



# Prices and Earnings Around the Globe

1997 Edition



The most expensive cities:  
Tokyo, Oslo, Copenhagen, Stockholm and Zurich

Highest purchasing power in Luxembourg,  
Switzerland and the United States

Long working hours in Asia, shorter hours  
in Europe

Abu Dhabi  
Amsterdam  
Athens  
Bangkok  
Berlin  
Bogotá  
Brussels  
Budapest  
Buenos Aires  
Cairo  
Caracas  
Chicago  
Copenhagen  
Dublin  
Frankfurt  
Geneva  
Helsinki  
Hong Kong  
Houston  
Istanbul  
Jakarta  
Johannesburg  
Kuala Lumpur  
Lisbon  
London  
Los Angeles  
Luxembourg  
Madrid  
Manama (Bahrain)  
Manila  
Mexico City  
Milan  
Montreal  
Moscow  
Mumbai (Bombay)  
Nairobi  
New York  
Nicosia  
Oslo  
Panama  
Paris  
Prague  
Rio de Janeiro  
São Paulo  
Seoul  
Shanghai  
Singapore  
Stockholm  
Sydney  
Taipei  
Tel Aviv  
Tokyo  
Toronto  
Vienna  
Warsaw  
Zurich

# Prices and Earnings Around the Globe

An international comparison  
of purchasing power

1997 Edition

Published by UBS, Union Bank of Switzerland  
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Published in English, German, French and Italian.

Printed in Switzerland in August 1997 (no. 965.09 e).



This environmentally friendly paper has been produced using pulp bleached without chlorine.

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This edition of "Prices and Earnings Around the Globe" is the tenth survey of international prices and wages to be published by the Economic Research Department of Union Bank of Switzerland (UBS). New cities included since the last survey are Berlin (replaces Düsseldorf), Istanbul, Moscow, Shanghai and Warsaw, bringing the total number of cities surveyed to 56. Lagos is no longer featured in our survey. The worldwide survey from which the data are derived was conducted in the second quarter of 1997. In most cities the data were collected by two units working independently of each other. The questionnaires contained 140 questions relating to prices and 96 to wages, wage deductions and working hours in twelve different occupations. A total of more than 20,000 data items were collected and analyzed. The survey was carried out primarily by staff at UBS's correspondent banks as well as at UBS branches and representative offices in the cities concerned. Local consumer organizations also assisted in conducting the survey. We should like to thank all those involved for their valuable assistance.

Judging by the positive response to the last survey, there is growing demand for international comparisons of prices and earnings in an increasingly integrated global economy. There are, however, a number of factors that need to be taken into consideration. All the price data collected must be converted into one currency and are subject to substantial fluctuations in exchange rates. In order to offset these fluctuations to some extent we have used the average rate of exchange over the period of the survey. In order to facilitate the updating of our tables in the event of currency fluctuations, the exchange rates on which the tables are based are shown at the back of the brochure.

For price comparisons it is essential to use a uniform basket of goods. The basket used in our report is principally based on European consumer habits and is equally weighted for all the cities in the survey. It would be virtually impossible to take regional differences in consumer habits into account and allowances must be made for this fact when interpreting the international cost-of-living comparison. Although the individual items were described in as much detail as possible in the questionnaire, we had to allow our data collectors a certain amount of leeway in their choice of products and services. Unless otherwise indicated, the wage data are based on wages paid to local employees.

Union Bank of Switzerland  
Economic Research Department

## Prices\*

City	Excl. rent	Incl. rent
	Zurich = 100	Zurich = 100
Tokyo	121.7	136.2
Oslo	110.9	103.5
Copenhagen	102.1	99.3
Stockholm	101.7	95.5
Zurich	100.0	100.0
Singapore	97.3	109.3
Geneva	96.4	93.8
Helsinki	93.9	89.9
London	89.8	101.4
Paris	89.2	91.1
Seoul	85.3	96.7
Moscow	85.2	93.4
Frankfurt	83.6	86.4
New York	82.9	94.5
Abu Dhabi	82.8	92.7
Chicago	81.1	84.4
Taipei	80.5	86.1
Rio de Janeiro	80.3	88.6
Vienna	79.1	77.9
Sydney	78.8	79.2
Los Angeles	78.7	84.4
Hong Kong	77.3	95.2
São Paulo	77.2	85.6
Dublin	77.2	78.0
Houston	76.2	73.8
Brussels	76.0	74.8
Tel Aviv	75.5	73.8
Berlin	75.0	74.0
Amsterdam	74.6	74.9
Luxembourg	73.4	75.8
Montreal	72.6	69.4
Milan	70.9	76.9
Buenos Aires	70.7	72.4
Shanghai	70.4	85.5
Kuala Lumpur	69.6	72.8
Toronto	69.2	70.1
Madrid	67.6	73.0
Manama (Bahrain)	67.6	68.2
Bangkok	66.9	70.3
Athens	66.6	65.9
Nairobi	63.9	58.8
Caracas	62.5	68.5
Manila	61.5	70.2
Jakarta	60.7	76.2
Panama	60.5	68.1
Nicosia	60.0	57.8
Bogotá	59.6	64.7
Lisbon	57.4	59.0
Mexico City	55.3	62.1
Cairo	55.1	58.3
Johannesburg	51.4	51.4
Warsaw	50.4	53.6
Budapest	48.8	56.3
Prague	47.8	46.7
Istanbul	45.9	48.5
Mumbai (Bombay)	42.3	46.5

\*Cost of a basket of 111 goods and services, including 3 rent categories, weighted by consumer habits. Order based on index readings of prices excluding rents

### The most expensive cities: Tokyo, Oslo, Copenhagen, Stockholm and Zurich

Tokyo is the most expensive of the 56 cities studied in our international comparison, followed at a certain distance by the three Scandinavian capitals of Oslo, Copenhagen and Stockholm, the Swiss agglomerations of Zurich and Geneva and also Singapore. The cost of a basket of goods compiled to reflect European consumer habits (not including rent) is 30 to 64% higher in these cities than the international average of 74.3 points (Zurich = 100). The same basket is especially low-priced in the cities of Mumbai, Istanbul, Prague and Budapest, where it works out at roughly a half to two-thirds of the average around the world. Roughly twenty of the cities surveyed fall into a bandwidth of 70 to 80 index points.

Compared with our last survey, Nairobi, Caracas and the major Brazilian centers of Rio de Janeiro and São Paulo have moved up the fastest in our cost-of-living index, while Tokyo – although still at the head of the pack – put in a more favorable performance. These shifting positions are due mainly to dissimilar inflation and exchange rate developments since 1994.

The inclusion of rents in the price comparisons makes Tokyo's lead even more pronounced. Furthermore, Singapore moves up to second place, while Copenhagen and Stockholm fall back somewhat thanks to their relatively lower rent levels. In general the cost of living in the Asian centers looks relatively more expensive in comparison to the rest of the world when rental costs are factored in, although the same is also true of London and New York.

### Highest gross hourly wages in Switzerland, Japan, Denmark and the United States

If gross incomes are adjusted for the quite substantial differences in the number of hours worked and the number of vacation days and then broken down into an hourly rate, employees in Zurich, Geneva, Copenhagen, Tokyo, New York, Luxembourg, Los Angeles and Frankfurt earn 84 to 143% more than employees in the average of the cities surveyed (\$9.19). Workers in Nairobi, Shanghai, Mumbai, Moscow, Budapest, Manila, and Mexico City earn the least (between 9 and 19% of gross average incomes); gross hourly wages are also relatively low in the cities of Warsaw, Caracas, and Jakarta (roughly 20% of the average). There are no wage figures available for Cairo. Net wages are considerably lower than gross wages in Scandinavia (Copenhagen, Stockholm, Oslo, Helsinki), but also in Belgium (Brussels), Germany (Frankfurt, Berlin) and Montreal, which is explained by the above-average level of tax and social security deductions. The overall range in average net wages between highest and lowest is very broad, the average hourly net wage ranging from 70 cents to \$4.50 per hour in the bottom third of the cities in the survey and from \$8.90 to \$17.30 in the top third, with the average of all cities about \$7.

These calculations are based on data for the hours worked and wages earned in the following 12 occupations: primary school teacher, bus driver, automobile mechanic, building laborer, skilled industrial worker, department manager, bank credit clerk, secretary, saleswoman in a department store, female industrial worker, electrical/mechanical engineer and cook. The wage index is weighted by the share of each occupation in overall employment, the share of each occupation's income in overall income and also by gender.

### Wage and Salary Levels\*

City	Gross wages Zurich = 100	Net wages Zurich = 100
Zurich	100.0	100.0
Geneva	97.7	91.4
Copenhagen	88.9	67.4
Tokyo	84.5	89.8
New York	77.8	75.1
Luxembourg	76.6	78.5
Los Angeles	76.3	78.6
Frankfurt	75.9	60.7
Chicago	72.3	75.4
Oslo	71.5	64.0
Houston	71.4	74.9
Berlin	69.3	54.8
Brussels	68.2	51.0
Montreal	64.0	55.8
Toronto	62.5	57.7
Stockholm	62.1	52.3
Vienna	61.2	57.6
Amsterdam	58.2	52.1
Paris	54.2	49.5
Helsinki	52.2	45.2
London	51.6	51.3
Sydney	51.6	51.2
Dublin	51.2	49.3
Milan	48.0	41.7
Madrid	40.3	41.7
Taipei	38.0	43.4
Tel Aviv	34.9	35.5
Hong Kong	34.7	42.2
Seoul	33.7	36.0
Nicosia	33.3	34.6
Athens	33.0	33.0
Singapore	30.4	30.0
Abu Dhabi	29.1	37.5
São Paulo	26.1	29.1
Johannesburg	26.0	23.3
Buenos Aires	25.5	27.3
Lisbon	25.4	26.1
Kuala Lumpur	24.3	26.6
Manama (Bahrain)	24.0	29.4
Rio de Janeiro	21.7	24.5
Istanbul	17.2	14.9
Panama	16.0	17.6
Bogotá	15.6	18.5
Bangkok	14.3	17.2
Prague	10.9	10.7
Jakarta	8.8	10.2
Caracas	8.4	10.4
Warsaw	8.2	8.6
Mexico City	7.9	9.1
Manila	6.8	7.6
Budapest	6.5	5.7
Moscow	6.0	6.2
Mumbai (Bombay)	4.6	5.2
Shanghai	4.5	5.5
Nairobi	3.6	4.0

\*Effective hourly wages in 12 different occupations, weighted according to occupational distribution. Net after deducting taxes and social security contributions

**Working Hours\***

City	Working hours per year	Vacation per year <sup>1</sup>
Abu Dhabi	2 166	25.5
Amsterdam	1 721	26.6
Athens	1 815	22.9
Bangkok	2 245	9.8
Berlin	1 667	30.0
Bogotá	2 187	15.0
Brussels	1 739	21.8
Budapest	1 830	20.7
Buenos Aires	2 097	12.6
Caracas	2 001	23.1
Chicago	1 891	12.1
Copenhagen	1 689	25.0
Dublin	1 782	20.5
Frankfurt	1 730	30.0
Geneva	1 846	24.1
Helsinki	1 757	26.9
Hong Kong	2 312	13.0
Houston	1 875	13.8
Istanbul	2 263	18.1
Jakarta	2 121	9.4
Johannesburg	2 033	16.3
Kuala Lumpur	2 157	13.7
Lisbon	1 806	22.1
London	1 839	20.8
Los Angeles	1 945	10.9
Luxembourg	1 766	25.7
Madrid	1 798	22.0
Manama (Bahrain)	1 989	24.6
Manila	2 238	15.0
Mexico City	2 302	8.7
Milan	1 821	23.8
Montreal	1 799	19.3
Moscow	1 875	20.9
Mumbai (Bombay)	2 254	26.6
Nairobi	2 111	22.8
New York	1 952	11.4
Nicosia	1 804	15.8
Oslo	1 748	21.0
Panama	2 095	25.9
Paris	1 742	25.3
Prague	1 976	18.7
Rio de Janeiro	1 892	22.8
São Paulo	1 906	22.0
Seoul	2 253	14.5
Shanghai	2 043	1.2
Singapore	2 028	11.9
Stockholm	1 824	25.1
Sydney	1 777	20.0
Taipei	2 190	9.0
Tel Aviv	2 128	13.7
Tokyo	1 799	20.0
Toronto	1 927	10.4
Vienna	1 728	23.3
Warsaw	1 796	21.0
Zurich	1 876	22.0

**Long working hours in Asia, short in most of Europe**

The average number of hours worked was highest in the Asian cities included in our survey: 2,149 a year. The corresponding average for Europe was just 1,773 hours. The figure even dropped below 1,700 hours in Berlin and Copenhagen, while London, Geneva and Zurich, with a range of 1,839 to 1,876 hours per year, boasted the hardest-working populations in Western Europe. The cities of the Middle East (averaging 2,070 working hours/year), South America (2,068), North America (1,898) and Eastern Europe (1,869) were positioned between the values recorded for Asia and Western Europe.

The figures were calculated from data on the number of hours worked per week and the number of paid vacation days and public holidays for each of the occupations listed in our questionnaire (weighted to reflect the proportion of the active population engaged in the occupation concerned). Variations in the number of hours worked per year are due to sizeable differences in the work week and vacation policies from region to region. Whereas North American and Asian employees have to be content with an average of around 13 paid days of vacation a year, the annual holiday entitlement in European cities is over 24 days. The average work week in Western Europe, at 38.8 hours, is also well below the international average of 41 hours, with Copenhagen (37 hours), Berlin (37.4) and Brussels (37.7) recording the lowest figures. Conversely, employees in Latin America (averaging 44.1 hours/week), the Middle East (44.3) and Asia in particular (45.2) work much longer hours.

\*Weighted average of 11 different occupations (excluding teacher) <sup>1</sup> Paid working days

### Purchasing power highest in Luxembourg Switzerland and the United States

The purchasing power of incomes takes into account the cost of our entire basket of goods as well as the level of incomes in the cities surveyed. It shows how many products can actually be bought with the income earned. In New York, Los Angeles, Zurich, Geneva and Luxembourg the purchasing power of gross incomes is 80–100% above the average of all the cities in the survey, while in Manila, Mumbai, Moscow, Shanghai and Nairobi purchasing power is only 20% or less of the average. Since the local workers surveyed in non-European cities tend to buy a different basket of goods than European workers, purchasing power comparisons between regions are of limited use only. As far as net income (less tax and social security contributions) is concerned, Luxembourg ranks top once again, clearly ahead of Zurich, Los Angeles, Houston, Geneva, and Chicago. Although Berlin and other Western European cities report high gross incomes, their relatively high tax and social security contributions push them down the net income scale. At the bottom of the purchasing power league table (in net terms) are Manila, Budapest, Shanghai, Moscow and Nairobi with about 20% or less than the average.

### Domestic Purchasing Power\*

City	Gross	Net
	Zurich = 100	Zurich = 100
Luxembourg	104.3	106.9
Geneva	101.3	94.8
Zurich	100.0	100.0
Los Angeles	97.0	100.0
New York	93.9	90.6
Houston	93.7	98.3
Berlin	92.5	73.1
Frankfurt	90.7	72.6
Toronto	90.3	83.3
Brussels	89.7	67.2
Chicago	89.1	93.0
Montreal	88.2	76.8
Copenhagen	87.1	66.1
Amsterdam	78.0	69.9
Vienna	77.3	72.8
Tokyo	69.5	73.8
Milan	67.7	58.7
Dublin	66.4	63.9
Sydney	65.5	65.0
Oslo	64.5	57.7
Stockholm	61.1	51.5
Paris	60.7	55.5
Madrid	59.7	61.7
London	57.4	57.1
Helsinki	55.6	48.1
Nicosia	55.5	57.6
Johannesburg	50.7	45.3
Athens	49.5	49.6
Taipei	47.1	53.9
Tel Aviv	46.2	46.9
Hong Kong	44.8	54.6
Lisbon	44.3	45.5
Seoul	39.5	42.1
Istanbul	37.6	32.5
Buenos Aires	36.1	38.6
Manama (Bahrain)	35.5	43.5
Abu Dhabi	35.2	45.3
Kuala Lumpur	34.9	38.2
São Paulo	33.8	37.7
Singapore	31.3	30.8
Rio de Janeiro	27.0	30.4
Panama	26.5	29.1
Bogotá	26.2	31.0
Prague	22.7	22.3
Bangkok	21.3	25.7
Warsaw	16.4	17.1
Jakarta	14.4	16.8
Mexico City	14.2	16.4
Budapest	13.4	11.8
Caracas	13.4	16.7
Manila	11.1	12.3
Mumbai (Bombay)	10.9	12.4
Moscow	7.1	7.3
Shanghai	6.3	7.8
Nairobi	5.7	6.3

\*Gross and net hourly wages divided by the cost of the total basket, excluding rent

### Working Time Required to Buy . . .\*

City	1 hamburger <sup>1</sup> in minutes	1kg of bread in minutes	1kg rice in minutes
Abu Dhabi	30	10	16
Amsterdam	19	13	14
Athens	15	12	22
Bangkok	39	33	22
Berlin	18	12	14
Bogotá	53	22	15
Brussels	21	13	19
Budapest	91	29	54
Buenos Aires	38	22	19
Caracas	117	36	34
Chicago	9	13	7
Copenhagen	20	12	8
Dublin	19	11	20
Frankfurt	16	13	16
Geneva	15	10	8
Helsinki	30	31	21
Hong Kong	11	14	8
Houston	9	11	9
Istanbul	31	16	23
Jakarta	103	39	18
Johannesburg	26	8	17
Kuala Lumpur	20	22	11
Lisbon	33	20	15
London	20	9	13
Los Angeles	10	16	8
Luxembourg	13	7	6
Madrid	34	14	17
Manama (Bahrain)	30	22	18
Manila	77	60	63
Mexico City	71	50	37
Milan	22	23	18
Montreal	14	12	9
Moscow	104	59	106
Mumbai (Bombay)	85	63	92
Nairobi	193	64	104
New York	12	12	8
Nicosia	26	15	21
Oslo	22	12	16
Panama	41	26	16
Paris	21	18	20
Prague	56	16	41
Rio de Janeiro	41	40	16
São Paulo	35	28	12
Seoul	25	32	25
Shanghai	75	143	81
Singapore	24	41	12
Stockholm	22	23	29
Sydney	14	17	8
Taipei	20	14	13
Tel Aviv	32	8	14
Tokyo	9	14	22
Toronto	12	8	12
Vienna	17	14	14
Warsaw	53	23	39
Zurich	14	9	7

### An average 37 minutes work for a Big Mac

Differences in purchasing power are particularly graphic when expressed as the price of a benchmark good in terms of the average hourly net wage. For example, if the price of a kilogram of bread in a given city is divided by the net hourly wage there (the weighted average over the 12 occupations surveyed), we find that the average global citizen must work 24 minutes to earn the money to pay for it. While the amount of time required is relatively low in North America (12 minutes), the Middle East (14 minutes) and Western Europe (15 minutes), considerably more time is needed by workers in the cities of Asia (43 minutes), South America (32 minutes) and Eastern Europe (32 minutes) to earn their daily bread. Unreasonably lengthy working times, such as the 143 minutes recorded for Shanghai or 63 in Mumbai, reflect the fact that bread is not a staple food in these cities and is therefore relatively expensive. In contrast, East Asians (not including Shanghai) work an average of only 22 minutes to earn the money to purchase a kilo of rice, a staple food of much greater importance in this region (the international average is 24 minutes work).

If the same comparisons are run for a Big Mac – a food item available around the world without major variations in quality – the message for fast food devotees is that North American cities are the place to be, as a Big Mac costs the average wage-earner there just 11 minutes of effort. The cities of Western Europe and the Middle East also come in below the global average of 37 minutes for a Big Mac, while Caracas and Nairobi are at the other end of the scale, requiring nearly two and more than three hours of work respectively for the money to buy a Big Mac.

\* The price of the product cited is divided by the weighted net hourly wage in 12 occupations <sup>1</sup> Big Mac

**Currency movements only partially neutralize inflation differentials**

Despite major exchange rate adjustments since the 1994 UBS "Prices and Earnings Around the Globe" survey, the early summer of 1997 saw the Swiss franc valued at approximately the same level vis-à-vis the average of the currencies used in the cities surveyed (excluding Caracas and Mexico City). At 3%, however, the cumulative rate of inflation in Switzerland for the period from 1994 to 1997 was considerably lower than the 15% average for the countries included in the survey. This is reflected in the increase of the global average price level from 67.2 to 74.3 percentage points (in relation to Zurich = 100). Surprising as it may seem at first glance, this development is largely due to the fact that many of the newly industrializing economies with relatively high rates of inflation kept their currencies largely stable versus the US dollar whilst the second quarter of 1997 saw the Swiss franc/US dollar exchange rate approach the same level as in the second quarter of 1994.

With the exception of Mexico and Japan, the currencies of all countries firmed in real terms versus the Swiss franc during the three-year period under review. The depreciation of the yen – which was not accompanied by a corresponding increase in domestic inflation – explains Tokyo's loss of a few percentage points compared to Zurich, the city of reference, in our price level comparison. By contrast, the "inching up" of price levels in cities such as Nairobi, Caracas or Bogotá can largely be attributed to the fact that their relatively high rates of inflation were only partially offset by currency depreciation.