New international price series published by Nation and region

Beginning in April 1992, the Bureau of Labor Statistics began separate publication of import price indexes for selected countries and regions that are important trading partners

Michelle Albert Vachris

The International Price Program of the Bureau of Labor Statistics recently began reporting quarterly U.S. import price indexes by country or region of origin. These indexes, first published with the April 30, 1992, release of first-quarter data, are available for the following countries and regions:[1]

- Developed countries
  - Manufactured goods
  - Nonmanufactured goods
- Developing countries
  - Manufactured goods
  - Nonmanufactured goods
- Canada
  - Manufactured goods
  - Nonmanufactured goods
- European Community
  - Manufactured goods
  - Nonmanufactured goods
- Japan
- Asian Newly Industrialized Countries (NIC's)

As shown in chart 1, Canada, the European Community, Japan, and the Asian NIC's accounted for about 70 percent of total U.S. imports in 1985, the reference year for the dollar-volume weights used in calculating the indexes. The trade share for the developed countries was 65.4 percent, compared with 34.6 percent for the developing countries.

This article explains the background of the new series, and discusses their trends since fourth-quarter 1990—the first period for which estimates were developed—through first-quarter 1992. Because the methodology for the new series differs somewhat from that used to develop the Bureau's other international price series, it also is described briefly. The conclusion outlines plans for future expansion and modification of the new series.

Background of the new series

In 1982, the International Price Program began publishing an all-commodities import index, which represents imports from all U.S. trading partners. As the importance of foreign trade to the U.S. economy grew, so did interest in tracking price trends for imports by country of origin. Anecdotal evidence suggested that import price trends would vary by source country, especially for those product areas significantly affected by changes in currency exchange rates. Interest in analyzing these trends has become increasingly pronounced since 1985, when the U.S. dollar began depreciating against the currencies of the Nation's major trading partners.[2]

The *average exchange rate* indexes for detailed categories of imports, produced by the International Price Program since 1987,[3] give further credence to the notion that price trends differ by

Michelle Albert Vachris is an economist in the Division of International Prices, Bureau of Labor Statistics.

country of origin. For example, during the period December 1990 through March 1992 (the same span covered by the new country or region of origin indexes), the import average exchange rate index for apparel was relatively flat, while the corresponding index for road vehicles and parts was more volatile. (See chart 2.) The difference between these two price series, while influenced by economic and environmental factors, is directly related to differences in country of origin. Apparel imports from the Asian NIC's (whose exchange rates tend to be pegged to the dollar) accounted for 39 percent of U.S. apparel imports in 1991. In contrast, 88 percent of U.S. imports of road vehicles and parts came from Canada, the European Community, and Japan, whose currencies float freely. To the extent that these data reflect exchange rates and other factors, the country of origin for the products is an important determinant of the different price trends.

In 1989, the International Price Program initiated a research project to determine the feasibility of producing country of origin import indexes from the program's import data base. This source consists of data on imported products that are sampled from the Consumption Entry Documents filed by importers with the U.S. Customs Bureau when products are imported to this country. The product universe is defined as all merchandise except that which is not consistently imported, such as works of art, military goods, and used items.

To support an index series, one must be able to collect price information for a wide variety of products in each period. Thus, a major part of the feasibility study was to ascertain whether U.S. import trade with a country or region was consistent as to composition and volume over time. The list of countries and regions for which the new indexes are published was developed by analyzing the pattern of U.S. trade flows and the price data collected by the International Price Program. Estimates are published separately for Canada and Japan because it is relatively easy to obtain adequate import price data for these countries. In addition, regional indexes—currently, those for the Asian NIC's and the European Community—are published because estimates for these groupings of nations are important for analyzing U.S. import trade. It is not possible to publish indexes for individual countries within these regions because products traded often change country of origin between data reference periods; however, it is possible to maintain a consistent series for the region of origin over time.

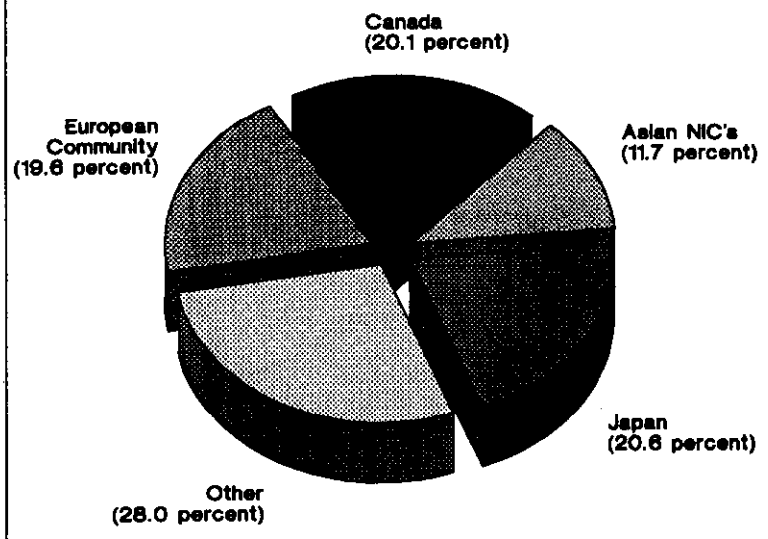
Recent price trends

During 1991, prices of total imports from the world fell 4.1 percent. The country of origin indexes, however, show different underlying developments. (See table 1.) Since December 1990, the measures for total imports from the European Community, Japan, Canada, and the Asian NIC's have generally trended above the world total import indexes, as shown in the top panel of chart 3.

The differences between the measures for the developing and developed countries, shown in the bottom panel of the chart, are the most dramatic: the index for the former group fell 12.7 percent, contrasted with a 1.0-percent decline in the index for the latter. This vast difference is primarily explained by the underlying U.S. trade patterns with the two groups; specifically, the price movements for nonmanufactured goods, which tend to be more volatile than those for manufactured goods, are weighted more heavily in the index for the developing countries than in that for the developed countries. During 1991, prices of imports from Canada decreased 3.3 percent, and the Asian NIC's posted a more moderate decline of 0.3 percent. The price index for the European Community rose 0.2 percent, and that for Japanese imports was up 1.6 percent.

During the first quarter of 1992, prices of imports from the developed countries increased 0.1 percent, while the index for the developing

Chart 1. Dollar-volume shares of total U.S. imports accounted for by selected countries and regions of origin, 1985



countries decreased 2.3 percent. The indexes for imports from Canada and the European Community both declined, by 0.7 percent and 0.2 percent, respectively. In contrast, the index for Japan increased 0.6 percent, and that for the Asian NIC's rose 0.4 percent.

The indexes for total imports are further broken down into series for nonmanufactured and manufactured goods. These groupings are formed within the Standard International Trade Classification (SITC), revision 2, system. Specifically, SITC categories 0 through 4 are defined to be nonmanufactured goods, and categories 5 through 9 are manufactured goods. (Indexes for nonmanufactured goods are not published separately for Japan and the Asian NIC's, because virtually all U.S. imports from these countries are manufactured goods.)

In general, the index trends for nonmanufactured goods seem to be heavily influenced by petroleum prices. Sharp declines in import petroleum prices during the first quarter of 1991 are reflected in the nonmanufactured goods indexes for the developed and developing countries, and for Canada. During 1991, the index for nonmanufactured goods from developing countries dropped 27.7 percent. The decline was less steep for Canada and the developed countries, with the indexes falling 12.2 percent and 8.7 percent, respectively. The nonmanufactured goods index for the European Community declined 1.4 percent for 1991, primarily due to a 6.5-percent drop during the second quarter.

The index for the developing countries led the widespread declines in nonmanufactured goods prices for the quarter ended March 1992, dropping 6.4 percent, while the same index for the developed countries fell 1.4 percent. Prices of nonmanufactured goods from the European Community decreased 2.3 percent, while Canadian nonmanufactured goods prices were down 0.5 percent.

While nonmanufactured goods indexes tend to be influenced by developments in petroleum markets, price changes for manufactured goods tend to be more directly affected by exchange rate movements. Chart 4 compares exchange rate movements with the country of origin indexes for manufactured goods. The exchange rate index reflects changes in the value of one unit of foreign currency in terms of U.S. dollars.[4] One can see that, for the European Community countries and Japan, the country of origin index tends to move with the exchange rate. The exchange rate movements are much more pronounced than the import price changes, but they seem to follow similar trends. That is, as the dollar appreciates against the currency of another country (negative change in the foreign currency index), manufactured imports from that country become cheaper for U.S. purchasers.[5] The relationship between the country of origin index and the exchange rate seems to be much weaker for the Asian newly industrialized countries and for Canada.

This difference between the European Community and Japan on the one hand, and the NIC's and Canada on the other can be explained in part by the fact that goods imported from some countries tend to be priced in foreign currency, while those from other countries tend to be priced in U.S. dollars. Relatively speaking, more goods imported from the European Community and Japan are priced in foreign currencies than are goods imported from the Asian NIC's or Canada. During 1991, about 10 percent of the manufactured goods portion of the International Price Program import data base was priced in European Community currencies, and about 4 percent was priced in Japanese yen. In contrast, only about 1 percent of these products were priced in the currencies of the Asian NIC's and Canadian dollars, combined.

In 1991, manufactured goods prices rose 1.2 percent for imports from the developed countries, and edged down 0.1 percent for those from the developing countries. This pattern was also

Chart 2. Quarterly average exchange rate indexes for apparel and autos, December 1990–March 1992

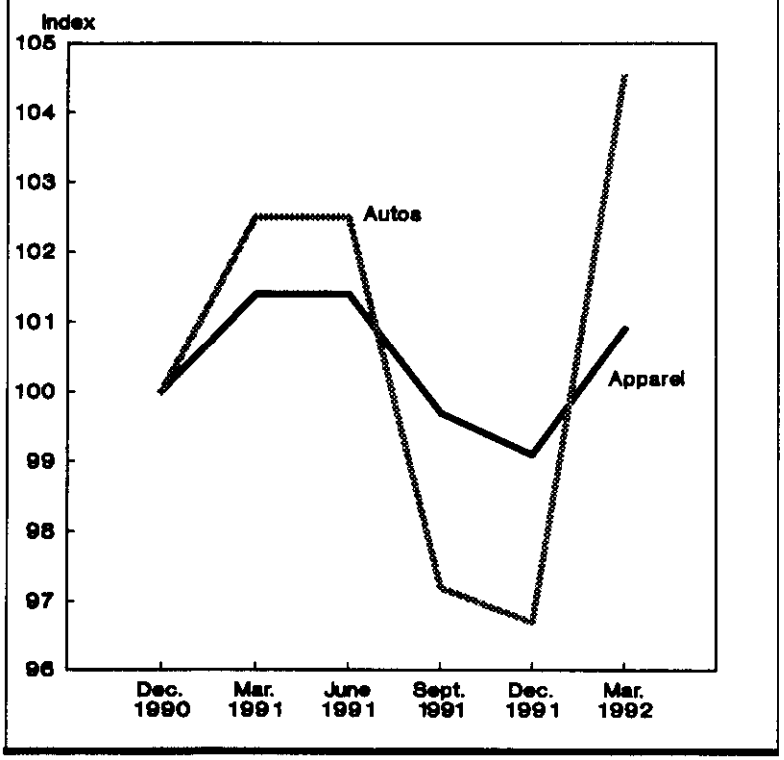
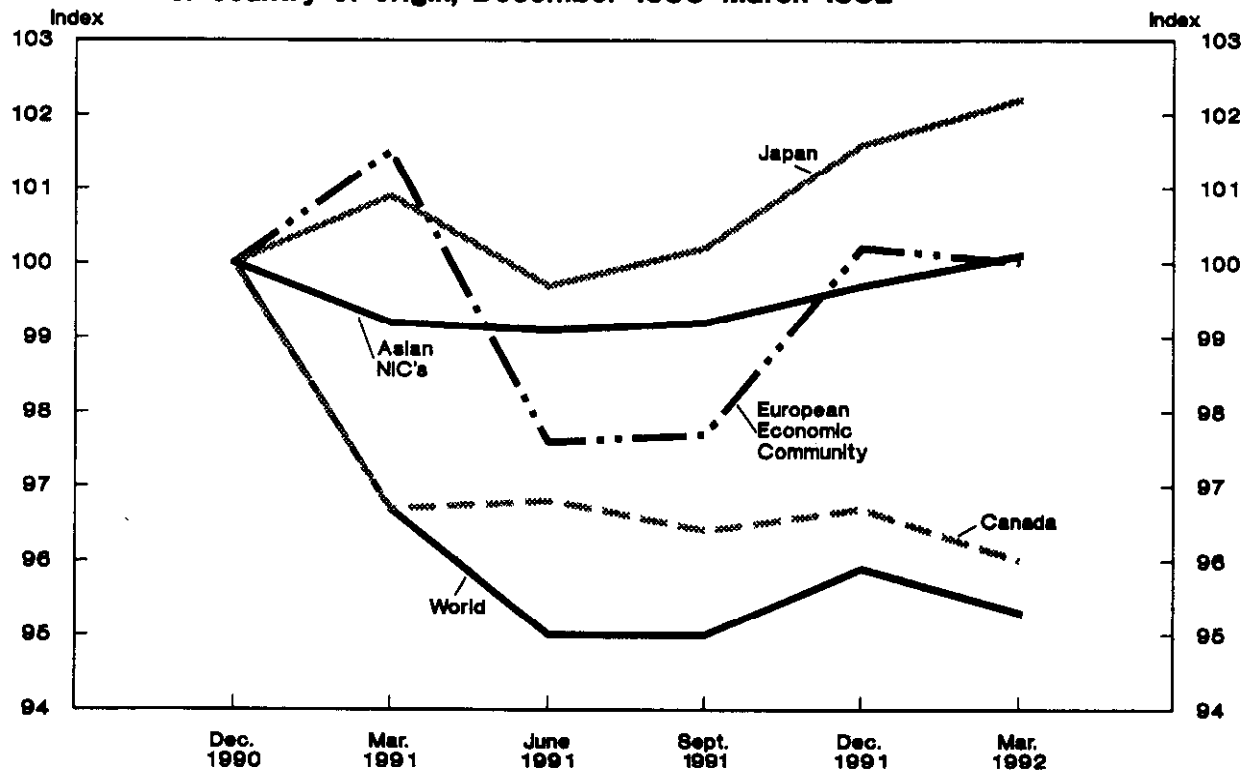


Chart 3. **Quarterly price indexes for total imports from the world and by region or country of origin, December 1990–March 1992**



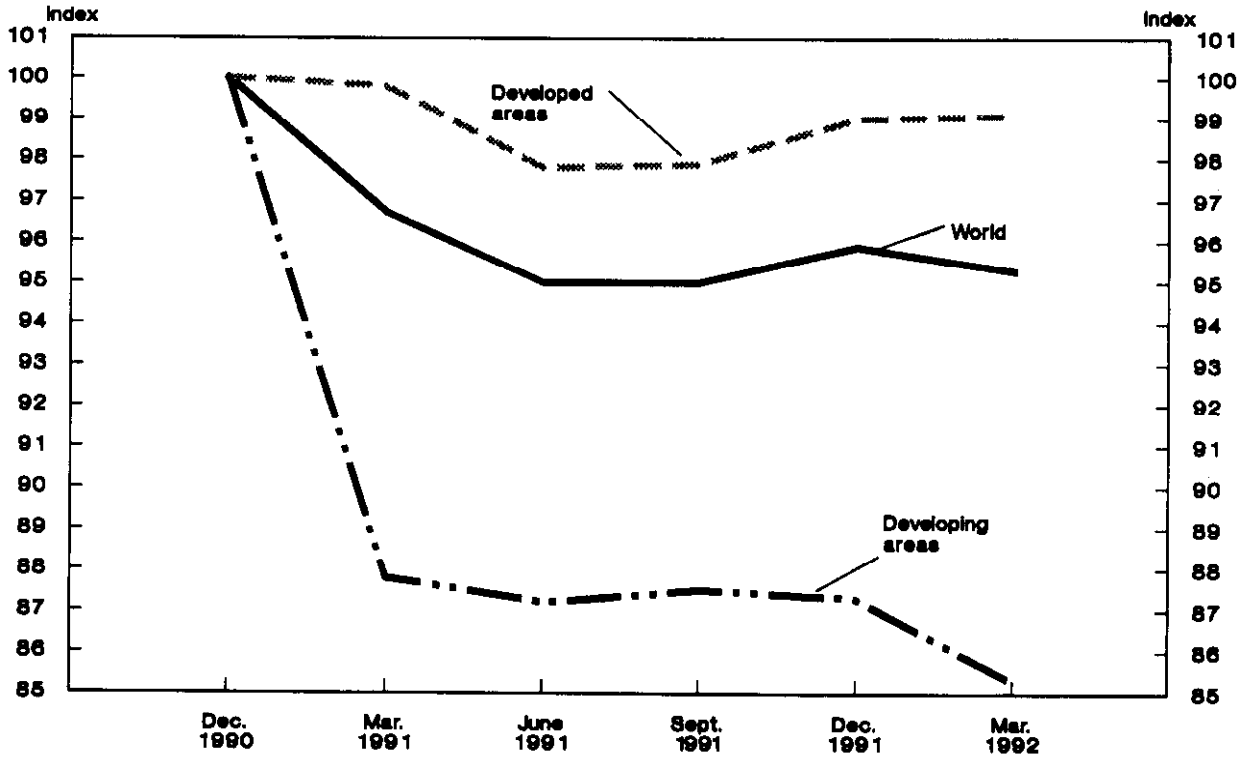
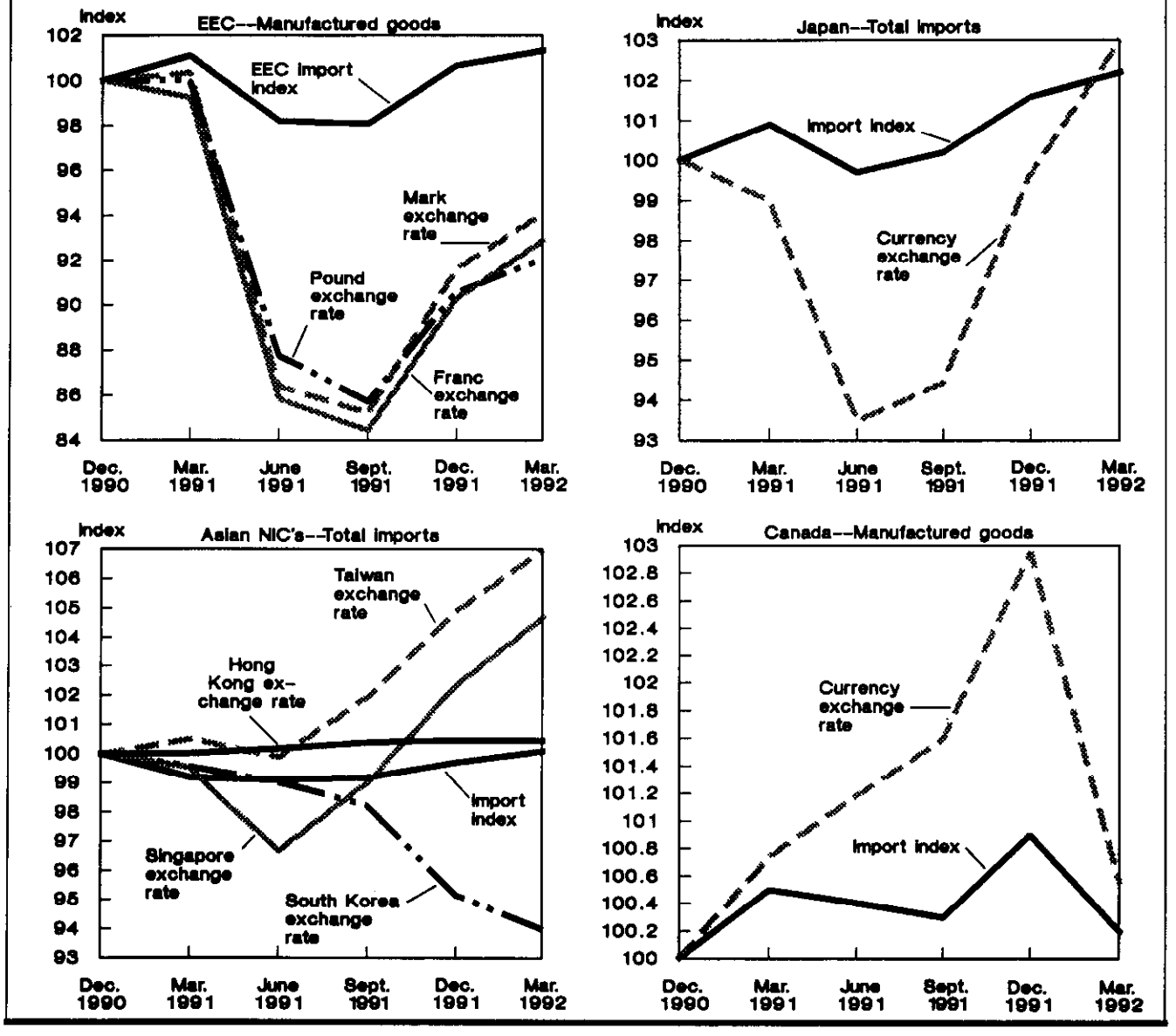


Chart 4. Trends in the exchange rates of foreign currencies against the U.S. dollar and in country of origin import indexes, selected countries and regions, December 1990–March 1992



reflected in the more detailed country and regional indexes, as prices of manufactured goods from Canada and the European Community rose 0.9 percent and 0.7 percent, respectively. The import index for Japan, which primarily consists of manufactured goods, increased 1.6 percent for the year. In contrast, the index for the Asian NIC's, which are defined to be developing countries, decreased 0.3 percent.

In the first quarter of 1991, all of the new indexes for manufactured goods increased, except that for Canada, which edged down 0.7 percent.

A word on methodology

The new country of origin import indexes employ the same general measurement principles as the world import indexes published by the Interna-

Table 1. **Quarterly and annual changes in import price indexes by country or region of product origin, first-quarter 1991–92**

Series	Percent of U.S. imports	Percent change					
		Quarter ended—				Year ended December 1991	Quarter ended March 1992
		March 1991	June 1991	September 1991	December 1991		
Developed countries	65.355	−0.2	−2.0	0.1	1.1	−1.0	0.1
Manufactured goods	51.211	1.5	−1.7	.0	1.4	1.2	.5
Nonmanufactured goods	14.145	−6.5	−3.1	.2	.6	−8.7	−1.4
Developing countries	34.645	−12.2	−.7	.3	−.2	−12.7	−2.3
Manufactured goods	18.762	−.1	−.1	−.2	.3	−.1	.3
Nonmanufactured goods	15.883	−26.5	−1.6	1.2	−1.2	−27.7	−6.4
Canada	20.116	−3.3	.1	−.4	.3	−3.3	−.7
Manufactured goods	13.606	.5	−.1*	−.1	.6	.9	−.7
Nonmanufactured goods	6.510	−11.3	.6	−1.1	−.5	−12.2	−.5
European Community	19.595	1.5	−3.8	.1	2.6	.2	−.2
Manufactured goods	14.433	1.1	−2.9	−.1	2.7	.7	.6
Nonmanufactured goods	5.163	2.6	−6.5	.9	1.9	−1.4	−2.3
Japan	20.566	.9	−1.2	.5	1.4	1.6	.6
Asian Newly Industralized Countries	11.706	−.8	−.1	.1	.5	−.3	.4

tional Price Program. The indexes are estimated with a modified Laspeyeres formula, using 1985 import trade dollar values as weights. As in the world indexes, all import trade values from SITC category 9, except for SITC 971 (gold), are excluded. The prices used in the estimation of country of origin indexes are a subset of the price data used in the world import indexes.

The weighting scheme for country of origin indexes differs slightly from that used for the world indexes, primarily because of the smaller sample size of the country of origin indexes. For the world SITC indexes, price data are weighted using the 7-digit Tariff Schedule of the United States, Annotated (TSUSA), and then aggregated to broader categories using the SITC system. Prices for the country of origin indexes are weighted solely according to the SITC system. The level of detail at which the weights are applied varies by product area, from the 3-digit to the 1-digit SITC level.

Future of the new series

Beginning with the release of January 1993 data, the country of origin import indexes will be published on a monthly basis. These indexes will be weighted using 1990 trade dollar values, and will be weighted and classified according to the Standard Industrial Classification (SIC) system in order to provide a more natural distinction between manufactured and nonmanufactured goods. As the International Price Program converts fully from a quarterly to a monthly survey during 1993, sample size will be closely monitored in order to determine whether indexes can be published for additional regions or countries. □

Footnotes

The country of origin indexes are published in the quarterly Bureau of Labor Statistics press release on Import and Export Price Indexes. Historical data beginning with the fourth quarter of 1990 may be obtained by calling the Bureau's Division of International Prices, (202) 272-5020. After July 31, 1992, these data may be requested by writing the author at the Bureau of Labor Statistics, Mail Code 5, 2 Massachusetts Avenue, N.E., Washington, DC 20212.

[1] Developed and developing regions are defined according to the standard U.S. Bureau of the Census definition; the European Community (EC) includes Belgium, the Netherlands, Denmark, France, Germany, the United Kingdom, Italy, Ireland, Spain, Portugal, Greece, and Luxembourg; and the Asian Newly Industrialized Countries (NIC's) include Hong Kong, Singapore, South Korea, and Taiwan.

[2] Some earlier studies examined price trends by country of origin, but they were based on analyses of unit value indexes. See, for example, Michael Knetter, "Price Discrimination by U.S. and German Exporters," *American Economic Review*, 1979, no. 1, pp. 198–210. For a discussion of the problems encountered in using unit value data, see William Alterman, "Price Trends in U.S. Trade: New Data, New Insights," in P. Hooper and J. D. Richardson, eds., *International Economic Transactions* (Chicago, University of Chicago Press, 1991), pp. 109–43.

[3] The average exchange rate indexes for various categories of products measure the change in the price of *trade-weighted* baskets of foreign currencies against the U.S. dollar. For methodological documentation of the foreign currency indexes, see William Alterman, David S. Johnson, and John Goth, "BLS publishes average exchange rate and foreign currency indexes," *Monthly Labor Review*, December 1987, pp. 47–49.

[4] The exchange rates used to derive this index were identical to those used by the International Price Program to convert foreign currency prices to U.S. dollars. That is, they are monthly averages for the month previous to the reference month for the published indexes.

[5] The change in the currency exchange rate is not completely reflected in the index because foreign exporters have some leeway in determining the amount of exchange rate fluctuation to "pass through" to U.S. purchasers. For a discussion of "pass-through" rates, see William Alterman,

The Information Revolution

The Industrial Revolution brought about great changes in employment patterns. The manual skills of the farmer, craftsman, and artisan were reproduced by machine designs, which, once operational, could perform the same tasks faster, more cheaply, and with less effort. A skilled shoe-maker who could make fewer than one pair of shoes a day was replaced by a machine producing thousands of shoes in the same time. Similarly, a farmer who cultivated a few acres of land by hand and with animals could cultivate hundreds with a tractor. For the first time in the history of civilization, manual skills acquired through many years of apprenticeship and long practical experience became obsolete. Machines were introduced everywhere, bringing unemployment to farmers, craftsmen, and artisans, and creating a new form of employment—that of the factory worker. Except for a few cases, mostly involving works of art, manual expertise lost its economic benefits to machines. The Information Revolution is bringing similar changes in employment patterns that involve supplementing, substituting, or amplifying mental work by computers. The obvious concern, of course, is how fast such changes will come.

—Spyros G. Makridakis
Forecasting, Planning and Strategy for the 21st Century (New York, The Free Press, A Division of Macmillan, Inc., 1990), p. 84.