques. Dans un cas comme dans l'autre, l'on privilégie $k-1$ couples d'époques entre lesquelles une comparaison bilatérale proprement dite est effectuée. Toutefois, ces mêmes $k-1$ indices sont également utilisés pour effectuer une comparaison multilatérale entre les époques appartenant à un certain ensemble. Dans ce cas, pour réaliser la cohérence entre ces indices et ceux relatifs aux autres

1) D. GERARDI : Proposition concernant la déflation spatiale et temporelle du Produit Intérieur Brut
EUROSTAT Novembre 1976

couples d'époques, appartenant à l'ensemble considéré, l'on impose la transitivité au système et l'on doit subir une diversité dans le degré de "caractéristicité" entre les indices directs et les indices dérivés.

Ce sont justement ces traitements non uniformes réservés aux différents couples d'époques qui rendent critiquables sur le plan théorique un tel type de comparaisons multilatérales (comparaisons ouvertes).

Les solutions de ce type sont irréalisables pour différentes raisons sur le plan spatial, tandis qu'il est difficile de concevoir des alternatives raisonnables dans le cadre temporel.

Ce fait a habitué, aussi bien les réalisateurs que les utilisateurs des indices à l'idée qu'entre deux époques il y a et il ne peut y avoir qu'un indice de prix unique et que celui-ci devrait être utilisé aussi bien pour la comparaison bilatérale entre les deux époques que pour la comparaison multilatérale entre les époques, quand bien même celles-ci appartiendraient à un certain ensemble. Ce sera donc, sans doute, dans le cadre temporel que l'obtention d'un nouvel indice entre deux époques à juxtaposer à l'indice national d'origine, soulèvera le plus d'objections.

De telles objections se prolongeront tant que l'on n'aura pas accepté l'idée que d'une façon générale l'obtention de la cohérence doit obligatoirement passer par une perte de caractéristicité et que les déflateurs varient selon le degré de caractéristicité imposé par le type de comparaison.

D'un autre côté, il devient toujours de moins en moins soutenable pour l'EUROSTAT de comparer les indices nationaux, tels qu'ils sont fournis par les pays sans tenir compte des précieuses informations concernant les relations mutuelles entre les évolutions nationales des niveaux de prix fournies par les estimations répétées des PPA, réalisées à travers une méthodologie communautaire.

4. Pour calculer des PPA et des indices de prix temporels qui remplissent la condition de la "transitivité élargie" (symboles soulignés), nous proposons les formules suivantes :

$$\begin{aligned} \underline{\bar{P}}_j^0 &= \alpha P_j^0 & \forall (j, k) \\ \underline{\bar{P}}_j^t &= \left[\alpha P_j^t \quad \alpha P_j^0 \quad \frac{\underline{I}_t^j}{\underline{I}_t^k} \right]^{1/2} & \forall (j, k); \forall t \\ \underline{\bar{I}}_t^j &= \left[\frac{k}{\alpha} \quad \alpha \frac{P_j^t}{P_j^0} \quad \underline{I}_t^j \quad \underline{I}_t^k \right]^{1/2k} & \forall j; \forall t \end{aligned}$$

A l'aide de telles formules, l'on peut effectuer correctement une comparaison spatio-temporelle qui peut être définie comme "spatialement fermée et temporellement ouverte". La cohérence des nouveaux déflateurs se démontre immédiatement.

En effet, pour les parités on a :

$$\frac{{}_k\bar{P}_j^t}{{}_k\bar{P}_j^o} = \left[\begin{array}{cc} {}_kP_j^t & {}_oI_t^j \\ {}_kP_j^o & {}_oI_t^k \end{array} \right]^{1/2}$$

En ce qui concerne les indices on a :

$$\begin{aligned} \frac{{}_o\bar{I}_t^j}{{}_o\bar{I}_t^k} &= \frac{\left[\prod_{\alpha=1}^k \frac{{}_\alpha P_j^t}{{}_\alpha P_j^o} \cdot {}_oI_t^j \cdot {}_oI_t^\alpha \right]^{1/2k}}{\left[\prod_{\alpha=1}^k \frac{{}_\alpha P_k^t}{{}_\alpha P_k^o} \cdot {}_oI_t^k \cdot {}_oI_t^\alpha \right]^{1/2k}} = \left[\prod_{\alpha=1}^k \frac{{}_\alpha P_j^t}{{}_\alpha P_k^t} \cdot \frac{{}_\alpha P_k^o}{{}_\alpha P_j^o} \cdot \frac{{}_oI_t^j}{{}_oI_t^k} \right]^{1/2k} \\ &= \left[\prod_{\alpha=1}^k \frac{{}_k P_j^t}{{}_k P_j^o} \cdot \frac{{}_oI_t^j}{{}_oI_t^k} \right]^{1/2k} = \left[\frac{{}_k P_j^t}{{}_k P_j^o} \cdot \frac{{}_oI_t^j}{{}_oI_t^k} \right]^{1/2} \end{aligned}$$

Pour les parités ${}_k\bar{P}_j^t$ il est facile de montrer qu'elles satisfont à la transitivité (spatiale). En effet on a :

$$\begin{aligned} \frac{{}_k\bar{P}_j^t}{{}_k\bar{P}_z^t} &= \frac{\left[{}_kP_j^t \cdot {}_kP_j^o \cdot \frac{{}_oI_t^j}{{}_oI_t^k} \right]^{1/2}}{\left[{}_kP_z^t \cdot {}_kP_z^o \cdot \frac{{}_oI_t^z}{{}_oI_t^k} \right]^{1/2}} = \left[\frac{{}_kP_j^t}{{}_kP_z^t} \cdot \frac{{}_kP_j^o}{{}_kP_z^o} \cdot \frac{{}_oI_t^j}{{}_oI_t^z} \right]^{1/2} \\ &= \left[{}_zP_j^t \cdot {}_zP_j^o \cdot \frac{{}_oI_t^j}{{}_oI_t^z} \right]^{1/2} = {}_z\bar{P}_j^t \end{aligned}$$

En ce qui concerne les indices nationaux d'origine, la cohérence vient directement de la définition :

$${}_sI_n^j = {}_oI_n^j / {}_oI_s^j \quad \forall (n, s)$$

De la même façon, pour les indices dérivés l'on a :

$$\begin{aligned} {}_j \bar{I}_r^j &= {}_0 \bar{I}_r^j / {}_0 \bar{I}_s^j = \frac{\left[\prod_{\alpha=1}^k \frac{{}_\alpha P_j^r \cdot {}_0 I_r^j \cdot {}_0 I_r^\alpha}{\alpha P_j^0} \right]^{1/2k}}{\left[\prod_{\alpha=1}^k \frac{{}_\alpha P_j^s}{\alpha P_j^0} \cdot {}_0 I_s^j \cdot {}_0 I_s^\alpha \right]^{1/2k}} = \\ &= \left[\prod_{\alpha=1}^k \frac{{}_\alpha P_j^r}{\alpha P_j^s} \cdot {}_s I_r^j \cdot {}_s I_r^\alpha \right]^{1/2k} \end{aligned}$$

La transitivité établie entre les parités et les indices est remplie également pour n'importe quel couple d'années intermédiaires.

En effet, pour les parités on a :

$$\frac{{}_k \bar{P}_j^r}{{}_k \bar{P}_j^s} = \frac{\left[{}_k P_j^r \cdot {}_k P_j^0 \cdot \frac{{}_s I_r^j}{{}_s I_r^k} \right]^{1/2}}{\left[{}_k P_j^s \cdot {}_k P_j^0 \cdot \frac{{}_s I_s^j}{{}_s I_s^k} \right]^{1/2}} = \left[\frac{{}_k P_j^r}{{}_k P_j^s} \cdot \frac{{}_s I_r^j}{{}_s I_r^k} \right]^{1/2}$$

En ce qui concerne les indices on a également :

$$\begin{aligned} \frac{{}_s \bar{I}_r^j}{{}_s \bar{I}_r^k} &= \frac{\left[\prod_{\alpha=1}^k \frac{{}_\alpha P_j^r}{\alpha P_j^s} \cdot {}_s I_r^j \cdot {}_s I_r^\alpha \right]^{1/2k}}{\left[\prod_{\alpha=1}^k \frac{{}_\alpha P_j^k}{\alpha P_j^s} \cdot {}_s I_r^k \cdot {}_s I_r^\alpha \right]^{1/2k}} = \\ &= \left[\prod_{\alpha=1}^k \frac{{}_\alpha P_j^r}{\alpha P_j^k} \cdot \frac{{}_\alpha P_j^s}{\alpha P_j^s} \cdot \frac{{}_s I_r^j}{{}_s I_r^k} \right]^{1/2k} = \\ &= \left[\frac{{}_k P_j^r}{{}_k P_j^k} \cdot \frac{{}_s I_r^j}{{}_s I_r^k} \right]^{1/2} \end{aligned}$$

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