Export Trends in Washington State

Volume 3

WASHINGTON STATE UNIVERSITY EXTENSION FACT SHEET • FS036E

Abstract

Accurate descriptions of export trends are needed for industry representatives, analysts, policymakers, and business owners to properly assess market conditions. This fact sheet provides data on manufactured exports from Washington State to foreign countries for several large industries (including aerospace and fruit and vegetable preserves) in a context emphasizing the relationships between exports and the overall economy. Unlike other export data sources, the data here can be used to compare 1) export changes over time, 2) export changes with overall industry shipment changes, and 3) changes to current importing countries with changes to the number of importing countries.

This is the third edition of an annual series. New material includes 2009 export data and a figure showing the year-to-year percent change in exports.

Introduction

FS036E is the third 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. The 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 2009. (Comparable 2010 data are not available as of this printing.) The data are represented as an inflation-adjusted time series, which allows export trends 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 products industries, such as fruit and vegetable preserves and grain and oilseed milling products.

New material for this third edition of Export Trends in Washington State includes updated export figures with 2009 data and a figure showing the year-to-year percent change in exports.

The data here emphasize exports in the context of both time and overall economic activity. For example, the reader can use this fact sheet to determine how the relationship between aerospace industry exports and total exports from Washington State has changed since 2002 or compare dairy product exports and shipments over time. Unlike most publications in which the data are reported in current-year dollars, the data here are inflation-adjusted. This means that year-to-year comparisons are on equal footing. Also, this publication is unique in reporting both export and shipment data, allowing for an assessment of whether exports are becoming more or less important to the industry relative to total shipments, regardless of the stand-alone trend in exports. Finally, this document has the only data on the number of countries receiving Washington exports by industry. When combined with the data on exports, these data allow the reader to assess whether changes to exports result from changes in sales to current importing countries or changes to the number of countries.

Washington State's Department of Commerce provides general international trade statistics with its *Commerce Quarterly Trade Bulletin*. Current and past issues are available at http://www.choosewashington.com/Pages/CommerceQuarterlyTradeBulletin.aspx. The *Bulletin* highlights a particular foreign country in each issue, often focuses on a single industry, provides an overview of current events, and offers news on policy

issues. Because the *Commerce Quarterly Trade Bulletin* focuses on a specific market or industry in each edition, the export trend data in this fact sheet complement the *Bulletin* to provide a more general picture of Washington's exports, in particular with respect to domestic shipments.

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 their focus on the export's origin of movement 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 can be obtained for free from TradeStats Express™ (http://tse.export.gov/). I adjusted all nominal export data here to account for inflation using the annual values from the Consumer Price Index for all urban consumers, all items less food and energy for the Seattle-Tacoma-Bremerton area, available from the Bureau of Labor Statistics (BLS) (http://www.bls.gov/cpi, Series ID: CUUSA423SA0L1E). The base year is the 1982–1984 average.[1] This means that the dollar value of the data in this fact sheet corresponds to the value of the dollar from 1982 to 1984. Data on shipments are from the Geographic Area Statistics of the Annual Survey of Manufactures (http://www.census.gov/manufacturing/asm/) and the Economic Census (http://www.census.gov/econ/census07/) conducted by the U.S. Census Bureau.

[1] This base year is the standard used by the BLS. Any year may be the base year without changing the data's meaning. For convenience, I use the standard BLS base year.

Many of the figures below may be found, with the associated data in tabular form, at Washington State University's School of Economic Sciences' website (http://www.ses.wsu.edu/Extension/Cassey-exports/indexAC.htm#RealExports).

Inflation-adjusted Manufacturing Exports

I adjusted the value of exports reported by the Census Bureau in each year (nominal exports) to account for differences in the price level of goods from year to year. Reporting inflation-adjusted data allows the reader to make comparisons over time without the confounding effects of price level changes. Most publicly available export data are reported in current-year dollars, making year-to-year comparisons difficult to interpret.

Washington Export Patterns in Total and by Selected Industry

Washington State exports increased modestly in 2009 over 2008, as Figure 1 shows. The increase of $323.6 million in inflation-adjusted (real) dollars was slightly less than 2%, following the 10% decrease in exports in 2008. The level of exports in 2009 only increased to a level last reached in 2006. (Recall these values are reported in 1982–1984 dollar terms.)

Figure 1 shows the increase in the aerospace products and parts industry (NAICS 3364) outpaced that of the overall economy in 2009. Typically, overall Washington exports follow the same trends as aerospace. But aerospace exports increased almost $2 billion over 2008, a change of roughly 20%, rebounding from a particularly rough year when aerospace exports decreased more than $3.2

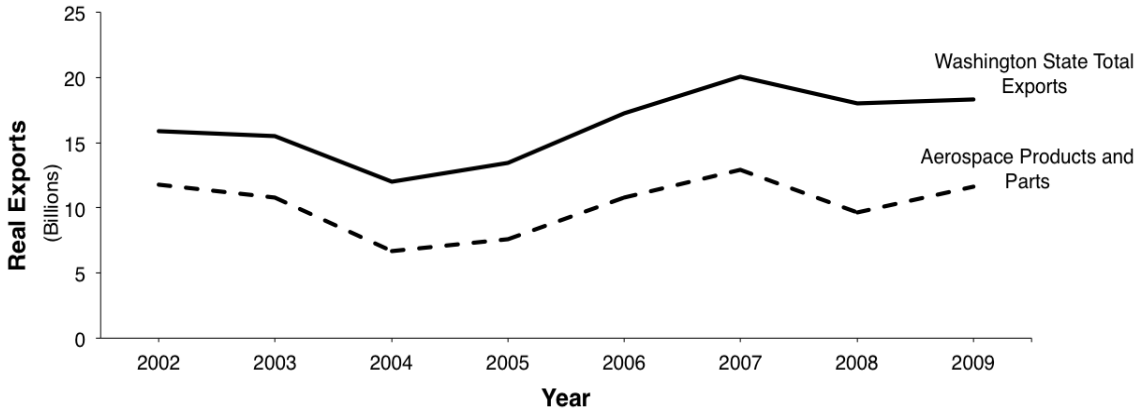

Figure 1. Inflation-adjusted exports for Washington State aerospace products and parts and total exports to the world by year.

billion (–25%), partly due to the International Association of Machinists strike at Boeing in fall 2008. The recovery was not complete, as aerospace exports in 2009 were only slightly more than those in 2006.

Despite aerospace's significant rebound, 2009 export losses in other industries cut into the overall Washington export increase. Figure 2 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 such goods 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 can be compared to the state's export trend. Note the difference in scale on the left and right vertical axes. That the difference in scale is a factor of 20 shows these other large export industries are dwarfed by the exports from aerospace.

Four of Washington's top exporting industries contracted in 2009, and relative to their total sales, exports in these industries decreased significantly, as seen in Figure 3. The year 2002 is not on the figure because the 2003 point is the percent change from 2002 to 2003; likewise for the other points. Petroleum and coal products decreased 33%, other general-purpose machinery decreased 50%, computer equipment decreased 15%, and

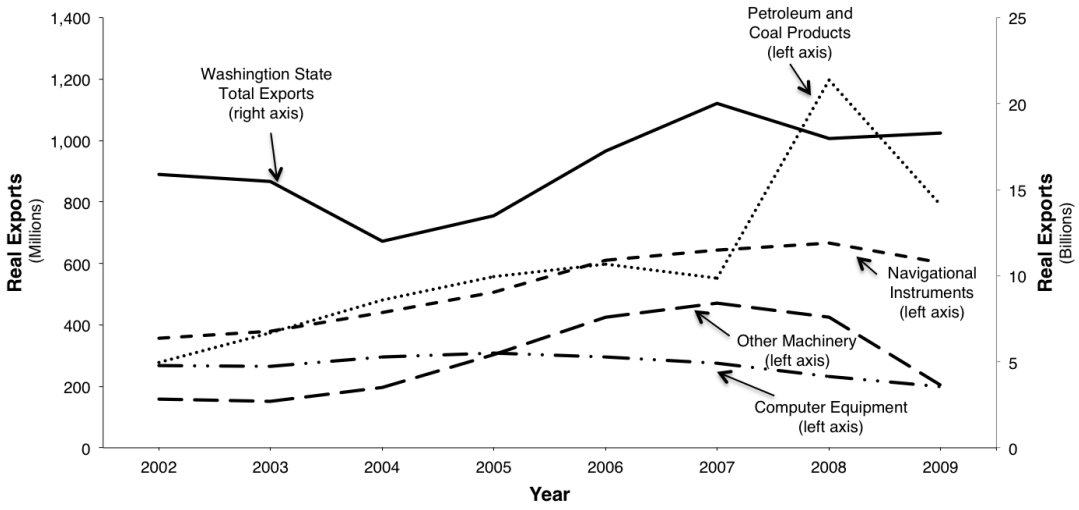

Figure 2. Inflation-adjusted exports for four Washington State industries and total exports to the world by year.

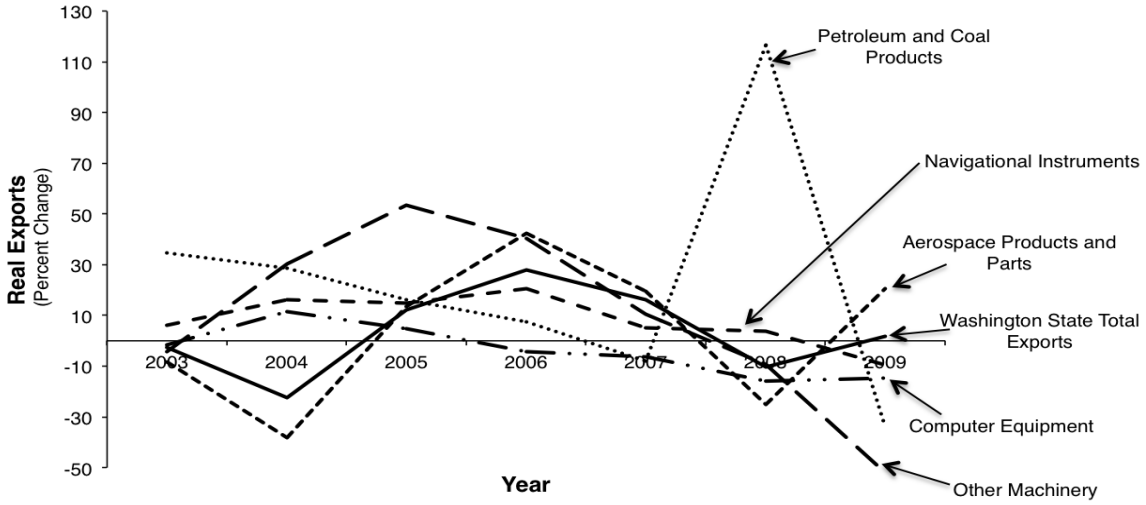

Figure 3. Year-to-year percent change in real exports of five Washington State industries.

navigational, measuring, electromedical, and control instruments decreased 10%. The drop in other general-purpose machinery came after a banner year in 2008.

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 accounted for between 50 and 75% of Washington's total exports from 2002 through 2009. The dominance of aerospace in the composition of total Washington exports mitigated the significant decrease in exports from Washington's other major industries and contributed to the overall state exports increase, albeit slightly. The rebound in aerospace exports increased the industry's share of total exports to 64% from its low of 54% in 2008. In 2009, no other industry in Washington accounted for more than 5% of total state exports. Graphs showing the percentage of each industry in Washington's total exports from 2002 through 2009 are available at http://www.ses.wsu.edu/extension/Cassey-exports/real-exp/graph2A2B.pdf.

Washington Exports as a Percent of Washington Shipments by Industry

Washington State leads the nation in the fraction of total shipments that are exported. (Note that shipments are defined as the value of products sent to Washington, the rest of the United States, and foreign destinations; exports refer only to the value of those sent to foreign destinations. Shipment data for 2009 are not available as this fact sheet goes to press.) Total state shipments are from the Census Bureau's Annual Survey of Manufactures' Geographic Area Statistics, describing data on the value of primary and secondary goods, measured at the producing establishment, that are sold, transferred to another establishment of the same company, or shipped on consignment to any destination within Washington, the United States, or the world. Figure 4 shows this information by industry. Due to restrictions in order 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 manufacturing industries 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 up to 60% of shipments in 2005, though the navigational, measuring, electromedical, and control instruments industry surpassed computer equipment in 2008.

The Number of Countries Receiving Washington Exports

Figure 5 shows the number of destination countries that Washington firms exported to for five manufacturing industries since 2002. The overall trend indicates Washington's top five manufacturing industries exported to more countries than in the early 2000s. But in 2009, the number of countries receiving Washington exports decreased for all five of Washington's top export industries. The decrease to exports for all industries except aerospace could have resulted from exporting to fewer countries rather than receiving fewer sales from each of the remaining countries. Even aerospace, which increased exports, exported to fewer countries in 2009 than 2008. Thus, sales to

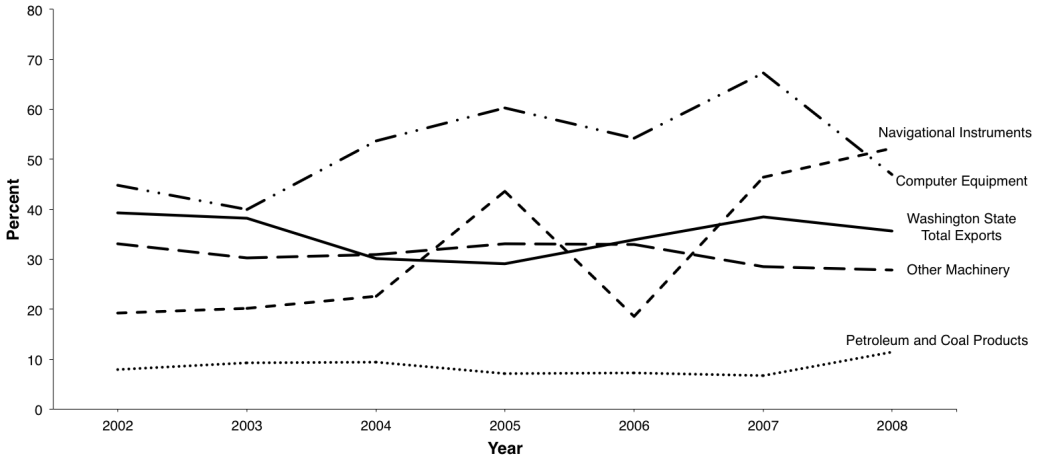

Figure 4. Percent of total shipments exported to the world for Washington State and four of its industries by year.

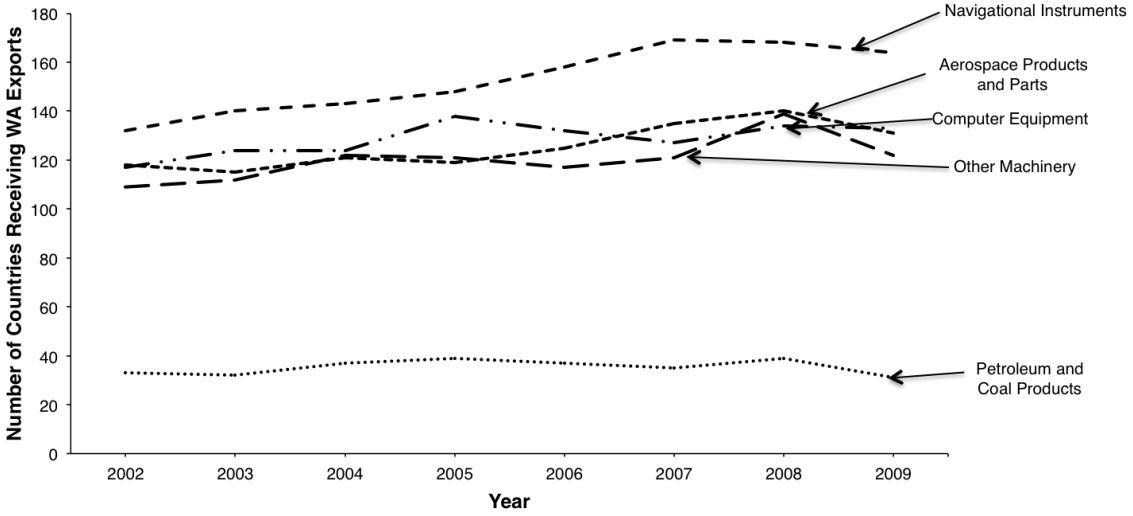

Figure 5. The number of destination countries for Washington State manufacturing products by year.

each country in 2009 must have been greater than before.

Inflation-adjusted Processed Agricultural Exports

Throughout this section, I use Census Bureau terminology to familiarize readers with its data categorizations. In some cases, these Census Bureau terms will not match the terminology used within the industry.

The export data on processed agricultural products fall into the "food manufacturing" (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 packaging. Thus, the Census Bureau counts many products informally considered agricultural goods as manufactured products. The export data for nonprocessed agricultural products (crop and animal production, 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 state's economic activity. 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 manufactured food products. Within this subsector, Washington's leading export industries are "fruit and vegetable preserves and specialty foods" (NAICS 3114); "meat products and meat packaging products" (NAICS 3116); "grain and oilseed milling products" (NAICS 3112); and "seafood products, prepared, canned, and packaged" (NAICS 3117).

Figure 6 shows the inflation-adjusted (real) value of exports for Washington processed agricultural products industries, comparable to Figures 1 and 2. Similar to these earlier figures, most industries saw a decrease in exports in 2009 compared to 2008. Only grain and oilseed milling products increased exports, more than $15 million since 2008 and $118 million since 2006. This industry has been Washington's most successful in terms of export expansion during that time. However, grain and oilseed milling production is a pass-through industry, meaning many exports could have been produced in another state before being consolidated and shipped from Washington.

Figure 7 shows the same data presented as a year-to-year percent change, comparable with Figure 3. Unlike the industries in Figure 3, processed agricultural products industry exports show greater volatility, expanding and contracting 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.

In 2009, however, exports for all processed agricultural products industries grew less than before, with decreased exports for fruit and vegetable preserves (–9%), dairy products (–50%), meat products (–30%), seafood products (–9%), and

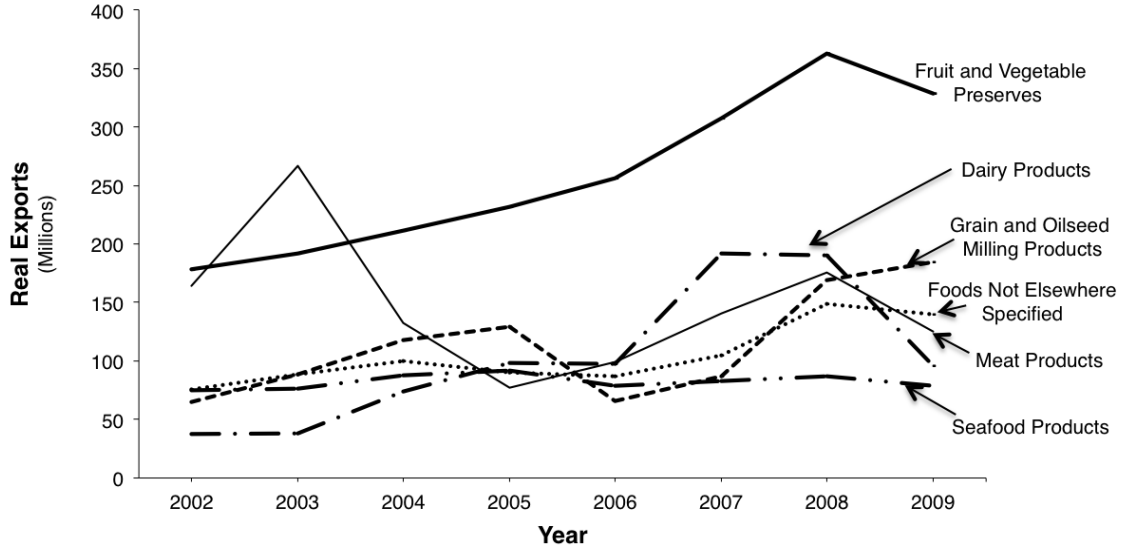

Figure 6. Real exports of processed agricultural products for Washington State by year.

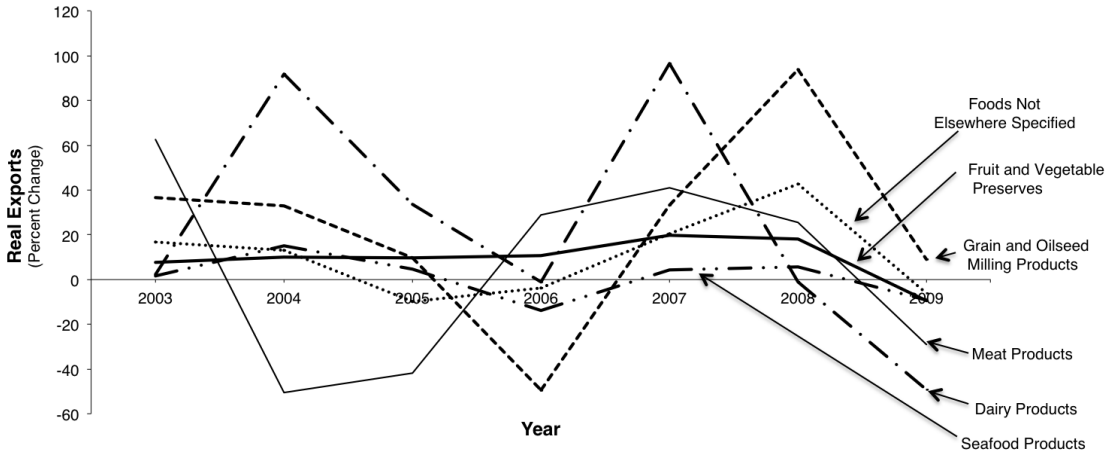

Figure 7. Year-to-year percent change in real exports of processed agricultural products for Washington State.

foods not elsewhere specified (–6%.) Only grain and oilseed milling products were exported more in 2009 than 2008, by 9%.

Figure 8 shows the percent of Washington shipments that were exported from processed agricultural products industries from 2002 through 2008. Comparing Figure 8 to Figure 4 shows that Washington's processed agricultural products industries are closer to the national average than Washington's other manufacturing industries in terms of the ratio of exports to total shipments. For example, Figure 8 demonstrates the large decrease in meat product shipments exported after 2003, although they nearly doubled from 2007 to 2008. The data show that the percent of dairy shipments that were exported also doubled in the last several years, increasing from 20 to 40%.

Figure 9 shows the number of destination countries for the six leading processed agricultural products industries, comparable to Figure 5. The other miscellaneous food manufacturing industry (NAICS 3119) consistently exported to the most destinations. Following the overall trend, four of the six processed food industries exported to fewer countries in 2009 than 2008. Only the other miscellaneous food manufacturing industry increased the number of destinations by two.

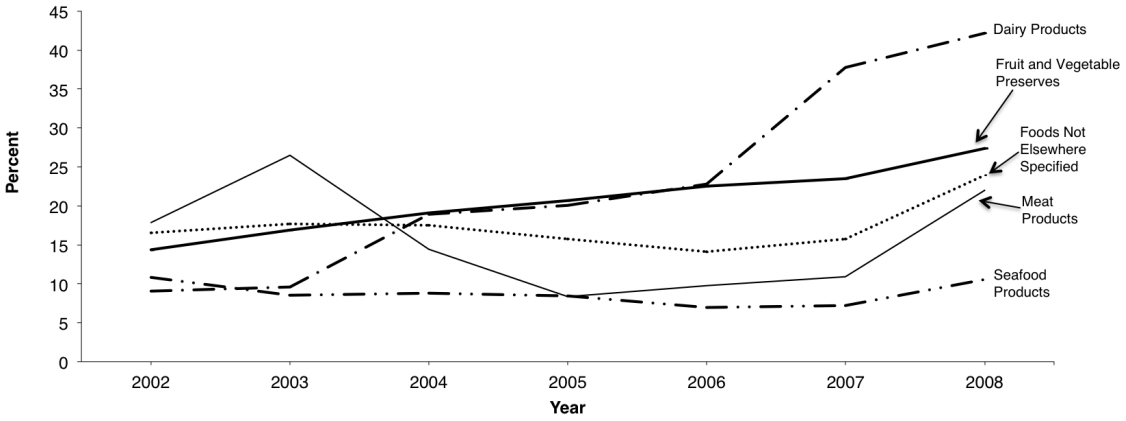

Figure 8. Fraction of processed agricultural shipments exported from Washington State by industry and year.

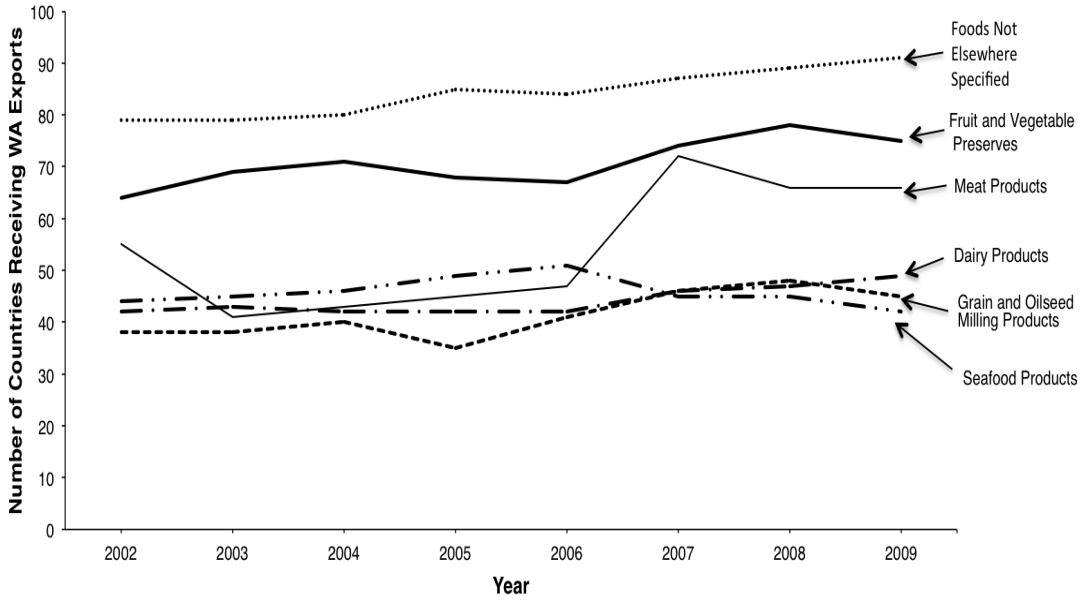

Figure 9. The number of destination countries for Washington State processed agriculture products by year.

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. After a downturn in 2008, total Washington exports increased 2% in 2009. But this export gain is not widespread across all industries; most of the increase was due to the rebound of aerospace products and parts exports. Most of Washington's other top exporting industries shrank in 2009. Aerospace products and parts returned to a 60-plus% share of total exports. Besides aerospace products and parts, only the grain and oilseed milling products industry achieved export gains in 2009. This industry has increased exports 300% since 2006 and is Washington's most successful in terms of exports during that time, though it is known as a pass-through industry in Washington.

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By **Andrew J. Cassey,** School of Economic Sciences, Washington State University.

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