STATISTICAL COMMISSION and **Working Paper No 5**
ECONOMIC COMMISSION FOR EUROPE

CONFERENCE OF EUROPEAN STATISTICIANS

ECE-Eurostat-OECD Joint Consultation
on the European Comparison Programme

(Geneva, 23-25 October 2000)

Calculation Methodology
On-screen presentation and support on-screen presentation

Paper submitted by Eurostat

1. Consumer survey price collection

- List of surveys
- Guidelines for the conduct of price surveys
- DataEntry / PriceCheck software
- Calculation of average prices
- Attribution of asterisks

2. Sub-group data checking

- The current group structure
- Splittings
- Calculation of parities at survey level
- Quaranta Tables for analytical purposes
- Some possible problems

3. Adjustment to national annual averages

- **Temporal adjustment indices**
- **Spatial adjustment coefficients**
- **The estimation of missing parities**
- **Obtaining written approvals**

4. The annual price survey of Rents

- **Why is it necessary ?**
- **How is it different ?**
- **Estate agency surveys for Article 64 purposes**

5. The annual survey of Salary Costs

- **Why is it necessary ?**
- **How is it different ?**
- **Survey for Article 65 purposes**

6. The annual price surveys of Equipment Goods and of Construction

- **Why are they necessary ?**
- **How are they different ?**

7. The annual detailed breakdown of GDP expenditure values

- **Why is it necessary ?**
- **Data submission to Eurostat**
- **Completing the questionnaire(s)**
- **The choice of classification**
- **The unfortunate effect of zero values**
- **The impact of negative expenditure values**

8. Other data requirements for participation

- **Exchange rates to the common currency**

- **Population estimates**

9. The calculation of estimates at aggregate level

- Indexation of parities from old surveys
- Introducing parities from new surveys
- Calculating reference parities for certain basic headings
- Calculation formulae for aggregation
- The “fixity” issue
- Scaling the parity values
- Contents of the results package

10. Some other issues

- **Publication of the results**
- **Alternative calculation methodologies (desirable features of indices)**
- **The sensitivity of aggregate level results to the results at basic heading level**
- **Alternative uses of PPP data**

11. Conclusions

- **A fascinating subject**
- **A complex method**
- **A lot of data**

WHICH REQUIRES

- **Close coordination + close cooperation**

CONTENTS

A list of consumer price surveys

E.95.1	**Food; beverages; tobacco**
E.95.2	**Services**
E.96.1	**Furniture; Glassware; Tableware**
E.96.2	**Transport; Other goods and services**
E.96.3	**Medicines; Other medical products; Medical services**
E.97.1	**Durable goods**
E.97.2	**Clothing and footwear**

Guidelines for the conduct of price surveys relating to private household consumption

Lignes directrices pour la conduite des enquêtes sur les prix relatives à la consommation des menages

Leitlinien für die durchführung von preiserhebungen zur ermittlung der konsumausgaben der privaten haushalte

These documents are available on the CIRCA website:

Please go to :	http://forum.europa.eu.int/Members/irc/dsis/ppp/library
Then click on :	PPP methodology
Then click on :	Guidance manual: consumer prices surveys
Then click on :	(guidelines) (lignes directrices) (leitlinien)

Survey:	2000-01 "Durable Goods"	Country:	Europe	1 EURO = ???	1.00000

N°	Code	Description	Survey date	Asterisk	Type of outlet	Shop identifier	Requested quantity	Measuring unit	Observed quantity	Observed price	Model and brand	Comments
1	05.3.1.1aaa	Refrigerator					1	piece				
2	05.3.1.1aab	Refrigerator					1	piece				
3	05.3.1.1ab	Refrigerator					1	piece				
4	05.3.1.1ac	Refrigerator					1	piece				
5	05.3.1.1ad	Refrigerator					1	piece				
6	05.3.1.1ae	Refrigerator					1	piece				
7	05.3.1.1af	Refrigerator					1	piece				
8	05.3.1.1aga	Refrigerator					1	piece				
9	05.3.1.1agb	Refrigerator					1	piece				
10	05.3.1.1agc	Refrigerator					1	piece				
11	05.3.1.1agd	Refrigerator					1	piece				
12	05.3.1.1aha	Refrigerator					1	piece				
13	05.3.1.1ahb	Refrigerator					1	piece				
14	05.3.1.1ahc	Refrigerator					1	piece				
15	05.3.1.1baa	Fridge-freezer					1	piece				
16	05.3.1.1bab	Fridge-freezer					1	piece				
17	05.3.1.1bac	Fridge-freezer					1	piece				
18	05.3.1.1bad	Fridge-freezer					1	piece				
19	05.3.1.1bb	Fridge-freezer					1	piece				
20	05.3.1.1bc	Fridge-freezer					1	piece				
21	05.3.1.1bd	Fridge-freezer					1	piece				
22	05.3.1.1bea	Fridge-freezer					1	piece				
23	05.3.1.1beb	Fridge-freezer					1	piece				
24	05.3.1.1bec	Fridge-freezer					1	piece				
25	05.3.1.1bed	Fridge-freezer					1	piece				
26	05.3.1.1bfa	Fridge-freezer					1	piece				
27	05.3.1.1bfb	Fridge-freezer					1	piece				
28	05.3.1.1bfc	Fridge-freezer					1	piece				
29	05.3.1.1bga	Fridge-freezer					1	piece				
30	05.3.1.1bgb	Fridge-freezer					1	piece				
31	05.3.1.1bh	Fridge-freezer					1	piece				
32	05.3.1.1ca	Chest freezer					1	piece				
33	05.3.1.1cba	Chest freezer					1	piece				
34	05.3.1.1cbb	Chest freezer					1	piece				
35	05.3.1.1cbc	Chest freezer					1	piece				
36	05.3.1.1cbd	Chest freezer					1	piece				
37	05.3.1.1cc	Chest freezer					1	piece				
38	05.3.1.1daa	Freezer					1	piece				
39	05.3.1.1dab	Freezer					1	piece				
40	05.3.1.1dac	Freezer					1	piece				
41	05.3.1.1dad	Freezer					1	piece				
42	05.3.1.1db	Freezer					1	piece				
43	05.3.1.1dc	Freezer					1	piece				
44	05.3.1.1dda	Freezer					1	piece				
45	05.3.1.1ddb	Freezer					1	piece				
46	05.3.1.1de	Freezer					1	piece				
47	05.3.1.1dfa	Freezer					1	piece				
48	05.3.1.1dfb	Freezer					1	piece				
49	05.3.1.2aaa	Washing machine					1	piece				
50	05.3.1.2aab	Washing machine					1	piece				
51	05.3.1.2aba	Washing machine					1	piece				
52	05.3.1.2abb	Washing machine					1	piece				
53	05.3.1.2abc	Washing machine					1	piece				
54	05.3.1.2ac	Washing machine					1	piece				

55	05.3.1.2ada	Washing machine					1	piece				

Calculated analytical information…

N°	Price for requested quantity	Average price	Price / Av. Price	Maximum price	Minimum price	Variation coefficient	N° of quotations	N° with asterisk
1	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0

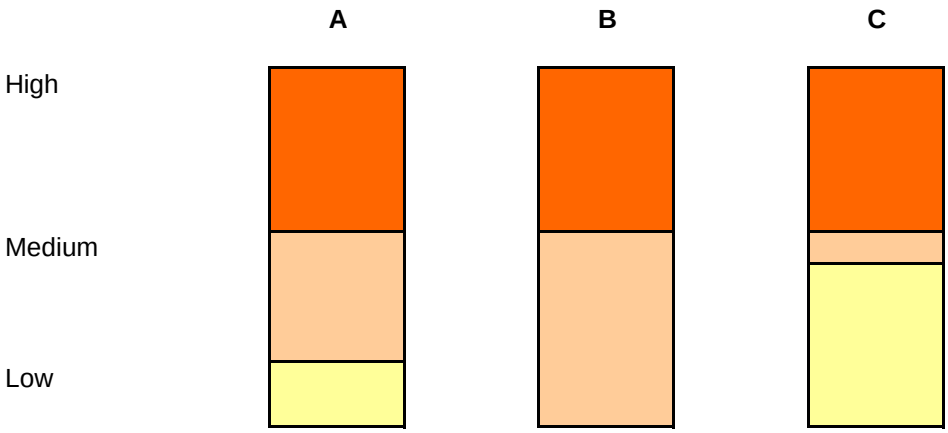
Average price in EURO
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0

The Eurostat coordinated European Comparison Programme sub-groupings

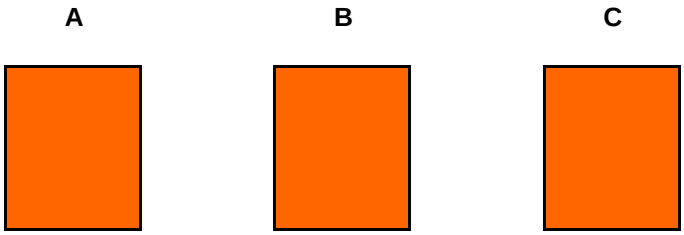
	Northern	Central	Southern
EU-15	FINLAND	AUSTRIA	ITALY
	Denmark	Germany	France
	Sweden	Netherlands	Spain
	United Kingdom	Belgium	Portugal
	Ireland	Luxembourg	Greece
EFTA-3	Iceland	Switzerland	
	Norway		
CAN-13	Estonia	Czech Republic	Bulgaria
	Latvia	Hungary	Cyprus
	Lithuania	Poland	Malta
		Slovakia	Romania
		Slovenia	Turkey
	10	11	10

SPLITTINGS

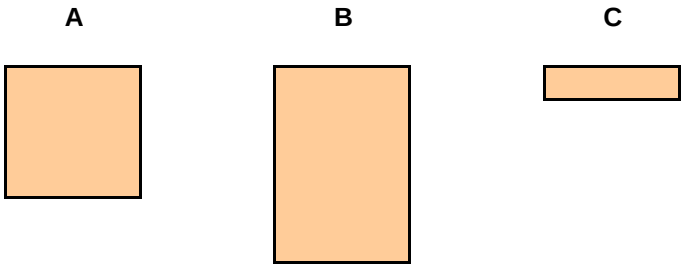
Definition xxx.xx



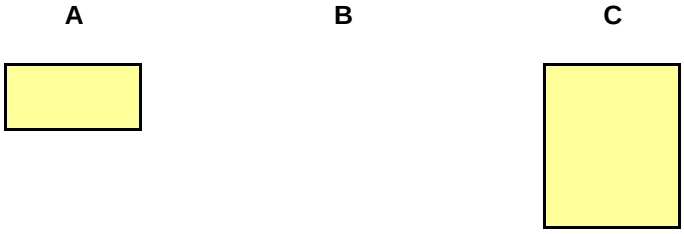
Definition xxx.xx1



Definition xxx.xx2



Definition xxx.xx3



The problem of seasonality

QUESTION...

IF
1. Price of product 'y' is constant throughout year except for one month 'x'
2. In month 'x' there is a price reduction of 50%
3. PPP price survey takes place in month 'x'
4. CPI takes account of sales prices

THEN What is the correct price for PPP price collector to record ?

AND What is the correct adjustment factor to apply to the survey price to obtain the annual average price ?

Month	Observed price	CPI	Conv. factor
x	100	50	1.916667
x+1	200	100	0.958333
x+2	200	100	
x+3	200	100	
x+4	200	100	
x+5	200	100	
x+6	200	100	
x+7	200	100	
x+8	200	100	
x+9	200	100	
x+10	200	100	
x+11	200	100	
avg	*191.66667*	*95.83333*	

ANSWER #1 (a) record observed price on survey date (ie. sales price)
(b) convert to average using CPI

=> 100 x 1.916667 = 191.6667

ANSWER #2 (a) record normal price (assuming it is known - eg. if sale is marked 50%)
(b) convert to average using CPI

=> 200 x 1.916667 = 383.3333 **VERY WRONG !!**

ANSWER #3 (a) record normal price (assuming it is known)
(b) do NOT convert to average

=> 200 x 1 = 200 **SLIGHTLY WRONG !!**

ANSWER #4 (a) record average price for year (ie. wait until end of year)
(b) convert to average using CPI

=> 191.6667 x 1.916667 = 367.3611 **VERY WRONG !!**

ANSWER #5 (a) record average price for year (ie. wait until end of year)
(b) do NOT convert to average

=> 191.6667 x 1 = 191.6667

Only answers 1 + 5 give the correct annual average price
Answer 3 gives a value which is not too bad, assuming it can be done in practice
Answers 2 + 4 give an average price which is very wrong

THE PROBLEM IS THAT ANSWERS 2 + 4 ARE WHAT CAN HAPPEN IF COUNTRIES DO NOT SUPPLY EUROSTAT WITH THE APPROPRIATE CONVERSION FACTOR FROM SURVEY DATE PRICE TO THE ANNUAL AVERAGE (ie. IF THEY SIMPLY EXPECT EUROSTAT TO CALCULATE AN ADJUSTMENT USING THE MONTHLY CONSUMER PRICE INDEX...)

"Filling the gaps" (estimating missing parities) - one possible approach to the solution

EKS-PPPs for basic headings per Quaranta Table

N°	Code of BH	Name of basic heading	DE	FR	IT	NL	BE	LX	UK	IR	DK	GR	ES	POR	OS	SW	SF	CH	ICE	NOR	POL	CYP	Geo. Mean	GM excl ???
1	11540111	Salaries of doctors - hosp.	2.351114	7.25984	2410.388	2.249763	0	76.83733	0.811492	1.07767	13.01121	212.4884	156.0241	131.8812	13.80386	11.55102	7.634377	2.531124	90.7724	10.35237	0.319367	0.566632	#NUM!	11.66115
2	11540112	Salaries of oth.med.staff - hosp.	2.433103	7.51253	1927.41	2.182343	53.55343	69.71147	0.742671	0.907563	13.87489	209.7985	133.7274	111.6179	16.66076	11.02387	6.591736	2.648609	70.30777	10.56475	0.631814	0.595309	12.412	
3	11540121	Salaries of non-med.staff - hosp.	2.977571	8.376154	2135.947	1.742621	52.13333	59.15784	0.608605	1.013994	15.8288	229.5909	128.4607	95.19869	13.66744	11.37352	7.512535	3.067478	67.65014	10.67618	0.625418	0.592689	12.412	

=> expressed base DE…

N°	Code of BH	Name of basic heading	DE	FR	IT	NL	BE	LX	UK	IR	DK	GR	ES	POR	OS	SW	SF	CH	ICE	NOR	POL	CYP	Geo. Mean	GM excl ???
1	11540111	Salaries of doctors - hosp.	1	3.08783	1025.211	0.956892	0	32.68124	0.345152	0.458366	5.534062	90.37777	66.36179	56.09308	5.871201	4.913	3.247132	1.076564	38.60825	4.403177	0.135836	0.241006	#NUM!	5.365489
2	11540112	Salaries of oth.med.staff - hosp.	1	3.087634	792.1614	0.896938	22.01035	28.65126	0.305236	0.373007	5.702549	86.22673	54.96169	45.87472	6.847536	4.530786	2.70919	1.088573	28.89634	4.342091	0.259674	0.244671	5.10131	
3	11540121	Salaries of non-med.staff - hosp.	1	2.813083	717.3453	0.585249	17.50868	19.86782	0.204396	0.340544	5.316011	77.10678	43.14278	31.97193	4.59013	3.819732	2.523041	1.030195	22.7199	3.585532	0.210043	0.199051	4.1685	

Calculate geometric average for Belgium

N°	Code of BH	Name of basic heading	DE	FR	IT	NL	BE	LX	UK	IR	DK	GR	ES	POR	OS	SW	SF	CH	ICE	NOR	POL	CYP
		11540112 and 11540121	1				19.63089															

=> filled…

N°	Code of BH	Name of basic heading	DE	FR	IT	NL	BE	LX	UK	IR	DK	GR	ES	POR	OS	SW	SF	CH	ICE	NOR	POL	CYP	Geo. Mean	GM15
1	11540111	Salaries of doctors - hosp.	1	3.08783	1025.211	0.956892	19.63089	32.68124	0.345152	0.458366	5.534062	90.37777	66.36179	56.09308	5.871201	4.913	3.247132	1.076564	38.60825	4.403177	0.135836	0.241006	5.31302	8.227853
2	11540112	Salaries of oth.med.staff - hosp.	1	3.087634	792.1614	0.896938	22.01035	28.65126	0.305236	0.373007	5.702549	86.22673	54.96169	45.87472	6.847536	4.530786	2.70919	1.088573	28.89634	4.342091	0.259674	0.244671	5.10131	7.603516
3	11540121	Salaries of non-med.staff - hosp.	1	2.813083	717.3453	0.585249	17.50868	19.86782	0.204396	0.340544	5.316011	77.10678	43.14278	31.97193	4.59013	3.819732	2.523041	1.030195	22.7199	3.585532	0.210043	0.199051	4.1685	6.170153

=> expressed base GM15…

N°	Code of BH	Name of basic heading	DE	FR	IT	NL	BE	LX	UK	IR	DK	GR	ES	POR	OS	SW	SF	CH	ICE	NOR	POL	CYP	Geo. Mean	GM15
1	11540111	Salaries of doctors - hosp.	0.121538	0.37529	124.6025	0.116299	2.385907	3.972025	0.041949	0.055709	0.672601	10.98437	8.065505	6.817463	0.713576	0.597118	0.394651	0.130844	4.692384	0.535155	0.016509	0.029291	0.64574	1
2	11540112	Salaries of oth.med.staff - hosp.	0.131518	0.40608	104.1836	0.117964	2.894759	3.76816	0.040144	0.049057	0.749988	11.34038	7.228457	6.033356	0.900575	0.59588	0.356307	0.143167	3.800392	0.571064	0.034152	0.032179	0.67091	1
3	11540121	Salaries of non-med.staff - hosp.	0.162071	0.455918	116.2605	0.094852	2.837641	3.219988	0.033127	0.055192	0.861569	12.49674	6.992174	5.181707	0.743925	0.619066	0.408911	0.166964	3.682227	0.581109	0.034042	0.03226	0.67559	1

=> scaled to ECU…

N°	Code of BH	Name of basic heading	DE	FR	IT	NL	BE	LX	UK	IR	DK	GR	ES	POR	OS	SW	SF	CH	ICE	NOR	POL	CYP	Geo. Mean	GM15
1	11540111	Salaries of doctors - hosp.	2.074539	6.405824	2126.84	1.985111	40.72506	67.79851	0.716032	0.950898	11.48063	187.4922	137.6701	116.3673	12.18004	10.19221	6.736302	2.233373	80.09432	9.134563	0.281798	0.499976	11.0221	17.069
2	11540112	Salaries of oth.med.staff - hosp.	2.244883	6.931377	1778.31	2.013522	49.41065	64.31873	0.685219	0.837356	12.80155	193.5689	123.3826	102.9834	15.37192	10.17108	6.081813	2.443718	64.86891	9.747485	0.582938	0.549258	11.4518	17.069
3	11540121	Salaries of non-med.staff - hosp.	2.766382	7.782062	1984.451	1.619022	48.43569	54.96198	0.565439	0.942075	14.70612	213.3068	119.3494	88.44657	12.69806	10.56684	6.979696	2.849912	62.85194	9.918953	0.58106	0.550652	11.5317	17.069
	Exchange rate to the ECU		1.96913	6.60141	1943.65	2.21967	40.6207	40.6207	0.676434	0.786245	7.4993	330.731	167.184	201.695	13.8545	8.91593	5.98251	1.62203	79.6976	8.46587	3.917844	0.577418	12.412	17.069

RENT SURVEY 1998

Code		Type		Age	Non-standard rooms	Size	Central heating	AGE	SIZE	MONTHLY RENT / m²	% WEIGHT
1131011.1100	Actual	Flat	Age >48	Construction (or complete renovation) before 1950	1 to 2 rooms	area 25-75m² = avg. 50	no central heating				
1131011.1101	Actual	Flat	Age >48	Construction (or complete renovation) before 1950	1 to 2 rooms	area 25-75m² = avg. 50	with central heating				
1131011.1200	Actual	Flat	Age >48	Construction (or complete renovation) before 1950	3 rooms or more	area 70-150m² = avg. 110	no central heating				
1131011.1201	Actual	Flat	Age >48	Construction (or complete renovation) before 1950	3 rooms or more	area 70-150m² = avg. 110	with central heating				
1131011.1300	Actual	Flat	Age 23 - 48	Construction (or complete renovation) between 1950 and 1975	1 to 2 rooms	area 25-75m² = avg. 50	no central heating				
1131011.1301	Actual	Flat	Age 23 - 48	Construction (or complete renovation) between 1950 and 1975	1 to 2 rooms	area 25-75m² = avg. 50	with central heating				
1131011.1400	Actual	Flat	Age 23 - 48	Construction (or complete renovation) between 1950 and 1975	3 rooms or more	area 70-150m² = avg. 110	no central heating				
1131011.1401	Actual	Flat	Age 23 - 48	Construction (or complete renovation) between 1950 and 1975	3 rooms or more	area 70-150m² = avg. 110	with central heating				
1131011.1500	Actual	Flat	Age < 23	Construction (or complete renovation) after 1975	1 to 2 rooms	area 25-75m² = avg. 50	no central heating				
1131011.1501	Actual	Flat	Age < 23	Construction (or complete renovation) after 1975	1 to 2 rooms	area 25-75m² = avg. 50	with central heating				
1131011.1600	Actual	Flat	Age < 23	Construction (or complete renovation) after 1975	3 rooms or more	area 70-150m² = avg. 110	no central heating				
1131011.1601	Actual	Flat	Age < 23	Construction (or complete renovation) after 1975	3 rooms or more	area 70-150m² = avg. 110	with central heating				
1131011.2100	Actual	House	Age >48	Construction (or complete renovation) before 1950	3 rooms	area 70-120m² = avg. 95	no central heating				
1131011.2101	Actual	House	Age >48	Construction (or complete renovation) before 1950	3 rooms	area 70-120m² = avg. 95	with central heating				
1131011.2200	Actual	House	Age >48	Construction (or complete renovation) before 1950	4 to 5 rooms	area 80-150m² = avg. 115	no central heating				
1131011.2201	Actual	House	Age >48	Construction (or complete renovation) before 1950	4 to 5 rooms	area 80-150m² = avg. 115	with central heating				
1131011.2300	Actual	House	Age 23 - 48	Construction (or complete renovation) between 1950 and 1975	3 rooms	area 70-120m² = avg. 95	no central heating				
1131011.2301	Actual	House	Age 23 - 48	Construction (or complete renovation) between 1950 and 1975	3 rooms	area 70-120m² = avg. 95	with central heating				
1131011.2400	Actual	House	Age 23 - 48	Construction (or complete renovation) between 1950 and 1975	4 to 5 rooms	area 80-150m² = avg. 115	no central heating				
1131011.2401	Actual	House	Age 23 - 48	Construction (or complete renovation) between 1950 and 1975	4 to 5 rooms	area 80-150m² = avg. 115	with central heating				
1131011.2500	Actual	House	Age < 23	Construction (or complete renovation) after 1975	3 rooms	area 70-120m² = avg. 95	no central heating				
1131011.2501	Actual	House	Age < 23	Construction (or complete renovation) after 1975	3 rooms	area 70-120m² = avg. 95	with central heating				
1131011.2600	Actual	House	Age < 23	Construction (or complete renovation) after 1975	4 to 5 rooms	area 80-150m² = avg. 115	no central heating				
1131011.2601	Actual	House	Age < 23	Construction (or complete renovation) after 1975	4 to 5 rooms	area 80-150m² = avg. 115	with central heating				
1131012.1100	Imputed	Flat	Age >48	Construction (or complete renovation) before 1950	1 to 2 rooms	area 25-75m² = avg. 50	no central heating				
1131012.1101	Imputed	Flat	Age >48	Construction (or complete renovation) before 1950	1 to 2 rooms	area 25-75m² = avg. 50	with central heating				
1131012.1200	Imputed	Flat	Age >48	Construction (or complete renovation) before 1950	3 rooms or more	area 70-150m² = avg. 110	no central heating				
1131012.1201	Imputed	Flat	Age >48	Construction (or complete renovation) before 1950	3 rooms or more	area 70-150m² = avg. 110	with central heating				
1131012.1300	Imputed	Flat	Age 23 - 48	Construction (or complete renovation) between 1950 and 1975	1 to 2 rooms	area 25-75m² = avg. 50	no central heating				
1131012.1301	Imputed	Flat	Age 23 - 48	Construction (or complete renovation) between 1950 and 1975	1 to 2 rooms	area 25-75m² = avg. 50	with central heating				
1131012.1400	Imputed	Flat	Age 23 - 48	Construction (or complete renovation) between 1950 and 1975	3 rooms or more	area 70-150m² = avg. 110	no central heating				
1131012.1401	Imputed	Flat	Age 23 - 48	Construction (or complete renovation) between 1950 and 1975	3 rooms or more	area 70-150m² = avg. 110	with central heating				
1131012.1500	Imputed	Flat	Age < 23	Construction (or complete renovation) after 1975	1 to 2 rooms	area 25-75m² = avg. 50	no central heating				
1131012.1501	Imputed	Flat	Age < 23	Construction (or complete renovation) after 1975	1 to 2 rooms	area 25-75m² = avg. 50	with central heating				
1131012.1600	Imputed	Flat	Age < 23	Construction (or complete renovation) after 1975	3 rooms or more	area 70-150m² = avg. 110	no central heating				
1131012.1601	Imputed	Flat	Age < 23	Construction (or complete renovation) after 1975	3 rooms or more	area 70-150m² = avg. 110	with central heating				
1131012.2100	Imputed	House	Age >48	Construction (or complete renovation) before 1950	3 rooms	area 70-120m² = avg. 95	no central heating				
1131012.2101	Imputed	House	Age >48	Construction (or complete renovation) before 1950	3 rooms	area 70-120m² = avg. 95	with central heating				
1131012.2200	Imputed	House	Age >48	Construction (or complete renovation) before 1950	4 to 5 rooms	area 80-150m² = avg. 115	no central heating				
1131012.2201	Imputed	House	Age >48	Construction (or complete renovation) before 1950	4 to 5 rooms	area 80-150m² = avg. 115	with central heating				
1131012.2300	Imputed	House	Age 23 - 48	Construction (or complete renovation) between 1950 and 1975	3 rooms	area 70-120m² = avg. 95	no central heating				
1131012.2301	Imputed	House	Age 23 - 48	Construction (or complete renovation) between 1950 and 1975	3 rooms	area 70-120m² = avg. 95	with central heating				
1131012.2400	Imputed	House	Age 23 - 48	Construction (or complete renovation) between 1950 and 1975	4 to 5 rooms	area 80-150m² = avg. 115	no central heating				
1131012.2401	Imputed	House	Age 23 - 48	Construction (or complete renovation) between 1950 and 1975	4 to 5 rooms	area 80-150m² = avg. 115	with central heating				
1131012.2500	Imputed	House	Age < 23	Construction (or complete renovation) after 1975	3 rooms	area 70-120m² = avg. 95	no central heating				
1131012.2501	Imputed	House	Age < 23	Construction (or complete renovation) after 1975	3 rooms	area 70-120m² = avg. 95	with central heating				
1131012.2600	Imputed	House	Age < 23	Construction (or complete renovation) after 1975	4 to 5 rooms	area 80-150m² = avg. 115	no central heating				
1131012.2601	Imputed	House	Age < 23	Construction (or complete renovation) after 1975	4 to 5 rooms	area 80-150m² = avg. 115	with central heating				

Total: 48

- National monthly average rent price per m²
- Weighted arithmetical average of private and public (subsidised) dwellings
- Rent price corresponding to National Accounts - eg. may include local authority taxes and charges
- With hot and cold water
- Includes as standard: shower and/or bathroom; internal WC; kitchen
- Area includes fixtures and fittings
- Rent price excluding charges for water, electricity and gas
- Include share of costs of maintaining communal areas (eg. staircases)

RENT SURVEY 1998

ADDITIONAL INDICATORS

Appartments

Age indicators

	Type of dwelling	*Number*	*%*
1.1	< 1950		
1.2	1950 - 1975		
1.3	> 1975		
	Total	0	0

Quantity indicators

	Type of dwelling	*Number*	*%*	*Area (m²)*	*%*
2.1	1 room				
2.2	2 rooms				
2.3	3 rooms				
2.4	>3 rooms				
	Total	0	0	0	0

NB. "room" means "room other than kitchen; shower/bathroom; internal WC"

Quality indicators

	Type of dwelling	*Number*	*%*
3.1	with Electricity		
3.2	with Running Water		
3.3	with Inside Toilet		
3.4	with Central Heating		

Houses

Age indicators

	Type of dwelling	*Number*	*%*
4.1	< 1950		
4.2	1950 - 1975		
4.3	> 1975		
	Total	0	0

Quantity indicators

	Type of dwelling	*Number*	*%*	*Area (m²)*	*%*
5.1	1 room				
5.2	2 rooms				
5.3	3 rooms				
5.4	4 rooms				
5.5	5 rooms				
5.6	>5 rooms				
	Total	0	0	0	0

NB. "room" means "room other than kitchen; shower/bathroom; internal WC"

Quality indicators

	Type of dwelling	*Number*	*%*
6.1	with Electricity		
6.2	with Running Water		
6.3	with Inside Toilet		
6.4	with Central Heating		

1998 salary survey questionnaire (part 1: salary costs and effective hours of work)

Code	Job	ISCO'88 code(s)	Basic annual salary	Allowances and deductions				Employer contributions		Total cost	Hours per week	Holiday entitlement (days)	Adjusted total cost
				(I)	(ii)	(iii)	(iv)	Actual	Imputed				
101	Doctor, head of department	2221, 1229								0			#DIV/0!
102	Doctor, senior consultant	2221								0			#DIV/0!
103	Doctor	2221								0			#DIV/0!
104	Nurse, head of department	2230, 3231, 3232								0			#DIV/0!
105	Nurse, operating theatre	2230, 3231, 3232								0			#DIV/0!
106	Nurse	2230, 3231, 3232								0			#DIV/0!
107	Nursing auxiliary	5132								0			#DIV/0!
108	Physiotherapist	3226								0			#DIV/0!
109	Laboratory assistant	3211								0			#DIV/0!
110	Hospital chief executive	1210								0			#DIV/0!
111	Secretary – I	4115, 4111, 4112								0			#DIV/0!
112	Cook	5122								0			#DIV/0!
201	Finance department manager	1231								0			#DIV/0!
202	Executive official (skill level III)	3431, 3439, 3442, 3443, 3449								0			#DIV/0!
203	Executive official (skill level IV)	3431, 3439, 3442, 3443, 3449								0			#DIV/0!
204	Computer operator	3121, 3122								0			#DIV/0!
205	Bookkeeping clerk	4121								0			#DIV/0!
206	Data entry clerk	4113								0			#DIV/0!
207	Secretary – II	4115, 4111, 4112								0			#DIV/0!
208	Telephone switchboard operator	4223								0			#DIV/0!
209	Messenger	9151								0			#DIV/0!
210	Maintenance electrician	7137								0			#DIV/0!
211	Building caretaker	9141								0			#DIV/0!
212	Cleaner	9132								0			#DIV/0!
213	Policeman /woman	5162								0			#DIV/0!
214	Prison guard	5163								0			#DIV/0!
215	Firefighter	5161								0			#DIV/0!
216	Social worker	2446, 3460								0			#DIV/0!
217	Town planner	2141								0			#DIV/0!
218	Civil engineer	2142								0			#DIV/0!
219	Draughtsperson	3118								0			#DIV/0!
220	Construction labourer	9312, 9313								0			#DIV/0!
221	Chauffeur	8322								0			#DIV/0!
222	Agricultural scientist	2213								0			#DIV/0!
223	Librarian	2432								0			#DIV/0!
301	Kindergarten teacher	2332, 3320								0			#DIV/0!
302	Primary teacher	2331, 3310								0			#DIV/0!
303	Secondary teacher	2320								0			#DIV/0!
304	University lecturer	2310								0			#DIV/0!
305	Head teacher	1229								0			#DIV/0!
401	Army: Private of infantry regiment	110								0			#DIV/0!
402	Army: Commander of infantry regiment	110								0			#DIV/0!
403	Navy: Able seaman	110, 8340								0			#DIV/0!
404	Navy: Commander of frigate	110, 3142								0			#DIV/0!
405	Air Force: Aircraftsman (ground crew)	110, 7232								0			#DIV/0!
406	Air Force: Pilot of fighter aircraft	110, 3143								0			#DIV/0!
46													

1998 salary survey questionnaire (part 2: percentage weightings)

Code	Job	Hospitals - physicians/nurses/nonmedical			Education	General Govt.	Defence
		1154011.1	1154011.2	1154012.1	1321011.1	1311011.1	1311011.2
101	Doctor, head of department		*****	*****	*****	*****	*****
102	Doctor, senior consultant		*****	*****	*****	*****	*****
103	Doctor		*****	*****	*****	*****	*****
104	Nurse, head of department	*****		*****	*****	*****	*****
105	Nurse, operating theatre	*****		*****	*****	*****	*****
106	Nurse	*****		*****		*****	*****
107	Nursing auxiliary	*****		*****	*****	*****	*****
108	Physiotherapist	*****		*****	*****	*****	*****
109	Laboratory assistant	*****		*****	*****	*****	*****
110	Hospital chief executive	*****	*****		*****	*****	*****
111	Secretary – I	*****	*****		*****	*****	*****
112	Cook	*****	*****		*****	*****	*****
201	Finance department manager	*****	*****	*****			*****
202	Executive official (skill level III)	*****	*****	*****			*****
203	Executive official (skill level IV)	*****	*****	*****			*****
204	Computer operator	*****	*****	*****			*****
205	Bookkeeping clerk	*****	*****	*****			*****
206	Data entry clerk	*****	*****	*****			*****
207	Secretary – II	*****	*****	*****			*****
208	Telephone switchboard operator	*****	*****	*****			*****
209	Messenger	*****	*****	*****			*****
210	Maintenance electrician	*****	*****	*****			*****
211	Building caretaker	*****	*****	*****			*****
212	Cleaner	*****	*****	*****			*****
213	Policeman /woman	*****	*****	*****	*****		*****
214	Prison guard	*****	*****	*****	*****		*****
215	Firefighter	*****	*****	*****	*****		*****
216	Social worker	*****	*****	*****			*****
217	Town planner	*****	*****	*****	*****		*****
218	Civil engineer	*****	*****	*****	*****		*****
219	Draughtsperson	*****	*****	*****	*****		*****
220	Construction labourer	*****	*****	*****	*****		*****
221	Chauffeur	*****	*****	*****	*****		*****
222	Agricultural scientist	*****	*****	*****	*****		*****
223	Librarian	*****	*****	*****	*****		*****
301	Kindergarten teacher	*****	*****	*****		*****	*****
302	Primary teacher	*****	*****	*****		*****	*****
303	Secondary teacher	*****	*****	*****		*****	*****
304	University lecturer	*****	*****	*****		*****	*****
305	Head teacher	*****	*****	*****		*****	*****
401	Army: Private of infantry regiment	*****	*****	*****	*****	*****	
402	Army: Commander of infantry regime	*****	*****	*****	*****	*****	
403	Navy: Able seaman	*****	*****	*****	*****	*****	
404	Navy: Commander of frigate	*****	*****	*****	*****	*****	
405	Air Force: Airman (ground crew)	*****	*****	*****	*****	*****	
406	Air Force: Pilot of fighter aircraft	*****	*****	*****	*****	*****	
46		0	0	0	0	0	0

Basic headings for which PPPs are calculated by reference to other basic headings

Individual consumption

1162032.1	Service charge for insurance of personal transport
1172022.1	Service charge for lotteries, bets, wagers, gambling, etc
1154021.1	Hospitals: intermediate consumption of food and beverages
1154022.1	Hospitals: intermediate consumption of pharmaceutical products
1154023.1	Hospitals: intermediate consumption of therapeutic equipment
1154024.1	Hospitals: intermediate consumption of other equipment
1154025.1	Hospitals: intermediate consumption of water, energy products
1154026.1	Hospitals: intermediate consumption of other goods and services
1154031.1	Hospitals: depreciation of fixed capital

Collective consumption

1211011.1	Final consumption expenditure of Private Non-Profit Institutions
1322011.1	Government expenditure on education: intermediate consumption of goods and services
1323011.1	Government expenditure on education: consumption of fixed capital
1331011.1	Government expenditure on medicines and other pharmaceutical products
1332011.1	Government expenditure on therapeutic appliances and equipment
1333011.1	Government expenditure on services of physicians, etc outside hospitals
1334011.1	Government expenditure on hospital care and the like
1335011.1	Government expenditure on other public health services
1341011.1	Government expenditure on social security and welfare services
1342011.1	Government expenditure on recreational and cultural services

Other expenditure

1511011.1	Variation in stocks

Summary of statistical formulae :
Calculation of purchasing power parities at elementary level

Stage 1. (Unilaterally)

1.1 Average price per definition
(PMD = "Prix Moyen par Définition")

Method : simple arithmetic mean : (For i = 1 to n) $PMD = 1 / n \, \Sigma \, PU^i$

where n = number of price quotations for the specified product definition
PU^i = unit price of product i

Stage 2. (Bilaterally)

2.1 Laspeyres purchasing power parity for basic heading
(PPA^L = "Parité de Pouvoir d'Achat - type Laspeyres")

Method : simple geometric mean : (For i = 1 to n) $_aPPA^L_b = \mathbf{P}_i \, {}_aRPM_b^{\,i\ (1/n)}$

where n = number of product definitions for the specified basic heading, which are representative for the base country a
$_aRPM_b^{\,i}$ = ratio of average prices for product definition i = $PMD_a^i \div PMD_b^i$

2.2 Paasche-type purchasing power parity for basic heading
(PPA^P = "Parité de Pouvoir d'Achat - type Paasche")

Method : simple geometric mean : (For i = 1 to n) $_aPPA^P_b = \mathbf{P}_i \, {}_bRPM_a^{\,i\ (1/n)}$

where n = number of product definitions for the specified basic heading, which are representative for the reference country b
$_bRPM_a^{\,i}$ = ratio of average prices for product definition i = $PMD_b^i \div PMD_a^i$

2.3 Fisher-type purchasing power parity for basic heading
(PPA^F = "Parité de Pouvoir d'Achat - type Fisher")

Method : simple geometric mean : $_aPPA^F_b = \mathbf{P} \, {}_aPPA^L_b \cdot {}_aPPA^P_b \ (1/2)$

Stage 3. (Multilaterally)

3.1 EKS-type purchasing power parity for basic heading
(PPA^{EKS} = "Parité de Pouvoir d'Achat - type EKS")

Method : geometric mean : (For i = 1 to n) $_aPPA^{EKS}_b = \mathbf{P} \, {}_aPPA^F_b \cdot {}_iPPA^F_j \ (1/n)$

where n = possible number of comparisons
$_aPPA^F_b$ = direct bilateral Fisher parity
$_iPPA^F_j$ = all indirect bilateral Fisher comparisons linking a and b
(eg. $_aPPA^F_i \times {}_iPPA^F_b$, $_aPPA^F_j \times {}_jPPA^F_b$)

Summary of statistical formulae :
Calculation of purchasing power parities at aggregated level

Stage 4. (Bilaterally)

4.1 Laspeyres purchasing power parity for group of basic headings
(PPA^L = "Parité de Pouvoir d'Achat - type Laspeyres")

Method : weighted arithmetic mean :

$$(\text{For } i = 1 \text{ to } n)\ {}_aPPA^L{}_b = 1 / \Sigma (W_a)\ \ \Sigma ({}_aPPA^{EKS}{}_b{}^i \cdot W_a{}^i)$$

where n = number of basic headings in the specified grouping
${}_aPPA^{EKS}{}_b{}^i$ = EKS purchasing power parity for basic heading i
$W_a{}^i$ = expenditure weighting for basic heading i in base country a

4.2 Paasche-type purchasing power parity for grou p of basic headings
(PPA^P = "Parité de Pouvoir d'Achat - type Paasche")

Method : weighted harmonic mean :

$$(\text{For } i = 1 \text{ to } n)\ {}_aPPA^P{}_b = \Sigma (W_b)\ \ 1 / \Sigma ({}_bPPA^{EKS}{}_a{}^i \cdot W_b{}^i)$$

where n = number of basic headings in the specified grouping
${}_bPPA^{EKS}{}_a{}^i$ = purchasing power parity for basic heading i
$W_b{}^i$ = expenditure weighting for basic heading i in reference country b

4.3 Fisher-type purchasing power parity for group of basic headings
(PPA^F = "Parité de Pouvoir d'Achat - type Fisher")

Method : simple geometric mean : ${}_aPPA^F{}_b = \mathbf{P}\ {}_aPPA^L{}_b \cdot {}_aPPA^P{}_b\ ^{(1/2)}$

Stage 5. (Multilaterally)

5.1 EKS-type purchasing power parity for group of basic headings
(PPA^{EKS} = "Parité de Pouvoir d'Achat - type EKS")

Method : geometric mean : $(\text{For } i = 1 \text{ to } n)\ {}_aPPA^{EKS}{}_b = \mathbf{P}\ {}_aPPA^F{}_b \cdot {}_iPPA^F{}_j\ ^{(1/n)}$

where n = possible number of comparisons
${}_aPPA^F{}_b$ = direct bilateral Fisher comparison
${}_iPPA^F{}_j$ = all indirect bilateral Fisher comparisons linking a and b
(eg. ${}_aPPA^F{}_i$ x ${}_iPPA^F{}_b$, ${}_aPPA^F{}_j$ x ${}_jPPA^F{}_b$)

The formula can be restated : $(\text{For } i = 1 \text{ to } n)\ {}_aPPA^{EKS}{}_b = {}^n\ddot{O}\ ({}_aPPA^F{}_b)^2 \cdot ({}_iPPA^F{}_j)^{(n-2)}$