International comparisons of manufacturing compensation

Japan and many Western European economies had higher manufacturing hourly compensation costs than the United States in 1994; the trade-weighted average for 24 foreign economies was 88 percent of the U.S. level

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In 1994, hourly compensation costs for manufacturing production workers in Japan rose to a new high of 125 percent of the U.S. average. Costs in most of the 14 European countries for which 1994 data are available also rose relative to the United States, reaching a trade-weighted average of 115 percent of U.S. costs, about the same relative level as in 1991 but below the 1992 peak of 123 percent. Relative compensation costs in the Asian newly industrializing economies (NIE's) of Hong Kong, Korea, Singapore, and Taiwan rose to a new high of 34 percent of U.S. costs, while those in Canada declined to 92 percent. Costs in Mexico remained unchanged, at 15 percent of the U.S. level.

For the 24 foreign economies for which 1994 data are available, trade-weighted average costs increased to 88 percent of U.S. costs, 2 percentage points above the 1993 level, and matching the previous high in 1992.[1]

This article presents comparative data on manufacturing hourly compensation costs through 1994 for the United States and 24 foreign economies, as well as the most recent statistics for 4 additional countries for which 1994 data are not yet available. Table 1 presents hourly compensation costs for selected years for each of the 29 economies and for selected trade-weighted economic groups[2] indexed to the U.S. level. Table 2 shows average annual percent changes for selected countries and economic groups, and table 3 contains data on the structure of compensation. (Measures for the "foreign economies" are computed both including and excluding Mexico and Israel because the rapid rates of inflation in those two countries in earlier years distort the trade-weighted average percent changes measured in national currencies.) Chart 1 shows the trend in hourly compensation in U.S. dollars over the period 1975–94 for selected countries and economic groups, and chart 2 shows the structure of compensation in 1994 for selected countries.

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Compensation cost measures

The Bureau of Labor Statistics has developed comparative measures of hourly compensation costs to provide a basis for assessing international differences in employer labor costs. Comparisons based on the more readily available average earnings statistics published by many countries may be very misleading. National definitions of average earnings differ considerably; average earnings do not include all items of labor compensation; and the omitted items of compensation frequently represent a large and growing portion of total compensation.

Total compensation costs are defined as (1) all payments made directly to the worker—pay for time worked (basic time and piece rates plus overtime premiums, shift differentials, other premiums and bonuses paid each pay period, and cost-of-living adjustments), pay for time not worked (such as for vacations and holidays), seasonal or irregular bonuses and other special payments, selected social allowances, and the cost of payments in kind—before payroll deductions of any kind, and (2) employer expenditures for

A note on the measures

The hourly compensation measures discussed in this article are based on statistics available to BLS as of April 18, 1995. They are prepared specifically for international comparisons of employer labor costs in manufacturing. The methods used, as well as the results, differ somewhat from those for other BLS series on U.S. compensation costs.

Labor cost measures. The compensation measures are computed in national currency units and are converted to U.S. dollars at prevailing commercial market currency exchange rates. These exchange rates are appropriate measures for comparing levels of employer labor costs, but they do not indicate relative living standards of workers or the purchasing power of their incomes. Prices of goods and services vary greatly among countries, and commercial market exchange rates do not reliably indicate relative differences in prices.

Data limitations. Because hourly compensation is partly estimated, these statistics should not be considered precise measures of comparative compensation costs. The comparative level figures in this article are averages for all manufacturing industries, and thus are not necessarily representative of all component industries. In the United States and some countries, such as Japan, differentials in hourly compensation costs vary widely by industry. Other countries, such as Germany and Sweden, have narrow differentials.

legally required insurance programs and contractual and private benefit plans (such as retirement plans, health insurance, unemployment insurance, and family allowances). In addition, for some countries (such as France and Sweden), compensation is adjusted for other taxes on payrolls or employment even if they do not finance programs that directly benefit workers, because such taxes are regarded as labor costs.[3]

Changes in relative compensation cost levels over time are affected by differences in underlying wage and benefit trends. They also are affected by frequent, and sometimes sharp, changes in relative currency exchange values.

Hourly compensation costs, 1994

U.S. hourly compensation costs for manufacturing production workers increased 2.2 percent between 1993 and 1994, the smallest annual increase since 1987. The average increase in the 24 foreign economies for which 1994 data are available was 4.9 percent before adjustment for exchange rate changes. Only Canada, Australia, New Zealand, and Switzerland had smaller national currency-based increases than the United States. At the upper end, Mexico and the Asian NIE's averaged increases of over 10 percent. The trade-weighted average increase for the European economies was 3.7 percent.

The trade-weighted exchange rate for the 24 foreign economies was almost unchanged in 1994, rising only 0.4 percent relative to the U.S. dollar. While the average trade-weighted exchange rate was little changed, there were substantial exchange rate changes for individual economies. Australia, Japan, New Zealand, Finland, and Switzerland had currency appreciations against the U.S. dollar of over 7 percent. Canada, Mexico, Israel, and Spain had currency depreciations of around 5 percent or more. The trade-weighted average increase for the European economies was 1.7 percent.

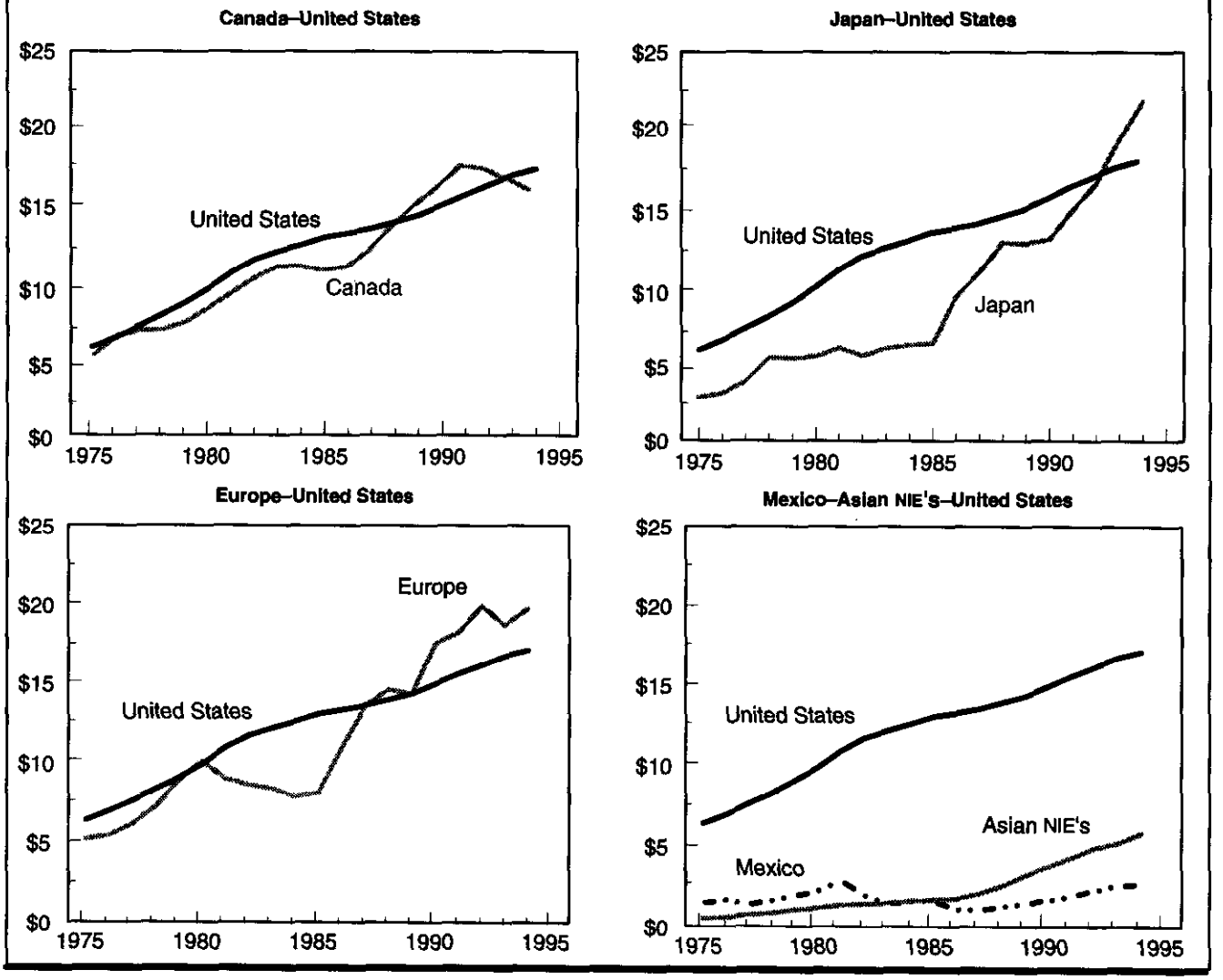
After adjustment for exchange rate changes, hourly compensation costs in U.S. dollars rose 5.3 percent in 1994 in the 24 economies. Two countries—Canada and Spain—had declines in U.S. dollar-based hourly compensation costs, and three others—Mexico, Italy, and Portugal—had smaller increases than the U.S. increase of 2.2 percent. In each case, this resulted primarily from exchange rate depreciations relative to the U.S. dollar. At the upper end, Japanese compensation costs measured in U.S. dollars rose 13 percent, with the yen appreciating nearly 9 percent, and costs in the Asian NIE's rose an average 12 percent, nearly all accounted for by national currency-based increases. European hourly compensation costs rose an average 5.4 percent, measured in U.S. dollars.

On a relative basis, Germany[4] had the highest hourly compensation costs, reaching a new peak of 160 percent of the U.S. cost level of $17.10. Switzerland had the second highest costs at 145 percent of the U.S. level, followed by Belgium at 134 percent, Austria at 127 percent, and Japan at 125 percent. Five other European countries—Denmark, Finland, the Netherlands, Norway, and Sweden—also had higher hourly compensation costs than the United States. France matched the U.S. level, and three European countries—Italy, Portugal, and the United Kingdom—had lower costs. The trade-weighted average for the 14 European countries for which 1994 data are available was 115 percent of the U.S. level, up 3 percentage points over 1993, but 8 percentage points below the peak relative level of 123 percent reached in 1992. Costs in all non-European economies except Japan were below the U.S. level, ranging from 15 percent in Mexico to 80 percent in Australia.

Long-term trends

In the United States, hourly compensation costs for manufacturing production workers increased an average 5.5 percent per year between 1975 and 1994. These costs grew by 9.2 percent annually between 1975 and 1980; by 5.7 percent be-

Chart 1. Hourly compensation costs in U.S. dollars for production workers in manufacturing, selected countries and economic groups, 1975–94



tween 1980 and 1985; by 2.8 percent between 1985 and 1990; and by an average of 3.5 percent between 1990 and 1994. In most of the foreign economies studied, compensation cost increases also have abated since 1985 when measured in national currency terms. However, changes in relative exchange rates have substantially altered the underlying pattern in some periods.

In terms of trade-weighted averages for the 14 European economies for which 1994 data are available, hourly compensation costs measured in U.S. dollars rose 14–1/2 percent per year in the 1975–80 period, fell 4 percent per year from 1980 to 1985, rose about 16–1/2 percent per year in the 1985–90 period, and rose 2–1/2 percent per year between 1990 and 1994. The decline over the 1980–85 period reflected the dollar's appreciation, which resulted in a decline in the trade-weighted value of the European currencies of 11–1/2 percent per year. The sharp increase for Europe in the 1985–90 period reflected the subsequent depreciation of the U.S. dollar, which resulted in an increase in the trade-weighted value of the European currencies of 10–1/2 percent per year. The U.S. dollar rose about 2 percent per year over the full 1990–94 period against the European currencies, largely because the average European currency value had fallen about 10–1/2 percent in 1993. However, the Japanese yen, which, like the European currencies, had risen 10–1/2 percent per year between 1985 and 1990, continued to appreciate at an average of 9 percent per year between 1990 and 1994.

In 1975, the trade-weighted average cost level in the 14 European economies was 81 percent of U.S. compensation costs; it rose to 102 percent in 1980, but began falling in 1981,

Table 1. Indexes of hourly compensation costs for production workers in manufacturing, selected countries and economic groups, selected years, 1975–94

[United States = 100]

Country or area	1975	1980	1985	1989	1990	1991	1992	1993	1994
United States	100	100	100	100	100	100	100	100	100
Canada	94	88	84	103	106	110	105	98	92
Mexico	23	22	12	10	11	12	14	15	15
Australia	88	86	63	87	88	87	81	75	80
Hong Kong	12	15	13	19	21	23	24	26	28
Israel	35	38	31	54	57	56	56	53	53
Japan	47	56	49	88	86	94	101	114	125
Korea	5	10	9	22	25	30	32	33	37
New Zealand	50	54	34	54	56	54	49	48	52
Singapore	13	15	19	22	25	28	31	31	37
Sri Lanka	4	2	2	2	2	3	2	3	-
Taiwan	6	10	12	25	26	28	32	31	32
Austria	71	90	58	99	119	116	126	122	127
Belgium	101	133	69	108	129	127	138	128	134
Denmark	99	110	62	101	120	117	124	114	120
Finland	72	83	63	118	141	136	123	99	110
France	71	91	58	88	102	98	105	97	100
Germany[1]	00	125	74	124	147	146	157	154	160
Greece	27	38	28	38	45	44	46	41	-
Ireland	48	60	46	67	79	78	83	73	-
Italy	73	83	59	101	119	119	121	96	95
Luxembourg	100	121	59	94	110	107	116	110	-
Netherlands	103	122	67	105	123	117	126	119	122
Norway	106	117	80	128	144	139	143	121	122
Portugal	25	21	12	21	25	27	32	27	27
Spain	40	60	36	62	76	78	83	69	67
Sweden	113	127	74	122	140	142	152	106	110
Switzerland	96	112	74	117	140	139	144	135	145
United Kingdom	53	77	48	74	85	88	89	76	80
Trade-weighted measures:									
24 foreign economies[2]	60	67	52	77	83	86	88	86	88
less Mexico, Israel	65	72	57	85	91	94	97	94	96
OECD[3]	76	85	66	97	105	108	110	107	109
Europe	82	103	62	101	118	118	124	112	115
European Union	80	101	61	98	116	115	122	111	114
Asian NIE's	8	12	13	23	25	28	30	31	34

[1] The former West Germany.

[2] Twenty-nine countries or areas, less the United States, and four countries for which 1994 data are not available.

[3] Organization for Economic Cooperation and Development. Excludes Mexico, which joined the organization in 1994.

NOTE: Dash indicates data not available.

reaching its lowest point—62 percent—in 1984–85. In 1987, European compensation costs matched the U.S. level, and in 1992 they peaked at 123 percent of U.S. costs, before declining to 115 percent in 1994.

Japanese hourly compensation costs were less than 50 percent of U.S. costs in 1975, rose to 66 percent of the U.S. level by 1978, fell to one-half or less of U.S. costs in 1982–85, and have risen relative to the United States in most years since—from 70 percent of U.S. costs in 1986 to 125 percent in 1994. Japan surpassed the average European compensation cost level in 1993, and in 1994, only four European countries had higher hourly compensation costs.

Compensation costs in the Asian NIE's were only 5 to 12 percent of U.S. costs in 1975—about the relative level of Japanese costs in the early 1960's. Asian NIE's relative compensation costs then rose gradually, reaching 20 percent of the U.S. level by the end of the 1980's—about the relative level of Japanese costs by the end of the 1960's. The trade-weighted average cost level for the Asian NIE's reached 30 percent of the U.S. level in 1992 and 34 percent in 1994. In contrast, the Mexican compensation cost level was 23 percent of the U.S. level in 1975, peaked at about a quarter of U.S. costs in 1981, and subsequently fell to only 8 percent by 1986, before rising to 15 percent of U.S. costs in 1993–94.

Compensation structure

The structure of compensation costs differs among the economies covered in this article. In part, this reflects differences in the fringe benefits available to workers, such as the amount

of paid leave and provisions for health insurance. However, it also reflects differences in the financing of social benefits. The costs of social benefits are included in employer compensation costs only if they are financed from taxes on payrolls or employment; they are not included if they are financed from general revenues, as are the British national health system and family allowances in Germany.

Pay for time worked. In 1994, pay for time worked accounted for between 80 and 85 percent of total compensation costs in Denmark and New Zealand and for between 70 and 75 percent in the United States, Canada, Australia, Ireland, Norway, and the United Kingdom. However, pay for time worked was only about 60 percent of total compensation costs in Japan and 50 to 60 percent in many European countries, including France, Germany, and Italy.

The very high ratios in Denmark and New Zealand largely reflect very low employer social insurance expenditures. The ratios for Canada, Australia, Ireland, Norway, and the United Kingdom result from a combination of relatively low ratios for both other direct pay and social insurance expenditures. The ratio for the United States largely reflects a low ratio for other direct pay.

Other direct pay. Other direct pay, which consists primarily of vacation and holiday pay and seasonal bonuses, accounted for nearly 30 percent of total compensation in Japan, where

Recent exchange rate movements

As of September 1995, the currencies of most of the economies studied had appreciated from their 1994 average levels relative to the U.S. dollar. The major exception was the Mexican peso, which had fallen to 55 percent of its 1994 value. The average trade-weighted exchange rate for the other 23 economies was up 4 percent.

The trade-weighted exchange rate for Europe was up 8 percent. Individual European exchange rate increases were 20 percent for Finland; 10 to 15 percent for Austria, Belgium, Denmark, France, Germany, the Netherlands, Norway, and Switzerland; about 6 to 9 percent for Portugal, Spain and Sweden; and 2 percent for the United Kingdom. The only European currency exchange rate to remain almost unchanged was the Italian lira.

The average value of the Canadian dollar was up 1 percent. The Japanese yen was less than 2 percent higher than its 1994 average value as of September. However, the yen had been over 20 percent higher in April, May, and June. Among the other Pacific rim economies, the New Zealand dollar was up 11 percent relative to the U.S. dollar in August, the Singapore dollar was up 8 percent, the Korean won was up 5 percent, the Australian dollar was up 3 percent, the Hong Kong dollar was unchanged, and the Taiwanese dollar was down 4 percent.

Chart 2. **Hourly compensation costs in U.S. dollars for production workers in manufacturing, by cost component, nine countries, 1994**

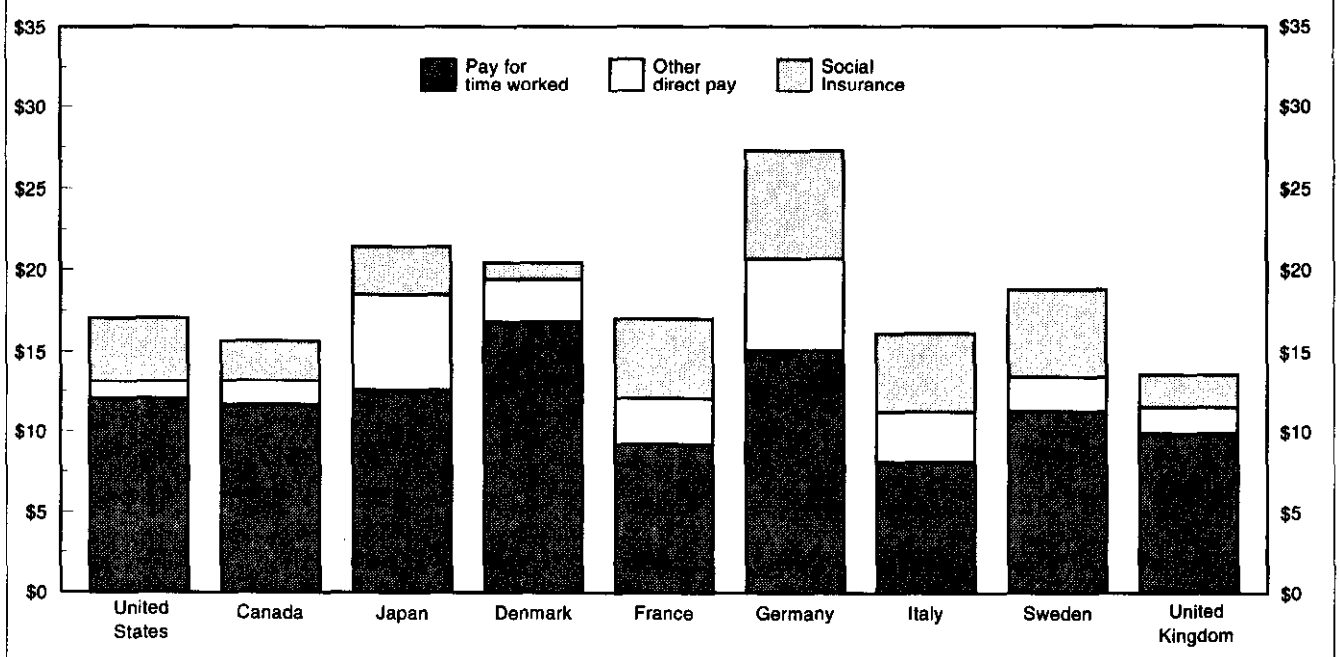


Table 2. Annual percent changes in hourly compensation costs in U.S. dollars, hourly compensation costs in national currency, and exchange rates (U.S. dollars per national currency unit), selected countries and economic groups, selected periods, 1975–94

Country or area	1975–94	1975–80	1980–85	1985–90	1990–94	1991	1992	1993	1994
Hourly compensation costs in U.S. dollars									
United States	5.3	9.2	5.7	2.8	3.5	4.5	3.7	3.6	2.2
Canada	5.2	7.8	4.8	7.7	-.2	8.0	-.8	-3.7	-4.0
Mexico	3.1	8.5	-6.4	.6	12.3	17.7	18.7	11.8	2.0
Japan	10.9	13.0	2.8	15.1	13.7	14.5	11.1	16.8	12.7
France	7.2	14.6	-3.4	15.2	2.8	.2	10.7	-3.9	5.0
Germany[1]	8.0	14.2	-4.9	18.0	5.6	3.3	12.0	1.1	6.3
Italy	6.8	11.8	-1.3	18.4	-2.3	4.8	5.4	-18.4	1.0
Spain	8.3	18.4	-4.6	19.4	.3	7.7	9.6	-14.0	-.4
Sweden	5.2	11.7	-5.0	16.7	-2.6	5.8	11.0	-28.0	6.3
United Kingdom	7.6	17.5	-3.7	15.2	1.7	8.3	4.9	-11.6	6.7
Trade-weighted measures:[2]									
24 foreign economies[3]	8.1	12.5	1.0	12.6	6.4	10.1	8.3	2.4	5.3
less Mexico, Israel	8.6	13.0	1.8	14.1	5.8	9.4	7.3	1.5	5.7
OECD[4]	7.5	11.7	.7	13.2	4.6	8.1	6.1	.5	4.4
Europe	7.3	14.6	-4.1	16.7	2.6	3.9	9.1	-6.9	5.4
Asian NIE's	13.9	18.9	7.0	18.5	11.5	15.7	13.3	5.6	11.9
Hourly compensation costs in national currency									
United States	5.3	9.2	5.7	2.8	3.5	4.5	3.7	3.6	2.2
Canada	6.9	10.8	8.1	4.3	3.8	6.0	4.6	2.8	1.7
Mexico	38.5	23.2	51.6	62.4	17.6	26.0	21.5	12.9	10.4
Japan	4.9	7.0	4.0	4.2	4.2	6.4	4.6	2.3	3.6
France	8.7	14.3	12.3	4.2	3.3	3.9	3.8	2.9	2.7
Germany[1]	5.6	7.5	4.7	4.7	5.7	6.1	5.4	7.2	4.1
Italy	12.0	18.0	15.9	7.9	5.2	8.6	4.6	4.3	3.4
Spain	13.2	23.8	13.4	7.9	7.3	9.8	7.9	7.1	4.6
Sweden	8.7	12.2	9.5	8.3	4.0	8.1	6.9	-3.7	5.2
United Kingdom	9.7	16.4	8.3	8.1	5.7	9.3	4.9	4.0	4.6
Trade-weighted measures:[2]									
24 foreign economies[3]	11.0	13.6	14.0	11.9	6.7	9.7	7.4	5.0	4.9
less Mexico, Israel	8.0	11.9	7.9	6.3	5.5	7.9	5.8	4.1	4.3
OECD[4]	6.8	10.4	7.2	5.0	4.3	6.3	4.7	3.2	3.0
Europe	7.9	12.2	8.4	5.7	4.9	6.6	4.9	4.3	3.7
Asian NIE's	14.0	19.6	11.6	13.0	11.4	15.6	11.4	8.2	10.7
Exchange rates									
United States	-	-	-	-	-	-	-	-	-
Canada	-1.5	-2.7	-3.1	3.2	-3.9	1.8	-5.2	-6.3	-5.6
Mexico	-25.5	-11.5	-38.3	-38.0	-4.5	-6.8	-2.5	-.7	-7.7
Japan	5.8	5.6	-1.1	10.5	9.1	7.7	6.2	14.1	8.7
France	-1.4	.3	-14.0	10.5	-.4	-3.5	6.7	-6.6	2.2
Germany[1]	2.2	6.2	-9.2	12.7	-.1	-2.6	6.3	-5.6	2.0
Italy	-4.6	-5.3	-14.8	9.8	-7.1	-3.5	.7	-21.7	-2.4
Spain	-4.4	-4.3	-15.9	10.8	-6.6	-1.9	1.6	-19.7	-4.8
Sweden	-3.2	-.4	-13.2	7.8	-6.4	-2.1	3.9	-25.3	1.0
United Kingdom	-1.9	.9	-11.0	6.6	-3.7	-.9	-.1	-15.0	2.0
Trade-weighted measures:[2]									
24 foreign economies[3]	-1.9	-.5	-9.4	2.9	-.2	.5	.9	-2.4	.4
less Mexico, Israel	.6	1.1	-5.6	7.4	.3	1.4	1.4	-2.5	1.3
OECD[4]	.7	1.3	-6.0	7.9	.3	1.7	1.3	-2.6	1.4
Europe	-.5	2.2	-11.5	10.5	-2.1	-2.5	3.9	-10.7	1.7
Asian NIE's	.0	-.5	-4.2	4.9	.2	.3	1.9	-2.3	1.1

[1] Former West Germany.

[2] Trade-weighted percent changes computed as the trade-weighted average of the rates of change for the individual countries or areas.

[3] Twenty-nine countries or areas, less the United States, and four countries for which 1994 data are not available.

[4] Organization for Economic Cooperation and Development. Excludes Mexico, which joined the organization in 1994.

NOTE: Dash indicates data are not available. Rates of change are based on the compound rate method.

Table 3. Pay for time worked, other direct pay, total direct pay, and social insurance expenditures as a percent of hourly compensation costs for production workers in manufacturing, 29 countries or areas, 1994

Country or area	Pay for time worked	Other direct pay	Total direct pay	Social insurance expenditures
United States	70.5	6.3	76.9	23.1
Canada	74.5	9.6	84.1	15.9
Mexico	–	–	88.7	11.3
Australia	73.5	9.9	83.5	16.5
Hong Kong	–	–	96.8	3.2
Israel	–	–	82.5	17.5
Japan	58.8	27.6	86.4	13.6
Korea	–	–	85.2	14.8
New Zealand	81.6	12.4	94.0	6.0
Singapore	65.3	18.2	83.6	16.4
Sri Lanka[1]	67.6	18.1	85.7	14.3
Taiwan	–	–	92.6	7.4
Austria	49.8	23.3	73.1	26.9
Belgium	52.3	20.3	72.6	27.4
Denmark	82.4	12.7	95.1	4.9
Finland	56.1	17.9	74.0	26.0
France	54.2	16.6	70.8	29.2
Germany[2]	55.3	20.5	75.8	24.2
Greece[3]	61.7	18.5	80.2	19.8
Ireland[1]	74.3	10.0	84.3	15.7
Italy	50.3	19.1	69.4	30.6
Luxembourg[4]	70.2	15.6	85.8	14.2
Netherlands	57.0	19.7	76.7	23.3
Norway	71.5	11.7	83.1	16.9
Portugal	–	–	76.2	23.8
Spain	–	–	74.6	25.4
Sweden	59.8	11.7	71.5	28.5
Switzerland	65.2	18.2	83.4	16.6
United Kingdom	72.7	11.8	84.5	15.5

[1] Data relate to 1993.
[2] Former West Germany.
[3] Data relate to 1992.
[4] Data relate to 1991.
NOTE: Dash indicates data are not available.

workers receive the equivalent of about 3 months of regular wages in bonuses. It accounted for about 15 to 20 percent in many European countries, where workers receive minimum vacation entitlements of 4 to 6 weeks, as well as vacation or yearend bonuses of 1 to 2 months' wages. However, in the United Kingdom, Ireland, and most Scandinavian countries, where workers do not receive seasonal bonuses, other direct pay accounted for only a little more than 10 percent of total compensation costs. In the United States, where irregular bonuses also account for only a small fraction of total compensation and workers generally have shorter vacation entitlements, other direct pay was about 6 percent of compensation.

Social insurance expenditures. Expenditures by employers on social insurance and other labor taxes accounted for about 30 percent of compensation costs in Italy and France in 1994, and for over 25 percent in Austria, Belgium, Finland, Spain, and Sweden.

In Denmark, universal old-age pensions, medical benefits, and family allowances are entirely financed and other benefits are partly financed out of general revenues, so that employer social insurance expenditures accounted for only 5 percent of compensation costs. In New Zealand, old-age pensions, sickness and maternity benefits, unemployment benefits, and family allowances are financed out of general revenues, with the result that employer social insurance expenditures accounted for only 6 percent of compensation costs. In Canada, Australia, Japan, Ireland, and the United Kingdom, where several social insurance benefits also are financed from general government revenues, employers' payments for such benefits accounted for 11 to 17 percent of total compensation costs. In Mexico and in all of the Asian NIE's, social insurance expenditures accounted for at most 15 percent of total compensation costs. In the United States, they were 23 percent. □

Footnotes

[1] These comparisons are based on 1994 annual average market exchange rates; therefore, they do not take account of subsequent changes in relative exchange rates.

[2] The trade weights used to compute the average compensation cost measures for the selected economic groups are the sum of U.S. imports of manufactured products for consumption (customs value) and U.S. exports of domestic manufactured products (f.a.s. value) in 1992 for each country or area and each economic group. A description of the trade weights and trade-weighted measures was published in *International Comparisons of Hourly Compensation Costs for Production Workers, 1994*, Report 893 (Bureau of Labor Statistics, June 1995).

[3] The BLS definition of hourly compensation costs is not the same as the International Labor Office (ILO) definition of total labor costs. BLS compensation costs do not include all items of labor costs. The costs of recruitment, employee training, and plant facilities and services—such as cafeterias and medical clinics—are not included because data are not available for the United States and most other countries. The labor costs not included account for no more than 4 percent of total labor costs in any country for which the data are available.

[4] Data for Germany relate to the former West Germany. Average monthly earnings for production workers in manufacturing in the former East Germany were 63.5 percent of earnings in the former West Germany in July 1994. Data are not yet available on other compensation costs.