

Export Trends in Washington State

WASHINGTON STATE UNIVERSITY EXTENSION FACT SHEET • FS007E

Abstract

Accurate descriptions of export trends are needed for industry representatives, analysts, policy-makers, and business owners to properly assess market conditions. Washington-specific export information is particularly important because statistics indicate it is the national leader in terms of the percent of its shipments that are exports. This fact sheet provides data on manufactured exports from Washington State to foreign countries for a number of large industries (including aerospace and fruit and vegetable preserves) in a context emphasizing the relationships between shipments and the overall economy.

Introduction

FS007E is the first in a series of Extension publications providing Washington export data and facts. Subsequent fact sheets in the series will update and highlight changes in the information here. A companion Extension piece, “The Collection and Description of Washington State Export Data” (Cassey, 2010), includes explanation of 1) how the Washington State export data used in this series are collected, 2) interpretation limitations, and 3) definitions of many technical terms.

This fact sheet contains figures that depict trends in Washington exports by industry from 2002 to 2007. (Comparable 2008 data are not available as of this printing.) The data are represented as an inflation-adjusted time series, which allows trends in exports to be observed. The figures also emphasize the relationships among Washington’s exports, industries, total shipments (both foreign and domestic sales), and overall economic activity. The industries studied include some of the largest in the state, such as aerospace and computer equipment, along with a special focus on processed agricultural industries such as fruit and vegetable preserves and meat products.

Washington State’s Department of Commerce provides general international trade statistics with its *Commerce Quarterly Trade Bulletin*. The current release can be linked to from [\[washington.com/data/trade/Pages/default.aspx\]\(http://www.washington.com/data/trade/Pages/default.aspx\). The *Bulletin* highlights a particular foreign country in each issue, often focuses on a single industry, provides an overview of current events, describes the destination countries for Washington exports, and gives news on policy issues. The export trend data in this fact sheet complement the *Commerce Quarterly Trade Bulletin* to provide a more robust picture of Washington’s exports.](http://www.choose-</p></div><div data-bbox=)

The source of Washington’s export data is the World Institute for Strategic Economic Research (<http://www.wisertrade.org>). Cassey (2010) provides a full description of these data and how they are collected. The key feature of the state export data is its focus on the origin of movement of the export as it begins traveling abroad rather than its origin of production, which has important implications for how the data may be interpreted without spurious conclusions. Refer to Cassey (2010) for details.

Though the origin of movement state export data are only available for purchase, some Washington State export data may be obtained for free from TradeStats Express (<http://tse.export.gov/>). I adjusted all of the nominal export data here to account for inflation using the annual values from the Consumer Price Index for all commodities less fuel and energy for the Seattle-Tacoma-Bremerton area, available from the Bureau of Labor Statistics (<http://www.bls.gov/CPI>). The base year is the 1982–1984 average. This means that the dollar value of the data

in this fact sheet correspond to the value of the dollar from 1982 to 1984. Data on shipments are from the Geographic Area Statistics of the Annual Census of Manufactures conducted by the U.S. Census Bureau (<http://www.census.gov/manufacturing/asm/>).

Many of the figures below may be found, with the associated data in tabular form, at Washington State University's Community and Regional Development Extension Web site (<http://www.ses.wsu.edu/Extension/Cassey-exports/indexAC.htm#RealExports>).

Inflation-adjusted Manufacturing Exports

Washington Export Patterns in Total and by Selected Industry

After a few down and constant years following the 2001 recession, total inflation-adjusted (real) manufacturing exports in Washington have increased steadily. Total Washington exports nearly doubled, from \$14.5 billion in 2004 to \$27.7 billion in 2007. (Recall these values are reported in 1982–1984 dollar terms.) As figure 1 (page 3) shows, the state trend in total exports is nearly identical to the trend in the aerospace products and parts industry (NAICS 3364). After falling following 2001, aerospace product exports more than doubled, from \$8.9 billion in 2004 to \$20.2 billion in 2007.

Figure 2 (page 3) shows the trend in inflation-adjusted (real) exports for four other large exporting industries in Washington State (left axis): “computer equipment” (NAICS 3341); “petroleum and coal products” (NAICS 3241); “navigational, measuring, electromedical, and control instruments” (NAICS 3345); and “other general purpose machinery” (NAICS 3339, includes goods such as pumps, compressors, and material handling equipment). Total Washington State exports are repeated from figure 1 (scale is on the right axis of figure 2) so that the trend in exports for these four industries may be compared to the state’s export trend. Note the difference in scale on the left and right vertical axes.¹ That the difference in scale is a factor of 20 shows these other large export industries are dwarfed by the exports from aerospace. Perhaps the most noteworthy feature of figure 2 is that all these industries

¹The export data provided in figures 1 and 2 may be displayed as the percent change in exports from year to year. This figure is available at <http://www.ses.wsu.edu/People/faculty/Cassey/Extension/graph3.pdf>.

except computer equipment increased their exports over the entire 2002–2007 period, yet state exports decreased in 2004.

Comparing the aerospace industry to the state total in figure 1 and other industries in figure 2 shows how dominant aerospace products are within Washington’s total exports. Aerospace accounts for between 60 and 75% of Washington’s total exports from 2002 through 2007. The 2004 dip in Washington’s exports corresponds to the same year and dip in aerospace exports. Because the exports for other top exporting industries increased in 2004, the share of exports due to aerospace fell. No other industry in Washington accounts for more than 3.5% of total state exports in any given year. Graphs showing what percent each industry comprises of Washington’s total exports from 2002 through 2007 are available at <http://www.ses.wsu.edu/People/faculty/Cassey/Extension/graph2A2B.pdf>.

Comparing Washington’s Largest Export Industries to Those of the United States

Figure 3 (page 4) shows the sum of 2002–2007 exports by industry for Washington State and the United States. Aerospace is the highest value export during this time for both areas, but the industry category makes up a far larger fraction of total exports in Washington than the United States.

Figure 3 also shows that Washington’s large exporting industries differ in product composition from those of the United States. For example, cars and auto equipment account for a larger portion of United States exports than in Washington State. Therefore, the relevance of changes to U.S. export data may not be relevant to a Washington exporter.

Washington Exports as a Percent of Washington Shipments by Industry

Washington State leads the nation in the fraction of total shipments that are exported. Figure 4 (page 5) shows this information by industry. The figure only has data to 2006 because the Census Bureau has not yet publicly released more recent data on shipments by industry. Also, due to restrictions to protect the identity of individual firms, the Census Bureau does not report shipment data for the aerospace industry. Thus, aerospace is not included in figure 4.

Bernard and Jensen (1995) document the fraction of exported shipments as 5–15% for industries

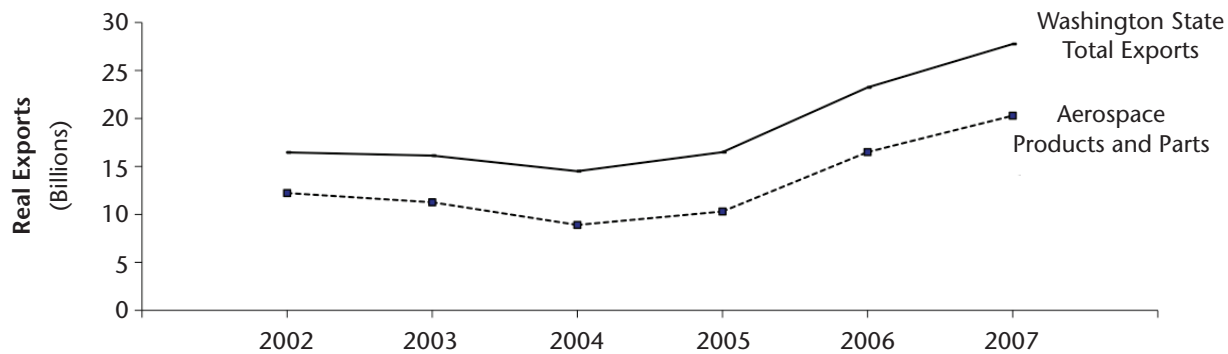


Figure 1. Inflation-adjusted exports for Washington State aerospace products and parts and total exports to the world by year.

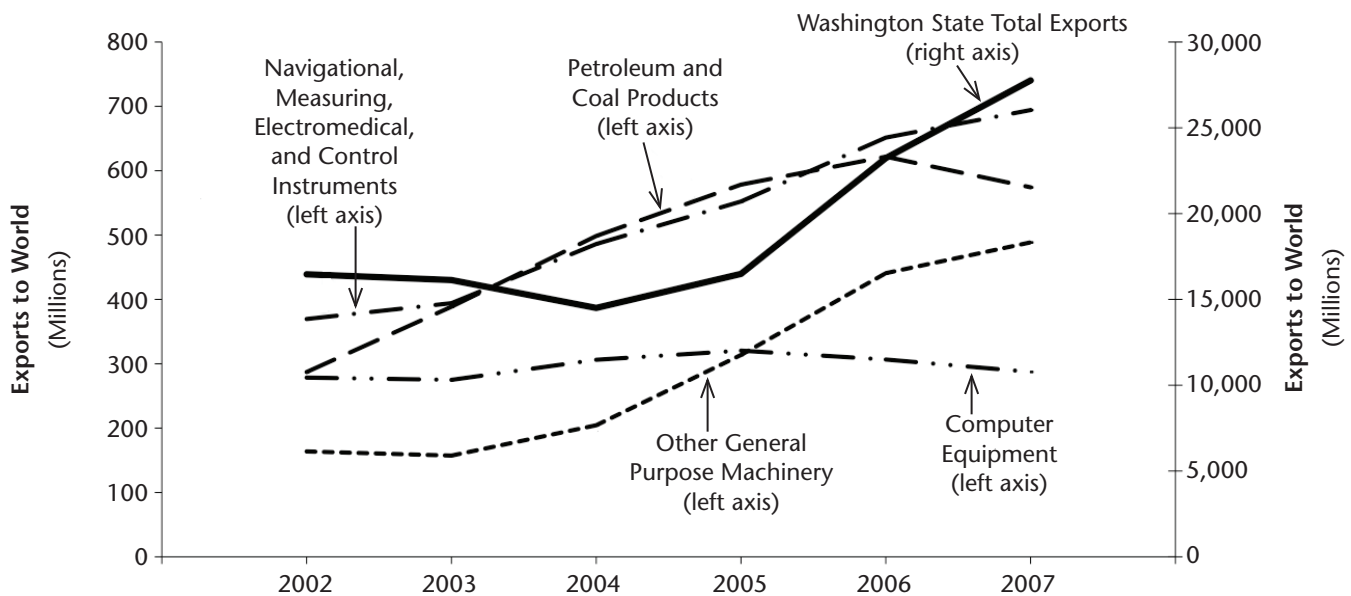


Figure 2. Inflation-adjusted exports for four Washington State industries and total exports to the world by year.

across the United States. In comparison, figure 4 shows that large exporting industries in Washington export 20% or more of their shipments. Computer equipment leads, with exports accounting for more than 40% of shipments in some years.

Figure 5 (page 5) shows the export location quotients by industry. A location quotient is a statistic measuring the economic concentration of industries in a geographic area. I define and construct an export location quotient to be the fraction of U.S. exports due to exports from Washington State divided by the fraction of U.S. shipments due to shipments from Washington State. The resulting statistic is greater than one if a Washington industry exports more of its shipments than the same industry does nationwide, thus indicating the Washington industry concentrates on exporting. An export loca-

tion quotient less than one indicates a Washington industry concentrates on domestic shipments.

Again, the lack of Census Bureau data on shipments restricts figure 5 to 2002–2006 and excludes aerospace. Despite Washington industries exporting a greater share of shipments than the same industry in the United States, only one Washington industry, computer equipment, is consistently concentrated on exports. This means that only in computer equipment does Washington export more of its shipments than the United States average, year after year.

Inflation-adjusted Processed Agricultural Exports

Agricultural products accounted for \$8.5 billion of economic activity in Washington in 2007. Because

of its prominence in the economy, processed agricultural exports are discussed separately from other manufacturing exports. Note that throughout this section, I use Census Bureau terminology to familiarize readers with its categorizations of the data. In some cases these Census Bureau terms will not match the terminology used within the industry. In particular, the Census Bureau classifies fresh fruit that has undergone any processing as a manufactured good. See Cassey (2010) for more details.

The export data on processed agricultural products falls into the food and kindred products (NAICS 311) subcategory under manufacturing (NAICS 31–33). An “agricultural” product must be processed in some way to count as a manufactured good. Processing methods include freezing, cutting, and certain kinds of packaging. Thus, many of the products informally considered as agricultural goods are counted by the Census Bureau as manufactured products. The export data for non-processed agri-

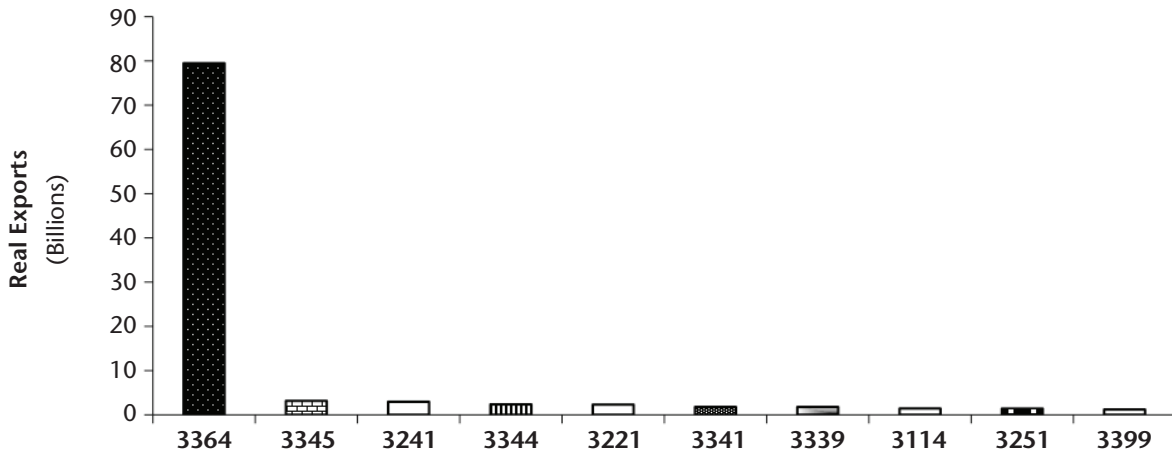


Figure 3a. Total sales from each of the 10 largest export industries for Washington State from 2002 through 2007. Patterned bars indicate industries in the top 10 for both Washington and the United States.

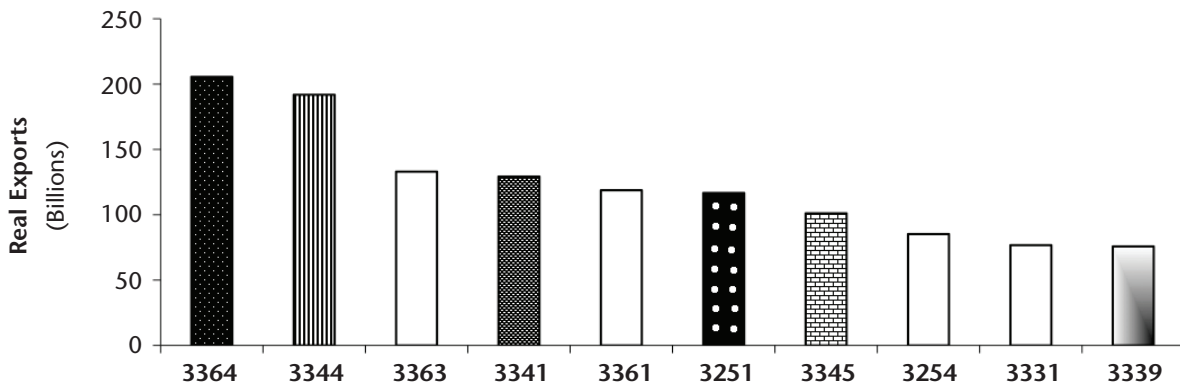


Figure 3b. Total sales from each of the 10 largest export industries for the United States from 2002 through 2007. Patterned bars indicate industries in the top 10 for both Washington and the United States.

- 3114 Fruit and Vegetable Preserves and Specialty Foods
- 3221 Pulp, Paper, and Paperboard Mill Products
- 3241 Petroleum and Coal Products
- 3251 Basic Chemical Manufacturing
- 3254 Pharmaceuticals and Medicines
- 3331 Agriculture and Construction Machinery
- 3339 Other General Purpose Machinery
- 3341 Computer Equipment

- 3344 Semiconductors and Other Electronic Components
- 3345 Navigational, Measuring, Electromedical, and Control Instruments
- 3361 Motor Vehicles
- 3363 Motor Vehicle Parts
- 3364 Aerospace Products and Parts
- 3399 Miscellaneous Manufactured Commodities

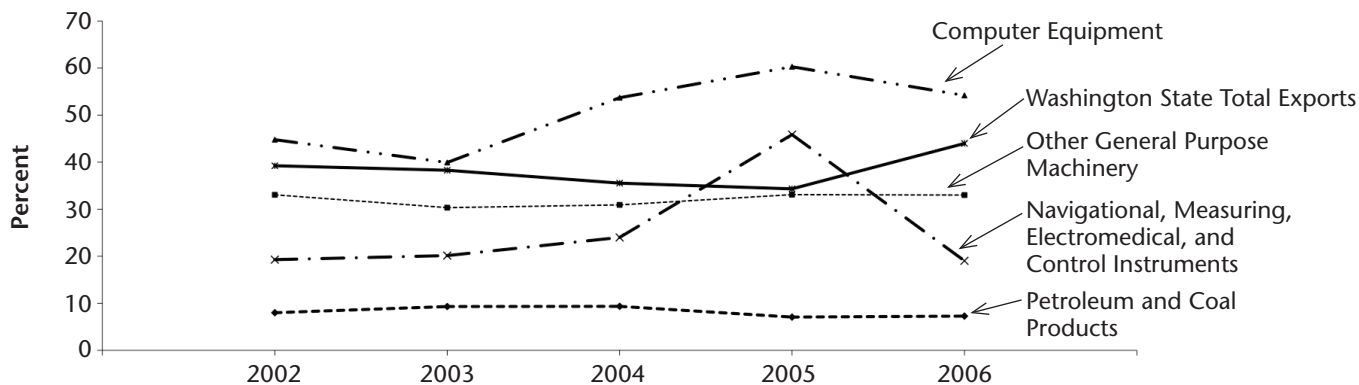


Figure 4. Percent of total shipments exported to the world for Washington State and four of its industries by year.

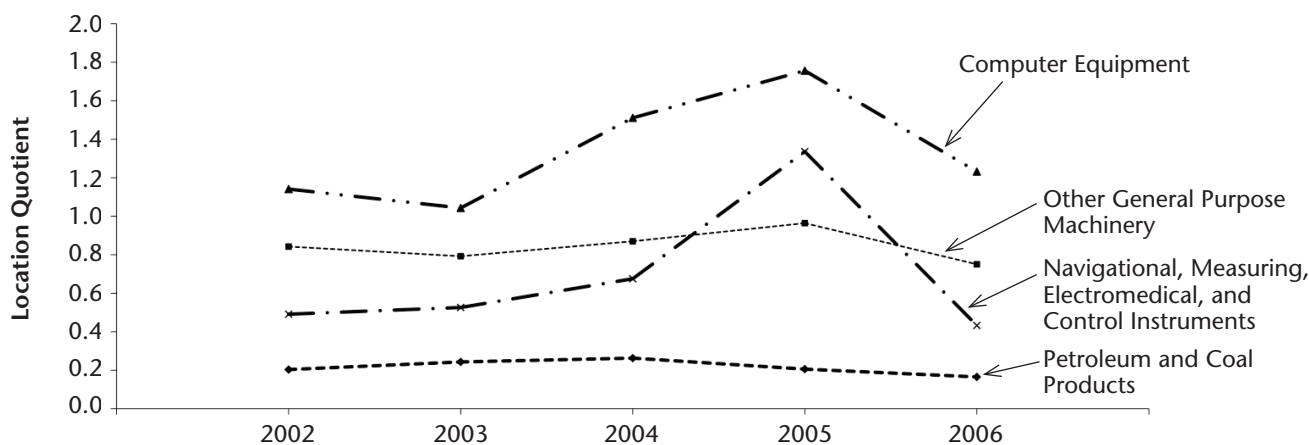


Figure 5. Export location quotients for four Washington State industries by year.

cultural products (NAICS 111 + 112) are not considered because the data collection method attributes goods consolidated at the port of exit to the port state regardless of which state produced the goods. Therefore, the export data for unprocessed agricultural goods for port states such as Washington do not accurately reflect the economic activity in the state. See Cassey (2010) for details on Washington's export data and related consolidation issues in port states.

As with total exports, Washington is the fourth largest state in exports of food and kindred products. Within this subsector, Washington's leading export industries are "fruit and vegetable preserves and specialty foods" (NAICS 3111); "meat products and meat packaging products" (NAICS 3116); "grain and oilseed milling products" (NAICS 3112); and "seafood products, prepared, canned, and packaged" (NAICS 3117). Japan imports the most food and kindred products from Washington, followed

by Canada, Mexico, and China. Japan's imports are primarily fruit and vegetable preserves and specialty foods and meat products and meat packaging. Japan accounts for 40% of Washington's exports in fruit and vegetables and 37% in meat products.

Figure 6a (page 6) shows the inflation-adjusted (real) value of exports for processed agricultural industries in Washington. Figure 6b shows the same data presented as a year-to-year percent change. The reason 2002 is not on the figure is that the 2003 point is the percent change from 2002 to 2003; likewise for the other points. The trend for these industries is increasing real exports, though as figure 6b shows, there is substantial volatility. Exports expand and contract quickly. For example, Washington exports of dairy products (NAICS 3115) doubled from 2003 to 2004 and 2006 to 2007 but were roughly unchanged from 2005 to 2006. One industry that experienced a decline in exports is meat products and meat packaging products

(NAICS 3116). Because Japan is the top destination for these products, the decrease in exports is likely due to Japanese restrictions on beef imports beginning in late 2003. These restrictions were partially loosened in 2006, which is reflected in figures 6a and 6b by an increase in meat product exports during this year.

Figure 7 (page 7) shows the percent of Washington shipments that were exported from processed agricultural industries from 2002 through 2006. Comparing figure 7 to figure 4 shows that Washington's processed agricultural industries are more similar to the national average than Washington's other manufacturing industries in terms of the ratio of exports to total shipments. For example, figure 7 demonstrates the large decrease in meat product shipments exported after 2003.

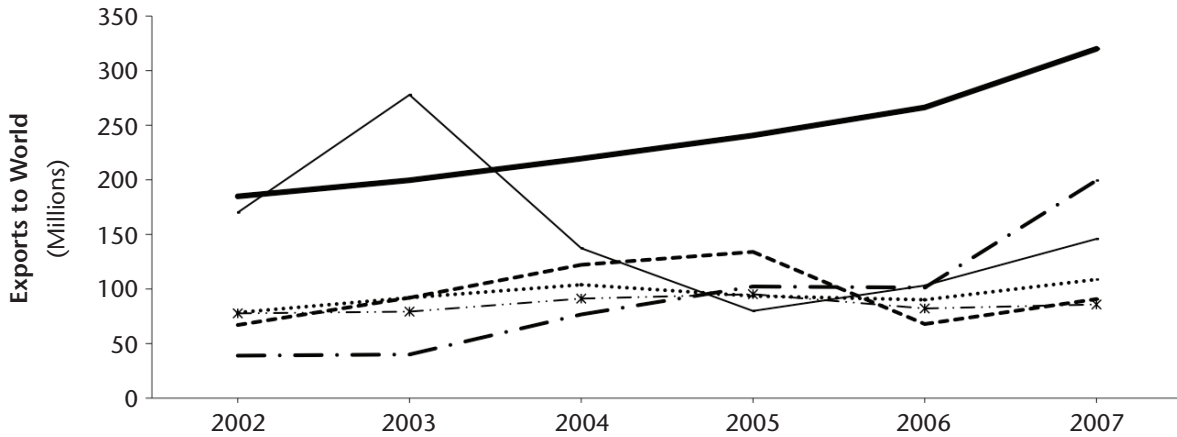


Figure 6a. Real exports of processed agricultural products for Washington State by year.

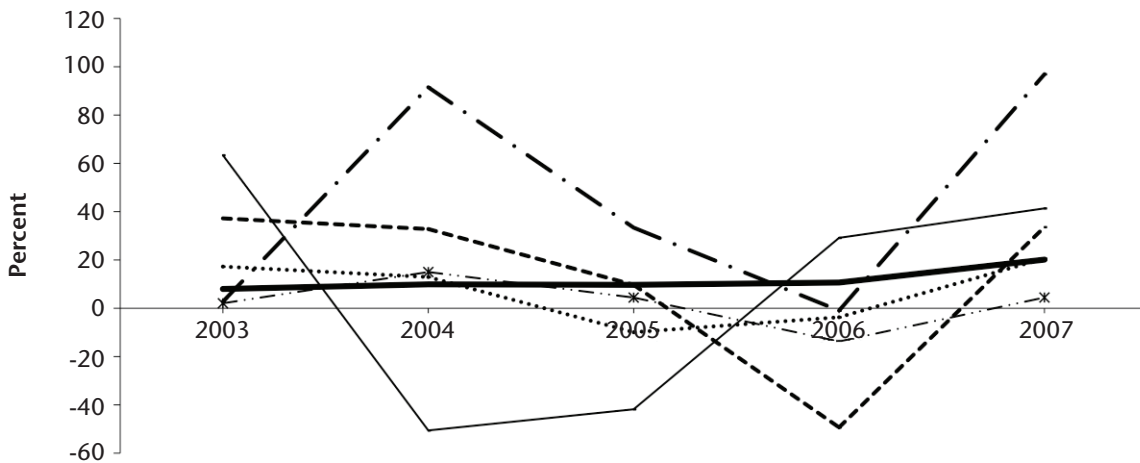


Figure 6b. Year-to-year percent change in real exports of processed agricultural products for Washington State.

----- 3112 ——— 3114 - · - 3115 ——— 3116 - * - 3117 3119

3112 Grain and Oilseed Milling Products
 3114 Fruit and Vegetable Preserves and Specialty Foods
 3115 Dairy Products

3116 Meat Products and Meat Packaging Products
 3117 Seafood Products Prepared, Canned and Packaged
 3119 Foods, not elsewhere specified or indicated

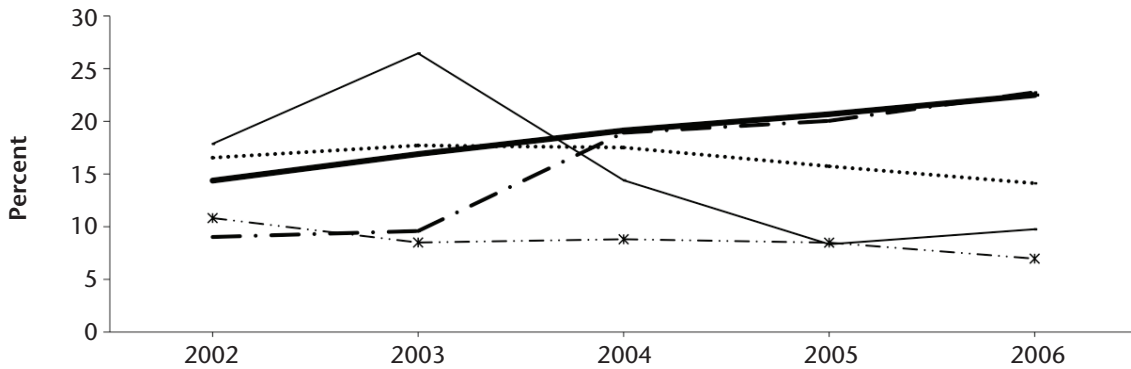


Figure 7. Fraction of processed agricultural shipments exported from Washington State by industry and year.

— 3114 - - 3115 — 3116 - * - 3117 3119

3114 Fruit and Vegetable Preserves and Specialty Foods
3115 Dairy Products
3116 Meat Products and Meat Packaging Products

3117 Seafood Products Prepared, Canned and Packaged
3119 Foods, not elsewhere specified or indicated

Summary

The export data reported in this fact sheet are arranged to emphasize the relationships with total shipments in a time series so that trends are easily observed. Manufactured exports, including processed agricultural products, generally increased since 2002. Exports of beef have been rising since the partial end of the Japanese import ban in 2006. Washington exports continue to be composed mostly of aerospace products.

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