



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

REGIONAL EXPORT GROWTH: LESSONS FROM THE STATE-LEVEL FOREIGN TRADE DATA

*Tim R. Smith**

Recent growth in exports has helped to sustain the national recovery and provided an increasingly important base of economic activity for the United States. The increased importance of foreign markets for U.S. products has brought more awareness of the importance of relationships between regional economies and the international marketplace. State and local policy makers, business persons, and regional analysts are asking how recent growth in U.S. exports has been shared among the nation's various regions. Until recently, however, little was known about the regional distribution or growth of export activity. Information about regional export activity remains sketchy.¹ Nonetheless, new Commerce Department data allow a comparison of regional exports in 1987 and 1988, a critical period for export growth. Although the period of study is too short to identify trends, a snapshot comparison of the available 1987 and 1988 export data shows that regions have not shared equally in the export expansion. Industrial mix and destination are important factors that distinguish the differing international success of regions.

*Tim R. Smith is a senior economist at the Federal Reserve Bank of Kansas City. Michael Morgan, an intern at the bank, assisted in the preparation of the essay. The views and opinions expressed in this essay are solely those of the author and do not necessarily represent those of the Federal Reserve Bank of Kansas City or the Federal Reserve System.

¹Newly available state export data published by the Commerce Department give a clearer view of regional export activity. Yet this view suffers from some serious limitations. First, the state export data do not accurately reflect the production locations of exported goods. Second, the state of origin of almost one-fourth of total U.S. exports cannot be identified. And third, the published Commerce Department data do not include details about industrial mix or destinations of state exports. This paper supplements the published state export data with previously unpublished manufactured export data furnished by the Foreign Trade Division of the Bureau of the Census, U.S. Department of Commerce. These data were obtained from shippers' export documents and include information about industrial mix and destination of state exports. Despite the additional detail, these data suffer from the same deficiencies as the published state export data. Therefore, the states have been grouped into nine regions based on similar manufacturing activities and proximity to major ports. See Michael G. Farrell and Anthony Radspieler [2] for additional discussion of available trade data and their limitations.

Data and Methodology

The Commerce Department began publishing state export totals in 1987. These data received widespread attention from the business press and state policy makers.² In particular, the data were used to rank states according to export activity. But such rankings are misleading. The state-level export data are intended to identify the state where the merchandise began its export journey. The reported state of origin, however, is not always the state where the goods are manufactured or produced. The state of origin also can be the state where goods are consolidated by an intermediary for overseas shipment or the state where the port of embarkation is located.

The problem of identifying origin--the attribution error--is especially pronounced for agricultural and mined commodities. Small shipments of these commodities often are combined at storage facilities along their journey to the port. This practice of consolidation makes attributing exports to the state where the goods are produced nearly impossible. The state of origin for these goods often is reported by the shippers as the state of consolidation or the port state instead of the state in which the goods are produced.³

The attribution error in the export data for 1987 and 1988 can be reduced by excluding agricultural and mined exports. Agriculture and mining account for only about 10 percent of U.S. exports, but including them skews the aggregate export values toward states with major ports while understating the total exports from agricultural and mining states. By excluding agriculture and mining, the resulting manufactured export data are much less distorted by attribution error than the published total export data. Moreover, because individual shipments of manufactured goods are less fungible than agricultural or mined products, they are less likely to suffer attribution errors caused by consolidation.

Some of the remaining attribution error in the state manufacturing data can be overcome by grouping states into multistate regions.⁴

²Total exports by state of origin for 1987 are published in U.S. Department of Commerce [4] and total exports by state of origin for 1988 are published in U.S. Department of Commerce [5]. For an example of the treatment of these data in the press, see *Business America* [1] and *U.S. News and World Report* [6].

³For example, Louisiana, a major port state for agricultural products, reports crop exports far exceeding those from top producing states such as Kansas. Much of the Kansas crop exports and those for other major crop-growing states likely are included in the Louisiana export total.

⁴This essay considers export activity in nine regions of the United States. The regions were chosen by grouping states with similar kinds of manufacturing activity and, where possible, by grouping states

Regional rankings reflect a more accurate account of goods produced for export because attribution errors are less serious between regions than between states. This is especially true for manufacturing because industrial plants often locate near ports to make it easier to receive imported materials and to export finished goods. The location of manufacturing activity is less constrained than is the location of agriculture and mining, which is determined by the location of natural resources.

Focusing on regional aggregations of manufactured exports reduces the attribution error, but does not eliminate it. Moreover, it is impossible to determine how the attribution error affects 1987 and 1988 data differently. Growth rates can be influenced both by changes in exports or changes in the nature of the attribution error if reporting practices change. As a consequence, only broad qualitative comparisons across regions, industries, and destinations can be made using the regional export data.

In addition to the attribution error, another shortcoming of the state export data is that the origins of many exports are reported as unknown. The state of origin is unknown for about 20 percent of 1988 manufactured exports. Therefore, all tables referred to in this essay include an unknown origin category both as a reminder of this shortcoming and to give some information about the industrial composition and the destinations for the manufactured exports of unknown origin.

Regional Growth of Manufactured Exports

The real value of U.S. exports increased 21 percent from 1987 to 1988, but the increase was not distributed evenly across regions.⁵ The nominal values of manufactured exports in both years and an estimate

according to proximity to major ports. The Plains and Rocky Mountain regions intentionally were not associated with the West region states because doing so would seriously overstate the manufactured exports from these interior regions.

⁵The change in real exports was approximated by deflating nominal export values (the first two columns in Table 1) using the Producer Price Index. Although an export price index for manufactured goods would yield a better approximation of real export growth, the PPI was chosen because disaggregated Producer Price Indexes could be applied to individual industrial categories of exports. Disaggregated export price indexes are not matched easily to the industry categories described in this essay. An additional source of error in estimating real export growth is introduced if transportation costs increased at different rates than producer prices overall, because all nominal export values are reported f.a.s. (free alongside ship) and thus include transportation from the point of origin to the port.

of the inflation-adjusted change in these values are shown in Table 1. Regional export growth ranged from 31.9 percent in the Mid-Atlantic region to 14.0 percent in the Great Lakes region. Export growth fell significantly below national export growth in only three regions--Great Lakes, New England, and the Plains. Export growth in some regions--the Mid-Atlantic, Rocky Mountain, Southwest, and West--greatly exceeded export growth nationwide.

Despite the wide variation in export growth across regions, the share of U.S. exports emanating from each region remained remarkably constant from 1987 to 1988 (Table 1). The largest shares of exports with identifiable origins were retained by the West, the Great Lakes, and the Mid-Atlantic regions. The smallest export shares remained in the Plains, Rocky Mountain, New England, and South Central regions.

Because regions with bigger economies generally have more export activity than regions with smaller economies, scaling regional exports with some measure of overall regional economic activity provides a better way to rank the regions. Table 2 puts export growth in the context of overall economic growth in the various regions by including personal income as a benchmark. Real exports grew considerably faster than real personal income in all regions. Consequently, the proportion of each region's total economic activity (measured by personal income) accounted for by exports of manufactured goods (measured by the value of shipments) increased substantially in all regions. The increase in the ratio of manufactured exports to personal income ranged from 10.5 percent in the Great Lakes region to 27.9 percent in the Southwest region.

Composition of Regional Export Growth

In addition to providing a general picture of how recent export growth has been distributed across regions, the regional export data provide useful information about the composition of export growth. Knowing how individual industries contribute to each region's total export growth and how each industry's export growth is distributed across regions can provide insight into the important relationship between regional industry mix and trade. Moreover, the growth in exports from each region to specific foreign destinations and the regional distribution of growth in exports to each country shed light on the relative importance of certain trading partners to regional trade.

Industrial Mix

One important dimension of the expanding linkage between regional economies and global markets is the industrial mix of regional exports.

State and local policy makers are particularly interested in how important individual industries have been to regional export growth and what role each region has played in the expansion of exports by individual industries.

The regional export data allow an examination of the industrial composition of manufactured export growth in each region. Table 3 lists the percentage of the total change (from 1987 to 1988) in exports from each region attributable to growth in exports from individual industrial categories. For example, 36 percent of the total increase in exports from the Great Lakes region (14 percent from 1987 to 1988) can be attributed to growth in nonelectrical machinery.

The most notable feature of the table is the relatively large share of export growth accounted for by durable goods. Durables accounted for more than three-fourths of national export growth. The share of regional export growth accounted for by durables exceeded the national average in five of the nine regions. Durables' share of manufactured export growth was largest in the Rocky Mountains, where over half of the region's export growth appears attributable to nonelectrical machinery and instruments. Growth in primary metals exports, the category that includes smelting and refining of iron and steel, was the main contributor to overall manufactured export growth from the Mid-Atlantic region, another region with a large durables growth component.

Among durables industries, high technology industries appear to have been the largest contributor to manufactured export growth in most regions. Except for the importance of the primary metals industry to export growth in the Mid-Atlantic region, manufactured export growth in all regions was dominated by growth in industries related to high technology: nonelectrical machinery, electrical machinery, and instruments (Table 3).⁶ These three industries together accounted for 42.9 percent of overall manufactured export growth nationwide. In New England, these industries contributed 70.9 percent of total manufactured export growth.

Nondurables industries accounted for a smaller share of the growth in manufactured exports than did the durables industries. The food and chemicals industries, however, appear to have been important to export growth in some regions. For example, food products accounted for 26.6 percent of total manufactured export growth in the South Central region and 18.5 percent in the Plains region. Chemicals accounted for over 10 percent of total manufactured export growth in the South Atlantic, South Central, and Southwest regions.

⁶Nonelectrical machinery includes computers and computer storage and peripheral devices.

Although the industrial composition of regional export growth gives some insight into the nature of each region's participation in international markets, this information does not reveal the relative contribution of each region to the overall growth in exports from each industry. Table 4 allocates growth in each industry's exports to individual regions. The resulting regional distribution points to regions that are important to the growth in exports of particular goods. For example, 68.6 percent of the total increase in exports of primary metals (78.0 percent from 1987 to 1988) can be attributed to the Mid-Atlantic region.⁷

Some clear patterns emerge in Table 4. Growth in durables exports stems mainly from four regions--the Great Lakes, Mid-Atlantic, Southwest, and West. Together, these regions account for nearly three-fourths of the growth in durable goods exports. Nondurables export growth came predominantly from the Sun Belt regions--South Atlantic, South Central, and Southwest--and the West. These regions together account for over 62 percent of nondurables export growth.

Destinations

Another important dimension of the relationship between regional economies and international markets is the destination of regional exports. The participation of regions in the ongoing expansion of U.S. exports is not only tied to regional industry mix, but also to the relative growth in exports to different trading partners. Issues of interest to state and local policy makers include how important individual trading partners have been to regional export growth and what role each region has played in the expansion of exports to individual countries.

Growth in regional exports to particular destinations significantly is affected by differential movements in exchange rates. Although the depreciation of the U.S. dollar that began in 1985 is credited for much of the growth in exports from 1987 to 1988, the dollar did not depreciate by the same amount against all currencies. Therefore, regions that export mainly to Europe or Japan are affected differently than regions that export to other countries. For example, growth in exports to Canada has not benefited as much from dollar depreciation as growth in exports to Europe or Japan. The dollar has fallen more against such currencies as the mark, the pound, and the yen than against the Canadian dollar.

⁷In this example, 2.5 percent of the total growth in primary metals exports is accounted for by the unknown category. The size of the unknown category's growth share can be used to judge potential distortions in the regional growth shares. In general, the larger the share of an industry's export growth attributable to unknown origin, the larger the potential distortion of the regional growth shares.

The regional export data allow regional growth of manufactured exports to be attributed to different destinations. Table 5 shows the shares of total manufactured export growth from each region accounted for by the top ten U.S. export destinations.⁸ For example, 32.2 percent of the total increase in exports from the Southwest (28.1 percent from 1987 to 1988) can be attributed to growth in exports to Mexico.

Canada and Japan account for most of the recent growth in regional exports. As predicted by the relatively small movement in the U.S.-Canadian dollar exchange rate, U.S. manufactured exports to Canada grew less in real terms than manufactured exports to European countries and Japan, but the share of growth attributable to shipments to Canada is large because a large proportion of total exports is shipped there.⁹

Although manufactured export growth in most regions is dominated by growth in exports to Canada and Japan, some exceptions deserve mention. Shipments to Taiwan account for the largest share (26.6 percent) of export growth in the Mid-Atlantic region, and shipments to Mexico account for the largest share of export growth in the Southwest. In addition, a large share (18.2 percent) of export growth in New England is accounted for by exports to Great Britain.

Another way to look at the relationship between regions and export destinations is to decompose growth in manufactured exports to a single country into the shares contributed by each region. This decomposition provides information about where foreign countries shop for manufactured goods in the United States. State and local policy makers are interested in the relative participation of their region in total U.S. export growth to a given country.

The regional export data allow total growth of manufactured exports to particular destinations to be attributed to the different regions (Table 6). Although established regional export relationships appear to be determined largely by proximity, recent growth patterns seem to be less closely related to proximity.¹⁰ For example, the Great Lakes region is responsible for the largest share of exports to Canada, but the West

⁸About 65 percent of total U.S. exports are shipped to these ten countries. See Tim R. Smith [3] for a discussion of the relative importance of these trading partners in 1987 regional export activity.

⁹Manufactured exports to Canada increased 10.1 percent in real terms from 1987 to 1988, compared with a 29.0 percent increase in manufactured exports to Japan and a 24.9 percent increase in manufactured exports to Great Britain. See Table 6 for the overall real growth rates for all destinations and see Smith [3] for additional information about the relative importance of each destination in 1987 regional trade activity.

¹⁰See Smith [3] for more information about regional export relationships in 1987.

and Mid-Atlantic regions account for much larger shares of the growth in exports to Canada than the Great Lakes. And the West--the closest region to Pacific Rim destinations--accounts for the largest share of growth in exports to nearly all countries. The only exceptions are the dominance of the Southwest in export growth to Mexico and the dominance of the Mid-Atlantic region in export growth to the Netherlands and Taiwan.

Conclusions

Little was known about the linkages between regions and the global marketplace until recently. Data are now available to shed some light on characteristics of regional exports. Despite the difficulty in identifying where exported products are made, manufactured export data provide new information about the industrial mix and destinations of regional exports. Although firm conclusions about trends in regional export growth cannot be based on only two years of data, combining the regional information from 1987 and 1988 provides some preliminary insight into the composition of manufactured export growth. The much anticipated improvement in U.S. exports can be understood in terms of the contribution to export growth made by specific regions. Moreover, two additional dimensions of regional manufactured export growth--industry mix and destination--can be explored.

References

1. *Business America* (March 28, 1988), p. 8.
2. Michael G. Farrell and Anthony Radspieler, "Census Bureau State-By-State Foreign Trade Data: Historical Perspectives: Current Situation; Future Outlook," unpublished manuscript, Foreign Trade Division, Bureau of the Census, U.S. Department of Commerce (May 1989).
3. Tim R. Smith, "Regional Exports of Manufactured Products," *Economic Review*, Federal Reserve Bank of Kansas City (January 1989).
4. U.S. Department of Commerce, Bureau of the Census, *Highlights of U.S. Export and Import Trade* (December 1987).
5. U.S. Department of Commerce, Bureau of the Census, *Summary of U.S. Export and Import Merchandise Trade* (December 1988).
6. *U.S. News and World Report* (June 13, 1988), p. 71.

Table 1
Value of Manufactured Exports by Region, 1987-1988

	Value of Manufactured Exports (\$ billions)		Change in Real Value of Exports* (percent)	Regional Share of Manufactured Exports (percent)	
	1987	1988		1987	1988
Great Lakes (Illinois, Indiana, Michigan, Ohio, Wisconsin)	32.3	38.1	14.0	15.0	14.0
Mid-Atlantic (Dist. of Columbia, Delaware, Maryland, New Jersey, New York, Pennsylvania)	24.9	34.2	31.9	11.5	12.6
New England (Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, Vermont)	11.5	13.8	16.7	5.3	5.1
Plains (Iowa, Kansas, Minnesota, Missouri, North Dakota, Nebraska, South Dakota)	8.4	10.2	17.0	3.9	3.7
Rocky Mountain (Colorado, Idaho, Montana, Utah, Wyoming)	2.7	3.5	26.8	1.2	1.3
South Atlantic (Florida, Georgia, North Carolina, South Carolina, Virginia, West Virginia)	20.0	25.4	20.6	9.3	9.3

Table 1 (continued)

	Value of Manufactured Exports (\$ billions)		Change in Real Value of Exports* (percent)	Regional Share of Manufactured Exports (percent)	
	1987	1988		1987	1988
South Central (Alabama, Arkansas, Kentucky, Louisiana, Mississippi, Tennessee)	10.3	13.3	22.4	4.8	4.9
Southwest (Arizona, New Mexico, Oklahoma, Texas)	21.4	28.9	28.1	9.9	10.6
West (Alaska, California, Hawaii, Nevada, Oregon, Washington)	38.1	51.1	29.8	17.7	18.8
Unknown Origin	46.4	53.6	10.7	21.5	19.7
Total	215.9	272.1	21.0	100.0	100.0

Source: Compiled from "State of Export Series" provided on magnetic tape by the Foreign Trade Division, Bureau of the Census, U.S. Department of Commerce

Note: In all tables numbers may not add to totals due to rounding

*Real growth estimated by deflating regional export values from individual industries by the Producer Price Index for each industry (SIC) and then summing to obtain regional totals

Table 2
Personal Income and Value of Manufactured Exports by Region
 1987-1988

	Personal Income (\$ billions)		Change in Real Personal Income* (Percent)		Regional Share of Personal Income		Ratio of Manufactured Exports to Personal Income (x 100)		Change in Ratio of Manufactured Exports to Personal Income (Percent)
	1987	1988	1987	1988	1987	1988	1987	1988	
Great Lakes	637.5	681.2	2.6	16.9	16.9	16.9	5.1	5.6	10.5
Mid-Atlantic	764.1	823.6	3.5	20.3	20.3	20.4	3.3	4.2	27.6
New England	238.4	259.5	4.5	6.3	6.3	6.4	4.8	5.3	10.6
Plains	260.6	274.9	1.3	6.9	6.9	6.8	3.2	3.7	14.9
Rocky Mountain	98.6	103.6	0.9	2.6	2.6	2.6	2.7	3.4	25.7
South Atlantic	521.5	565.2	4.0	13.8	13.8	14.0	3.8	4.5	17.2
South Central	261.8	279.0	2.3	6.9	6.9	6.9	3.9	4.8	21.3
Southwest	340.4	359.4	1.3	9.0	9.0	8.9	6.3	8.0	27.9
West	645.8	695.7	3.4	17.1	17.1	17.2	5.9	7.3	24.5
All States	3768.7	4042.1	2.9	100.0	100.0	100.0	5.7	6.7	17.5

Source: Compiled from "State of Export Series" provided by magnetic tape on the Foreign Trade Division, Bureau of the Census, U.S. Department of Commerce. Personal income data from Data Resources, Inc.

*Nominal personal income amounts deflated by implicit price deflator for personal consumption expenditure to calculate change in real personal income

Table 3
Industry Shares of Regional Manufactured Export Growth, 1987-1988
(Percent)

Industry	Great Lakes	Mid-Atlantic	New England	Plains	Rocky Mountain	South Atlantic	South Central	South-west	West	Unknown	Total
Durables	86.8	87.7	82.1	65.1	90.2	65.9	47.2	75.3	85.9	62.0	77.7
Lumber, Wood	0.9	0.8	0.1	0.4	1.1	0.9	2.3	0.5	6.7	3.7	2.6
Furniture	0.9	0.1	0.1	0.5	0.3	0.4	0.3	0.2	0.2	0.5	0.3
Stone, Clay,											
Glass	1.5	1.1	0.3	1.7	2.5	0.8	0.7	0.8	0.2	0.5	0.7
Primary Metals	8.8	42.2	4.0	5.2	15.3	2.5	7.1	1.9	3.1	2.4	10.7
Fabricated Metals	5.8	2.1	0.8	2.1	1.1	0.5	2.2	1.0	1.6	-1.5	1.6
Nonelectrical											
Machinery	36.0	10.6	14.5	38.9	30.7	25.0	15.9	24.9	22.4	20.4	22.0
Electrical											
Machinery	3.8	6.4	20.9	1.1	6.1	7.9	2.3	17.3	11.7	-2.9	8.3
Transportation											
Equipment	15.2	7.9	4.2	-11.4	2.9	14.8	9.0	16.9	27.1	29.7	16.9
Instruments and											
Related Products	12.6	10.5	35.5	24.7	29.3	12.3	6.3	10.6	11.5	9.7	12.6
Miscellaneous	1.4	6.1	1.7	1.8	0.9	0.9	1.2	1.1	1.4	-0.7	1.9
Nondurables	10.8	10.7	16.3	33.0	9.3	33.3	51.6	23.6	12.8	22.0	19.3
Food	4.4	1.3	1.8	18.5	4.1	3.0	26.6	4.9	7.0	7.0	6.2
Tobacco	0.0	0.0	0.0	0.0	0.0	3.8	2.4	0.0	0.0	0.0	0.5
Textiles	0.6	0.7	0.5	0.1	0.0	0.0	0.3	0.3	0.2	2.4	0.8
Apparel	0.2	0.8	0.4	0.4	0.1	2.7	0.9	1.0	0.6	1.3	0.9
Paper	0.7	0.1	3.6	1.9	0.9	6.0	1.1	1.7	1.5	2.4	1.8
Printing &											
Publishing	1.4	1.2	0.0	0.6	0.6	0.3	0.5	0.1	0.5	-0.2	0.5
Chemicals	1.7	4.9	5.4	5.6	4.5	13.1	17.7	19.2	2.0	15.1	8.4

Table 3 (continued)

Industry	Great Lakes	Mid-Atlantic	New England	Plains	Rocky Mountain	South Atlantic	South Central	South-west	West	Unknown	Total
Petroleum	-3.1	-0.4	0.3	-0.2	-2.0	-0.2	-0.4	-7.0	-0.4	-8.5	-2.4
Rubber & Plastics	4.5	1.8	2.6	4.0	0.9	1.7	2.4	2.9	1.2	2.3	2.2
Leather	0.4	0.3	1.7	2.1	0.2	0.4	0.0	0.3	0.1	0.2	0.4
Unclassified	2.4	1.6	1.6	1.9	0.6	0.8	1.2	1.1	1.3	16.1	3.0
All Industries	100.0 (14.0)	100.0 (31.9)	100.0 (16.7)	100.0 (17.0)	100.0 (26.8)	100.0 (20.6)	100.0 (22.4)	100.0 (28.1)	100.0 (29.8)	100.0 (10.7)	100.0 (21.0)*

Source: Compiled from "State of Export Series" provided by magnetic tape by the Foreign Trade Division, Bureau of the Census, U.S. Department of Commerce

*Real growth of total regional manufactured exports shown in parentheses. Nominal export value for each industry was deflated by the Producer Price Index for that industry to estimate real growth

Table 4
Regional Shares of Export Growth by Industry 1987-1988
(Percent)

Industry	Great Lakes	Mid-Atlantic	New England	Plains	Rocky Mountain	South Atlantic	South Central	South West	West	Unknown	Total
Durables	11.0	19.7	4.4	2.6	1.8	7.5	3.2	13.1	27.8	8.8	100.0
Lumber, Wood	3.6	5.1	0.1	0.4	0.6	3.1	4.5	2.5	64.3	15.6	100.0
Furniture	27.9	8.0	1.3	5.3	1.5	11.4	4.6	10.4	12.2	17.4	100.0
Stone, Clay, Glass	19.8	24.6	1.7	7.2	5.3	9.5	5.1	13.9	5.2	7.6	100.0
Primary Metals	8.1	68.8	1.5	1.5	2.3	2.1	3.4	2.4	7.2	2.5	100.0
Fabricated Metals	35.9	23.0	2.1	4.2	1.0	2.9	7.1	8.6	25.8	-10.6	100.0
Nonelectrical Machinery	16.1	8.3	2.8	5.5	2.2	10.1	3.7	15.3	25.6	10.3	100.0
Electrical Machinery	4.5	13.5	10.5	0.4	1.2	8.4	1.4	28.2	35.6	-3.8	100.0
Transportation Equipment	8.9	8.1	1.0	-2.1	0.3	7.8	2.8	13.5	40.4	19.4	100.0
Instruments and Related Products	9.9	14.5	11.8	6.1	3.7	8.6	2.6	11.4	23.0	8.5	100.0
Miscellaneous	7.3	55.7	3.6	2.9	0.7	4.3	3.3	8.0	18.3	-3.9	100.0
Nondurables	5.5	9.7	3.5	5.4	0.8	15.3	13.9	16.5	16.8	12.6	100.0
Food	7.0	3.6	1.2	9.3	1.0	4.3	22.2	10.7	28.2	12.4	100.0
Tobacco	-1.0	-0.8	0.1	-0.1	0.0	72.8	27.0	0.1	1.6	0.4	100.0
Textiles	6.8	15.6	2.7	0.5	0.0	28.5	1.7	5.6	5.2	33.4	100.0
Apparel	2.7	14.9	2.0	1.5	0.2	25.9	5.3	14.5	17.0	16.1	100.0
Paper	3.8	1.0	8.5	3.4	0.8	29.8	3.2	13.2	21.6	14.7	100.0
Printing & Publishing	25.3	38.7	0.2	3.4	1.7	4.4	5.2	3.5	21.6	-3.9	100.0
Chemicals	2.0	10.3	2.7	2.1	0.8	13.9	11.0	31.1	6.1	19.9	100.0
Petroleum	12.6	2.9	-0.4	0.3	1.3	0.9	0.9	39.2	3.6	38.8	100.0
Rubber & Plastics	19.9	14.2	4.9	5.6	0.6	6.7	5.6	17.6	13.8	11.1	100.0
Leather	11.4	13.6	19.3	17.4	1.0	10.6	0.5	11.2	9.9	5.2	100.0

Table 4 (continued)

Industry	Great Lakes	Mid-Atlantic	New England	Plains	Rocky Mountain	South Atlantic	South Central	South West	West	Unknown	Total
Unclassified	7.7	9.0	2.2	2.0	0.3	2.5	2.0	5.1	10.8	58.4	100.0 (14.7)
Total	9.9	17.4	4.2	3.1	1.6	8.9	5.2	13.5	25.2	11.0	100.0 (21.0)

Source: Compiled from "State of Export Series" provided on magnetic tape by the Foreign Trade Division, Bureau of the Census, U.S. Department of Commerce

*Real growth of total exports from each industry shown in parentheses. Nominal export value for each industry was deflated by the Producer Price Index for that industry to estimate real growth

Table 5
Destination Shares of Regional Manufactured Export Growth, 1987-1988
(Percent)

	Great Lakes	Mid-Atlantic	New England	Plains	Rocky Mountain	South Atlantic	South Central	South-West	West	Unknown	Total
Canada	10.9	10.8	21.0	-3.1	16.6	12.5	11.9	8.5	9.9	12.9	10.8
Japan	7.8	8.7	23.5	24.6	20.1	6.0	12.0	5.7	24.3	15.2	13.9
Mexico	8.7	5.8	4.7	15.1	4.7	3.5	7.3	4.0	6.7	4.0	9.8
Great Britain	9.4	5.2	18.2	4.4	11.5	5.9	3.6	7.3	6.4	5.6	6.8
Germany	7.6	2.2	6.8	5.3	4.4	7.2	2.7	2.0	3.8	3.8	4.1
France	4.6	1.8	3.4	3.7	4.7	2.8	4.0	2.2	5.3	5.8	3.8
Netherlands	2.4	5.0	6.5	4.2	5.3	4.5	5.5	1.4	2.1	0.2	3.0
Korea	4.1	2.7	1.0	2.7	10.3	4.8	1.8	4.0	9.0	4.7	5.0
Taiwan	4.5	26.6	2.7	6.2	3.4	3.0	3.8	3.9	4.7	5.6	8.2
Belgium/ Luxembourg	5.6	1.0	2.9	1.8	2.3	5.6	3.0	1.6	-0.2	1.1	1.9
Ten Country	65.7	70.0	90.5	65.1	83.4	55.8	55.7	68.7	71.9	58.8	67.3
Other	34.3	30.0	9.5	34.9	16.6	44.2	44.3	31.3	28.1	41.2	32.7
Total	100.0 (14.0)	100.0 (31.9)	100.0 (16.7)	100.0 (17.0)	100.0 (26.8)	100.0 (20.6)	100.0 (22.4)	100.0 (28.1)	100.0 (29.8)	100.0 (10.7)	100.0 (21.0)*

Source: Compiled from "State of Export Series" provided on magnetic tape by the Foreign Trade Division, Bureau of the Census, U.S. Department of Commerce

*Real growth of total regional manufacturing exports shown in parentheses. The decomposition of regional export growth into destination shares was based on an inflation adjustment using the Producer Price Index for manufacturing goods. The overall real growth rates of manufactured exports in each region using this method differ only slightly from the real growth rates listed here and in tables 1 and 3. A more accurate decomposition could be obtained by deflating nominal exports in each industry category for each destination using the Producer Price Index for each industry. Because of the small differences in overall growth rates, this method likely will yield nearly identical destination shares

Table 6
Regional Shares of Manufactured Export Growth to Selected Destinations, 1987-1988
(Percent)

	Great Lakes	Mid-Atlantic	New England	Plains	Rocky Mountain	South Atlantic	South Central	South West	West	Unknown	Total
Canada	9.7	17.4	7.7	-0.9	2.4	11.2	6.0	10.9	21.9	13.7	100.0
Japan	5.5	10.9	6.7	5.4	2.3	4.2	4.7	5.7	42.0	12.6	100.0
Mexico	8.6	10.3	1.9	4.7	0.8	3.4	4.1	45.4	16.3	4.6	100.0
Great Britain	13.3	13.4	10.6	2.0	2.6	8.4	2.9	14.8	22.6	9.4	100.0
Germany	17.8	9.4	6.6	4.0	1.7	17.1	3.6	6.7	22.5	10.6	100.0
France	11.8	8.5	3.6	3.0	1.9	7.1	5.7	7.9	33.3	17.4	100.0
Netherlands	7.7	29.0	8.6	4.2	2.7	14.4	9.9	6.5	16.4	0.6	100.0
Korea	8.0	9.6	0.8	1.7	3.2	9.4	2.0	11.2	43.2	10.9	100.0
Taiwan	5.3	56.3	1.3	2.3	0.6	3.6	2.5	6.5	13.7	7.8	100.0
Belgium/Luxembourg	28.0	9.0	5.9	2.9	1.9	28.3	8.6	11.3	-2.5	6.6	100.0
Ten Country	9.4	18.1	5.4	2.9	1.9	8.0	4.5	14.1	25.6	10.0	100.0
All	9.6	17.4	4.0	3.0	1.6	9.7	5.5	13.8	23.9	11.5	100.0

Source: Compiled from "State of Export Series" provided on magnetic tape by the Foreign Trade Division, Bureau of the Census, U.S. Department of Commerce

*Real growth of total manufactured exports to each destination shown in parentheses. The decomposition of exports to individual destinations into regional shares was based on an inflation adjustment using the Producer Price Index for total manufacturing industries