

# The Economic Impacts of Utah's International Goods Exports, 2014

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## Summary

Utah's \$12.3 billion of international goods exports in 2014 generated \$4.1 billion in earnings and 95,463 jobs, and contributed almost \$7.6 billion to the state's gross domestic product. These impacts represented 4.8 percent of total earnings in the state, 5.3 percent of total employment, and 5.4 percent of total GDP. The average earnings per job from the impacts were \$43,344, higher than the overall state average of \$42,709.

Computer and electronic products (including flash memory) exports contributed \$1.2 billion in earnings, almost 30,000 jobs, and \$2.1 billion in GDP. Exports of transportation equipment generated \$570.4 million in earnings, 11,755 jobs, and \$891.1 million in earnings. Food and kindred products exports supported \$432.9 million in earnings, 9,754 jobs, and \$890.2 million in GDP.

The U.S. Census Bureau provides detailed information on merchandise exports by state. This Research Brief summarizes Utah's 2014 international goods exports as reported by the Census Bureau and estimates their combined direct, indirect and induced economic impacts using RIMS II multipliers published by the Bureau of Economic Analysis.<sup>1</sup>

## Utah's Goods Exports

In 2014, Utah exported \$12.3 billion worth of goods to 202 countries. This represented roughly 2.8 percent of the state's GDP.<sup>2</sup> By way of comparison, in California, home to two of the country's top ten marine ports by tonnage,

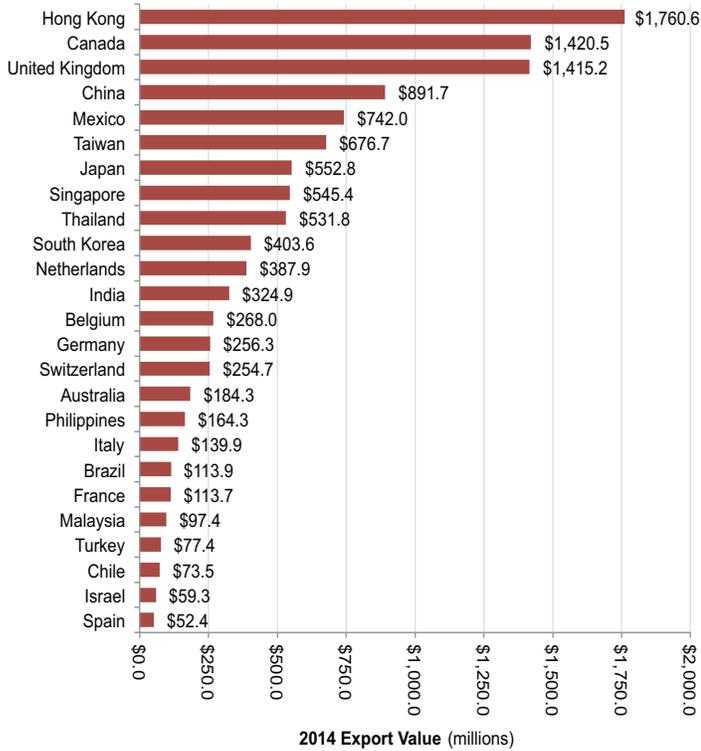
plus two more in the top 50, and with direct air service to Asia and a shared border with Mexico, goods exports also represented 2.8 percent of GDP in 2014. Utah's largest exports by value were unwrought gold at \$3.8 billion, electronic integrated circuit memory (flash memory) at \$1.3 billion, and certain food preparations at almost \$482.8 million. Countries importing goods from Utah ranged from Hong Kong, at \$1.8 billion (\$1.6 billion of which was unwrought gold), to East Timor which purchased \$2,535 of battery-powered radios. Four countries—China (including Hong Kong), Canada, the United Kingdom and Mexico—received half of Utah's merchandise exports. Figure 1 shows the top 25 destination countries of the state's exports by value in 2014; seven of the top ten are in Asia. A regional analysis shows the growing importance of the Asian market at the expense of Europe over the past decade-plus (Figure 2).

The Census Bureau's export data reflect the state from which the goods begin their journey to the port of export. There are a couple of cases where this may not coincide with the state that produced the goods. Some shipments are consolidated in a state other than the producing state before being exported. Non-manufactured goods may be stored by central offices or intermediaries in another state before being exported. The result is that the value of these exports is understated for the producing states and overstated for the consolidating or central office states. These cases primarily affect agricultural products and natural resources like oil and gas.

1. Unfortunately, there are no official data on state-level exports of services, though the Brookings Institution has made some estimates at the county level. This analysis is confined to the impacts of goods exports only.

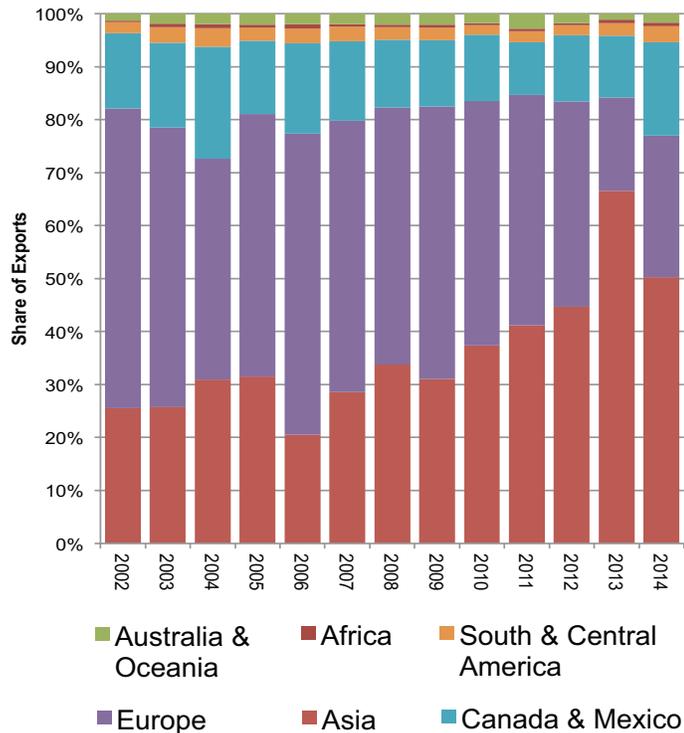
2. Based on the estimated value-added portion of the exports, after removing inland freight, insurance and other costs involved in placing the goods alongside the ship at the port of export.

**Figure 1**  
**Top 25 Utah Goods Export Destination Countries, 2014**



Source: U.S. Census Bureau, USA Trade Online.

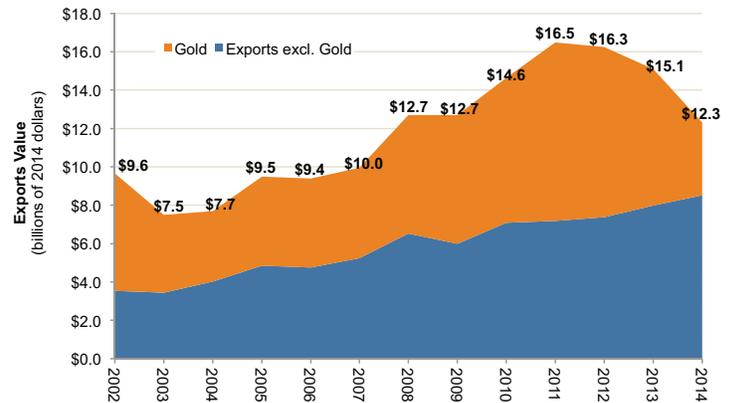
**Figure 2**  
**Share of Utah Goods Exports by Region, 2002–2014**



Source: U.S. Census Bureau, USA Trade Online.

Figure 3 and Table 1 show the growth in Utah's goods exports, in inflation-adjusted 2014 dollars,<sup>3</sup> between 2002 and 2014. The value of the state's exports grew 27.5 percent over this period, from \$9.6 billion to \$12.3 billion. However, gold exports were 38 percent lower in 2014 than in 2002, after peaking at \$9.3 billion in 2011. Exports excluding gold increased fairly steadily from \$3.5 billion to \$8.5 billion, representing a compound annual growth rate of 7.6 percent. In fact, the decline in Utah's total goods exports since 2011 has been due solely to shrinking gold exports. Figure 4 demonstrates this more dramatically by plotting the estimated volume of Utah's gold exports from 2002 through 2014.<sup>4</sup>

**Figure 3**  
**Utah Goods Exports, 2002–2014**



Source: U.S. Census Bureau, USA Trade Online.

**Figure 4**  
**Gold Prices and Estimated Utah Gold Export Volumes, 2002–2014**



Source: Gardner Policy Institute analysis based on data from Deutsche Bundesbank and U.S. Census Bureau, USA Trade Online.

<sup>3</sup> Gold export values were adjusted using the producer price index for gold; the values of all other exports were adjusted using the Bureau of Economic Analysis' price index for exports of goods.  
<sup>4</sup> The volumes of gold exports shown in Figure 4 and Table 1 were derived by dividing the value of gold exports by the average annual price of gold in London (afternoon fixing).

**Table 1 Utah International Trade, 2002–2014**

(billions of constant 2014 dollars)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Utah Commodity Exports	\$9.6	\$7.5	\$7.7	\$9.5	\$9.4	\$10.0	\$12.7	\$12.7	\$14.6	\$16.5	\$16.3	\$15.1	\$12.3
Share of U.S. Total	0.7%	0.6%	0.6%	0.7%	0.7%	0.7%	0.8%	1.0%	1.1%	1.3%	1.2%	1.0%	0.8%
Gold, Nonmonetary, Unwrought	\$6.1	\$4.0	\$3.7	\$4.6	\$4.6	\$4.7	\$6.2	\$6.7	\$7.6	\$9.3	\$8.9	\$7.1	\$3.8
Share of State Total	63.4%	54.0%	47.8%	48.8%	49.4%	47.3%	48.5%	52.8%	51.7%	56.5%	54.6%	47.1%	30.9%
est. gold volume (millions of oz.)	5.8	3.8	3.5	4.4	4.3	4.4	4.7	5.1	5.9	7.5	7.1	5.7	3.0
Total, excl. gold	\$3.5	\$3.4	\$4.0	\$4.9	\$4.8	\$5.2	\$6.5	\$6.0	\$7.1	\$7.2	\$7.4	\$8.0	\$8.5
Total Utah Commodity Imports	na	na	na	na	na	na	\$6.4	\$7.6	\$8.9	\$11.0	\$11.0	\$10.6	\$11.1
Share of U.S. Total	–	–	–	–	–	–	0.3%	0.4%	0.4%	0.5%	0.5%	0.5%	0.5%

Note: All export and import values except gold were adjusted using BEA's price indexes for exports and imports of goods and services. Real gold export values were calculated using the PPI for gold.

Source: U.S. Census Bureau, USA Trade Online.

## Economic Impacts of Utah's Exports

Table 2 shows the value of Utah's 2014 goods exports by three-digit NAICS code. RIMS II multipliers, published by the Bureau of Economic Analysis, were used to estimate the economic impacts of these exports on the state of Utah. These multipliers account for backward linkages in the state's economy. That is, an exporting firm purchases inputs from local suppliers, including labor from residents, in order to produce its output; these suppliers in turn purchase labor and inputs from other local suppliers. In addition, the workers at the exporting firm and the upstream firms spend a portion of these earnings on local goods and services. Together, these activities are what constitute the multiplier effect.

Note that most of the value of primary metal manufacturing is due to gold: almost \$3.8 billion of the total \$4.2 billion. Applying final demand multipliers to the value of gold exports yields total economic impacts of \$1.9 billion in earnings, 42,231 jobs, and \$3.5 billion in gross state product. Given that most of this gold is imported and only processed here and there are only two gold refiners in the state, each with fewer than 250 employees, these impacts are clearly too high. Therefore we used an alternative approach to estimate the impacts of gold refining.

Utah produced approximately \$331 million of gold in 2014, over 99 percent of which were a byproduct of Kennecott's copper mining.<sup>5</sup> Kennecott refines the gold it produces in a refinery in Magna, Utah. There is also the Asahi gold and silver refining plant (acquired from Johnson Matthey in 2015) in Salt Lake City, which processes the large quantities of gold that the state imports (\$2.9 billion dollars' worth in 2014). According to the Department of Workforce Services the Asahi facility

**Table 2**

## Utah's Goods Exports by Three-Digit NAICS Code, 2014

NAICS	Commodity	Value
331	Primary Metal Manufacturing	\$4,197,717,168
334	Computer & Electronic Products	\$2,349,856,209
325	Chemicals	\$1,047,320,838
311	Food & Kindred Products	\$991,446,464
336	Transportation Equipment	\$906,058,458
339	Miscellaneous Manufactured Commodities	\$655,505,397
333	Machinery, Except Electrical	\$495,341,368
212	Minerals & Ores	\$370,251,497
335	Electrical Equipment, Appliances & Components	\$307,794,256
332	Fabricated Metal Products, NESOI	\$219,092,165
326	Plastics & Rubber Products	\$191,250,560
111	Agricultural Products	\$77,068,083
327	Nonmetallic Mineral Products	\$44,702,962
337	Furniture & Fixtures	\$35,159,657
322	Paper	\$31,654,264
312	Beverages & Tobacco Products	\$29,431,126
323	Printed Matter and Related Products, NESOI	\$28,043,165
314	Textile Mill Products	\$25,367,972
316	Leather & Allied Products	\$20,524,580
313	Textiles & Fabrics	\$15,666,966
315	Apparel & Accessories	\$13,642,373
112	Livestock & Livestock Products	\$10,430,927
324	Petroleum & Coal Products	\$8,789,119
211	Oil & Gas	\$5,884,694
321	Wood Products	\$4,356,397
113	Forestry Products, NESOI	\$1,711,885
114	Fish, Fresh/Chilled/Frozen & Other Marine Products	\$804,733
910	Waste and Scrap	\$121,871,394
930	Used or Second-hand Merchandise	\$34,471,018
980	Goods Returned (exports for Canada only)	\$530,750
990	Other Special Classification Provisions	\$63,782,975
<b>All Commodities</b>		<b>\$12,305,529,420</b>

NESOI = not elsewhere specified or included.

Source: U.S. Census Bureau, USA Trade Online.

5. Utah Geological Survey, Utah's Extractive Resource Industries 2014, available at [geology.utah.gov/online/c/c-120.pdf](http://geology.utah.gov/online/c/c-120.pdf).

employs between 100 and 249 people. We can use RIMS multipliers to estimate the sales associated with a known number of jobs in a particular industry. Assuming 175 jobs at Asahi yields estimated sales (exports) of \$58.9 million, which in turn generate total impacts of \$34.6 million in earnings, 759 jobs, and \$63.5 million in state GDP. We also estimated the impacts from the \$330.8 million of gold produced (and refined) in Utah. These two sets of gold refining impacts were then incorporated into the impacts shown for primary metals in Table 3.

Note that there is not a single multiplier for transportation equipment, even in the aggregated RIMS multipliers. Delving into the four-digit NAICS export data revealed that in 2014 this commodity comprised \$433.9 million of motor vehicles, their bodies, trailers, and parts and

\$472.1 million of aerospace products and parts, railroad rolling stock, ships and boats, and other transportation equipment. These correspond to the RIMS multipliers for motor vehicle, body, trailer and parts manufacturing and for other transportation equipment manufacturing.

Before applying multipliers, export values were reduced to reflect the producer's share of the reported amount, that is, the portion received by the producer of the good. The BEA provides a table showing the composition of the purchase price of exported commodities. The "purchaser value" consists of the "producer value" plus any transportation costs and wholesale margins to deliver the good to the purchaser. For each exported commodity, we calculated the producer's share of the purchaser value and multiplied that by the value of the export reported by

**Table 3**  
**Estimated Economic Impacts of Utah's Goods Exports, 2014**

NAICS	Commodity	Earnings (millions)	Employment (jobs)	Value-Added (millions)
334	Computer & Electronic Products	\$1,220.7	29,932	\$2,113.2
336	Transportation Equipment*	\$220.7	5,160	\$375.3
		\$349.7	6,595	\$515.8
311	Food & Kindred Products	\$432.9	9,754	\$890.2
325	Chemicals	\$385.9	8,325	\$816.2
331	Primary Metals	\$369.5	8,229	\$698.1
339	Miscellaneous Manufactured Commodities	\$322.2	7,739	\$593.4
333	Machinery, Except Electrical	\$250.5	5,525	\$440.5
212	Minerals & Ores	\$128.1	2,825	\$267.6
335	Electrical Equipment, Appliances & Components	\$127.3	2,940	\$250.6
332	Fabricated Metal Products, NESOI	\$108.2	2,587	\$198.5
326	Plastics & Rubber Products	\$75.4	1,881	\$149.3
111	Agricultural Products	\$24.3	651	\$54.7
327	Nonmetallic Mineral Products	\$21.7	483	\$43.6
337	Furniture & Fixtures	\$16.1	445	\$29.4
322	Paper	\$10.7	236	\$22.1
312	Beverages & Tobacco Products	\$12.9	290	\$26.4
323	Printed Matter and Related Products, NESOI	\$16.5	475	\$29.2
314	Textile Mill Products	\$10.2	310	\$17.8
316	Leather & Allied Products	\$9.4	346	\$16.7
313	Textiles & Fabrics	\$6.3	192	\$11.0
315	Apparel & Accessories	\$6.3	246	\$11.1
112	Livestock & Livestock Products	\$3.3	88	\$7.4
324	Petroleum & Coal Products	\$2.9	48	\$4.9
211	Oil & Gas	\$2.8	52	\$6.3
321	Wood Products	\$1.8	53	\$3.1
113	Forestry Products, NESOI	\$1.0	37	\$1.5
114	Fish, Fresh/Chilled/Frozen & Other Marine Products	\$0.4	17	\$0.7
<b>Total Impacts</b>		<b>\$4,137.8</b>	<b>95,463</b>	<b>\$7,594.7</b>
State Totals		\$85,811.4	1,785,244	\$141,410.0
Impacts Share of State Total		4.8%	5.3%	5.4%

NESOI = not elsewhere specified or included.

\* The transportation multipliers are for motor vehicle, body, trailer and parts manufacturing and for other transportation equipment manufacturing.

Source: Policy Institute analysis of Census Bureau data using the Bureau of Economic Analysis' RIMS II multipliers, and Bureau of Economic Analysis regional data (state totals).

the Census Bureau. We then applied the RIMS multipliers to these adjusted amounts. Exports of waste and scrap, used or second-hand merchandise, goods returned, and “other special classification provisions”—totaling \$220.7 million—were not included as there are no multipliers for these categories. However, the remaining goods represent 98.9 percent of the total value of exports in 2014.

Utah’s international goods exports in 2014 supported \$4.1 billion in earnings and 95,463 jobs, and contributed almost \$7.6 billion to the state’s gross domestic product (value added).<sup>6</sup> These impacts represented 4.8 percent of total earnings in the state, 5.3 percent of total employment, and 5.4 percent of total GDP (Table 3). The average earnings per job from the impacts were \$43,344, higher than the overall state average of \$42,709. This implies that export activity is skewed more toward the higher-paying industries than is the state’s economy as a whole.

The largest impacts were from exports of computer and electronic products (including flash memory), which contributed \$1.2 billion in earnings, almost 30,000 jobs, and \$2.1 billion in GDP. Exports of transportation equipment generated \$570.4 million in earnings, 11,755 jobs, and \$891.1 million in earnings. Food and kindred products exports supported \$432.9 million in earnings, 9,754 jobs, and \$890.2 million in GDP. The estimated impacts of gold exports, based on the methodology described above, were \$202.2 million in earnings, 4,437 jobs, and \$371.2 million in GDP.

Utah’s international goods exports have significant impacts on Utah’s economy through increased earnings, jobs and GDP. Exporting to a diverse array of developed and developing countries improves the state’s economic resilience by reducing the effects of adverse events in any one country’s economy.

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6. These impacts comprise direct, indirect and induced effects.



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