

International Trade Economic Forecasts Inland Empire Metro Area and City of Riverside Merchandise Exports

for



OFFICE OF ECONOMIC DEVELOPMENT

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TABLE OF CONTENTS	
	Page
EXECUTIVE SUMMARY	4
1. INTRODUCTION	5
2. U.S. AND CALIFORNIA MERHCANDISE EXPORTS	5
3. INLAND EMPIRE MERCHANDISE EXPORTS	6
4. MERCHANDISE EXPORTS FOR THE CITY OF RIVERSIDE	15
5. CONCLUSION	18
6. APPENDIX	19

EXECUTIVE SUMMARY

Merchandise exports from the Inland Empire are projected to increase significantly by 12.7% to \$10,784 million in 2014 (see Table 1). The upward trend is expected to continue with merchandise exports forecasted to reach \$11,841 million (a 9.8% increase) in 2015 and rise to \$12,848 million in 2016 (an 8.5% rise). As for the City of Riverside (represented by 3 Digit Zip code 925), export growth is projected to continue its steep increase over the three year forecast horizon. In 2014, merchandise exports from the City of Riverside are projected to reach \$2,711 million, a 16.7% increase compared to 2013. The City of Riverside's merchandise exports are expected to reach \$3,062 million (a 13.0% growth) in 2015 and rise to \$3,515 million (a 14.8% growth) in 2016.

Merchandise Exports (millions of dollars)

Year	Inland Empire	Inland Empire Growth Rate	City of Riverside	City of Riverside Growth Rate
2013	9,569	19.8%	2,322	16.3%
Forecast				
2014	10,784	12.7%	2,711	16.7%
2015	11,841	9.8%	3,062	13.0%
2016	12,848	8.5%	3,515	14.8%

Source: CEAF, California State University Fullerton and International Trade Administration
City of Riverside is represented by 3 Digit Zip Code 925

The two countries that accounted for the highest amount of merchandise exports from the Inland Empire in 2013 were Canada (\$1,978 million) and Mexico (\$1,393 million) for a combined share of 35% of all merchandise exports. Merchandise exports for Canada are forecasted to reach \$3,101 million and for Mexico \$2,006 million by 2016. The next three large trading partners are China, Japan and the Netherlands. Canada and Mexico accounted for 35% of merchandise exports from the Inland Empire and are projected to grow from \$3,371 million in 2013 to \$5,108 million by 2016. Asia was another popular destination for the Inland Empire's merchandise exports, totaling \$3,100 million in 2013 and are forecasted to reach \$3,963 million by 2016.

The three largest sectors for merchandise exports from the Inland Empire are Miscellaneous Manufacturing at \$1,867 million (a 19.5% share), Transportation Equipment at \$1,574 million (a 16.4% share) and Computer and Electronic Products at \$1,348 (a 14.5% share). Merchandise exports to these three main sectors are projected to reach higher levels by 2016.

1. INTRODUCTION

Merchandise exports are an important part of the Inland Empire economy as well as to the City of Riverside and continue to have a positive impact on the regional economy. Given the close proximity to the ports of Los Angeles and Long Beach, which are the two largest ports in the U.S., trade will remain a vital part of the region generating economic growth and providing jobs.

Merchandise exports have picked up moderately for both the U.S. and California. In contrast, the Inland Empire and City of Riverside have experienced a significant surge in merchandise exports. While Mexico is the main destination of merchandise exports from California, Canada is the top merchandise exports country for both the U.S. and Inland Empire. Mexico, Canada, China and Japan are in the top five countries for merchandise exports for the U.S., California and the Inland Empire. A main difference is that the remaining country in the top five destinations for merchandise exports is Germany for the U.S., South Korea for California and the Netherlands for the Inland Empire. Thus the trends in merchandise exports from the Inland Empire are closely related to trade patterns of the nation and California but there are some important differences.

The remainder of the report briefly examines merchandise exports to the U.S. and California before focusing on the Inland Empire. Merchandise exports from the Inland Empire will be examined and forecasted for major export countries, regions and sectors. The next part of the report will provide an analysis and forecasts of merchandise exports from the City of Riverside (represented by the zip code 925).

2. U.S. AND CALIFORNIA MERCHANDISE EXPORTS

Merchandise exports from the U.S. grew modestly by 2.2% to \$1,580 billion in 2013 (see Table 1). This follows the moderate 4.3% increase of 2012. Since 2006, except for during the Great Recession,

Table 1
Merchandise Exports
(billions of dollars)

Year	U.S.	U.S. Growth	C.A.	C.A. Growth
2006	1,026	13.9%	128	9.5%
2007	1,148	11.9%	134	5.1%
2008	1,287	12.1%	145	7.8%
2009	1,056	-18.0%	120	-17.1%
2010	1,278	21.1%	143	19.3%
2011	1,483	16.0%	159	11.3%
2012	1,546	4.3%	162	1.5%
2013	1,580	2.2%	168	3.9%

Source: International Trade Administration

U.S. merchandise exports grew over 10% per year until 2011. For California, merchandise export trends are closely related to those of the U.S, especially from 2009 onwards. In 2013, merchandise exports from California totaled \$168 billion. The slower growth in U.S. and California merchandise exports during the last couple of years is due to the sluggishness of the overall global economy.

Canada and Mexico are the major destinations of merchandise exports from the U.S. and California in 2013 (see Table 2). For the U.S., Canada and Mexico account for \$528 billion (33.4%) of merchandise exports which is a larger share compared to California's \$43 billion (25.4%). A major difference between the nation and the state is that Canada accounts for the largest amount of merchandise exports for the U.S. whereas Mexico is the leading exports country for California. China and Japan, respectively occupy the third and fourth destinations for merchandise exports for both the U.S. and Canada. While Germany has the fifth largest amount of merchandise exports from the U.S.; for California it is South Korea.

Table 2
Merchandise Exports by Country Year 2013
(billions of dollars)

Country	United States Volume and Share		Country	California Volume and Share	
Canada	302	19.1%	Mexico	24	14.2%
Mexico	226	14.3%	Canada	19	11.2%
China	122	7.7%	China	16	9.7%
Japan	65	4.1%	Japan	13	7.6%
Germany	47	3.0%	South Korea	8	5.0%

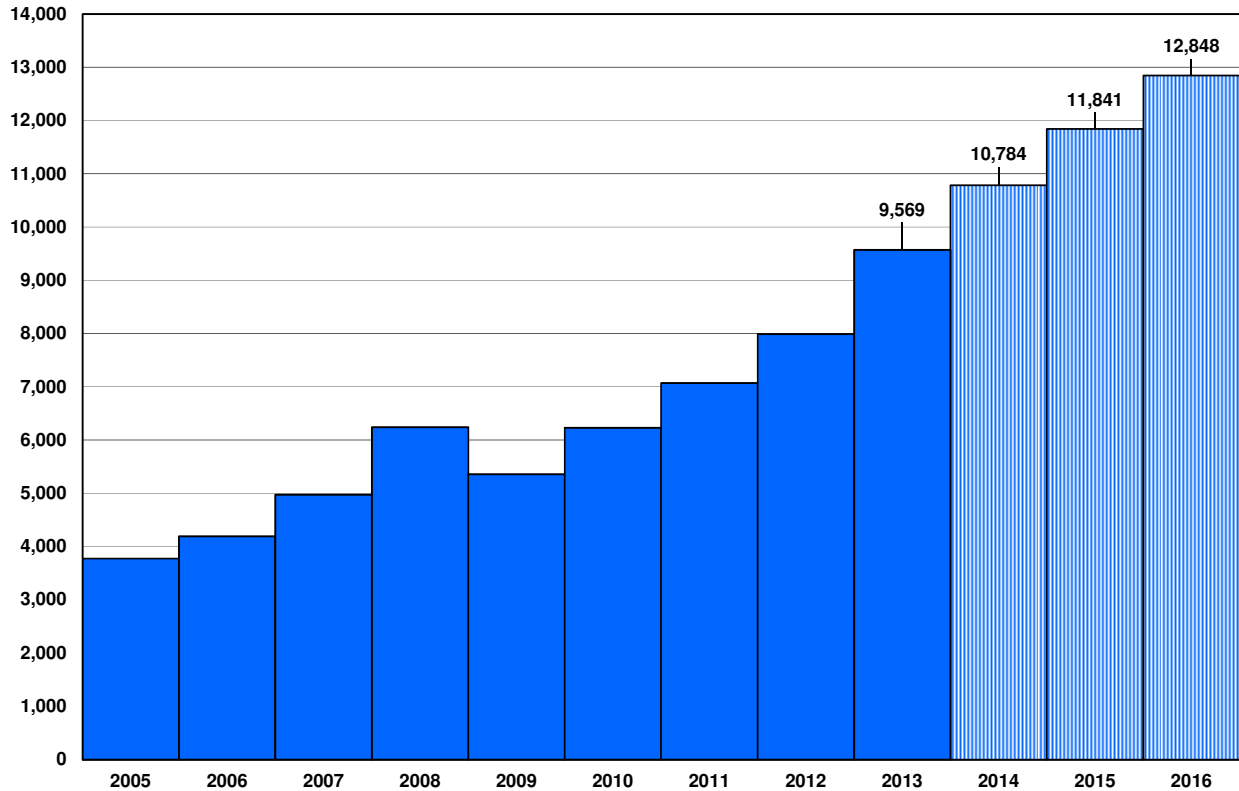
Source: International Trade Administration

The global economy continues to experience moderate economic growth although some regions have recently begun to show signs of weaker growth which is expected to continue for the remainder of this year and the next. Over the three year forecast horizon, there should be a moderate increase in the demand for merchandise exports.

3. INLAND EMPIRE MERCHANIDSE EXPORTS

Economic activity in the Inland Empire has picked up over the last couple of years. For the Inland Empire, merchandise exports have contributed significantly to the economic recovery in the region. According to the International Trade Administration, merchandise exports were grew by a staggeringly 19.8% to \$9,569 million in 2013 (Figure 1 and Table 3). As a point of comparison, merchandise exports from the Los Angeles-Long Beach-Anaheim MSA (Metropolitan Statistical Area) were \$76,305 million which is the third highest for an MSA across the U.S. and almost eight times larger than the Inland Empire.

Figure 1
Inland Empire Merchandise Exports
 (millions of dollars)



Source: CEAF, California State University Fullerton and International Trade Administration

This is the fourth year in a row that merchandise exports from the Inland Empire have grown by more than 10% since 2009 (Table 3). Similarly, merchandise exports from the Inland Empire grew substantially prior to the Great Recession by over 10% from 2005 through 2008. The growth in merchandise exports from the Inland Empire has generally exceeded that of both the U.S. and California combined since 2005, excluding the year of the Great Recession where merchandise exports by MSA’s across the country declined. Some companies in the Inland Empire that are involved in merchandise exports are outlined in Appendix A5.

Strong merchandise export growth is projected to continue over the forecast horizon. In 2014, merchandise exports are forecasted to reach \$10,784 million (a 12.7% growth rate), followed by another hefty increase to \$11,841 million (a 9.8% growth rate) in 2015 and continuing to rise to \$12,848 (an 8.5% growth rate) in 2016. By 2016, merchandise exports are projected to be \$3,279 million (a 34.3% growth rate) higher than in year 2013.

Table 3
Inland Empire Merchandise Exports
(millions of dollars)

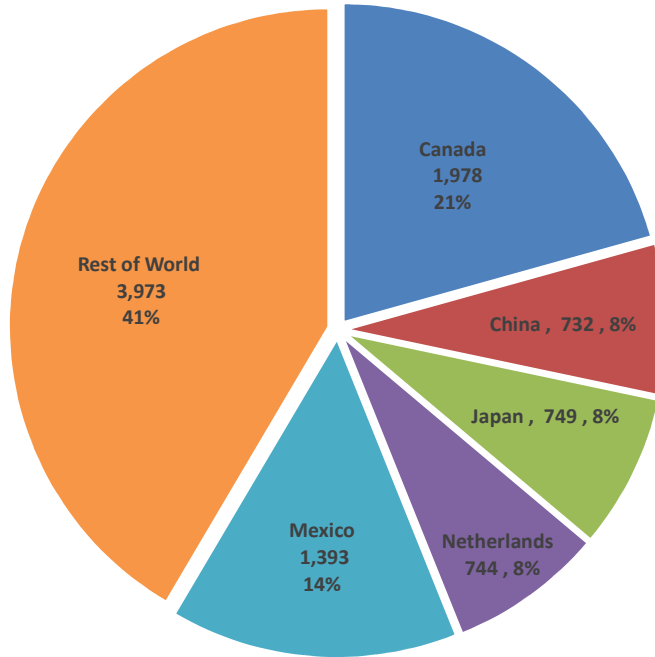
Year	Export Volume	Growth Rate
2005	3,774	17.4%
2006	4,192	11.1%
2007	4,971	18.6%
2008	6,241	25.6%
2009	5,356	-14.2%
2010	6,231	16.3%
2011	7,070	13.5%
2012	7,986	13.0%
2013	9,569	19.8%
Forecast		
2014	10,784	12.7%
2015	11,841	9.8%
2016	12,848	8.5%

Source: CEAF, California State University Fullerton and International Trade Administration

3.1 Inland Empire Merchandise Exports by Country

The five largest merchant export destinations for the Inland Empire in 2013 were Canada (\$1,978 million), Mexico (\$1,393 million), Japan (\$749 million), Netherlands (\$744 million), and China (\$732 million) (see Figure 2 and Table 4). These five countries accounted for 58.5% of merchandise exports from the Inland Empire in 2013. Merchandise exports to these five countries increased from \$4,308 million in 2012 to \$5,596 million in 2014 which represents a sharp increase of 27.8% or \$1,217 million. The steep increase was led by a 64.0% growth to Canada (see Appendix A1).

Figure 2
Inland Empire Exports by Country for 2013
 (millions of dollars)



Canada and Mexico accounted for 35.2% of merchandise exports in 2013 (see Appendix A2) and were the two largest countries for Inland Empire merchandise exports. Merchandise exports to Canada and Mexico increased significantly from a combined \$2,338 million (in 2012) to \$3,371 million (in 2013), a 44.2% increase in 2013 compared to the previous year. The share of total merchandise exports from these two countries combined also increased from 29.3% (in 2012) to 35.2% (in 2013). After declining by -1.4% in 2012, merchandise exports to Canada increased by a staggeringly \$772 million or 64.0% in 2013 (see Appendix A4). Merchandise exports to Mexico also increased significantly in 2013 by \$261 million (23.1%). Japan, the Netherlands, and China account for almost a quarter of Inland Empire merchandise exports. In 2013, merchandise exports to Japan only grew by 2.9% compared to a 23.9% increase experienced in 2012. Merchandise exports from the Inland Empire had accelerated since the Great Recession and was 1.8 times larger, increasing by \$4,212 million in 2013 compared to 2009. For Canada, merchandise exports have almost doubled since 2009 and were \$971 million larger in 2013. Merchandise exports to Mexico were 1.6 times larger, increasing by \$450 million since 2009.

Table 4
Inland Empire Merchandise Exports by Country
 (millions of dollars)

Year	Canada	China	Japan	Netherlands	Mexico	Rest of World	Total Exports
2005	809	298	327	167	500	1,673	3,774
2006	902	279	278	242	481	2,011	4,192
2007	1,132	321	313	307	501	2,397	4,971
2008	1,504	354	396	602	596	2,790	6,241
2009	1,007	306	290	595	853	2,306	5,356
2010	1,108	449	587	552	721	2,815	6,231
2011	1,222	599	588	512	985	3,165	7,070
2012	1,206	661	728	653	1,132	3,607	7,986
2013	1,978	732	749	744	1,393	3,973	9,569
Forecast							
2014	2,265	819	820	857	1,607	4,416	10,784
2015	2,656	875	863	959	1,806	4,682	11,841
2016	3,101	922	906	1,047	2,006	4,864	12,848

Source: CEAF, California State University Fullerton and International Trade Administration

Canada is projected to receive 21% of all of the Inland Empire merchandise exports in 2014 and then increase to account for almost a quarter of exports by 2016. Merchandise exports to Canada are projected to be \$2,265 million in 2014 and reach \$3,101 million by 2016. The share of merchandise exports to Mexico is forecasted to grow by over 15% by 2014. Merchandise exports to Mexico are projected to increase by \$1,607 in 2014 and exceed \$2,000 million by 2016. Merchandise exports to China are forecasted to exceed \$800 million in 2014 and 2015 and then increase to over \$900 million in 2016. There should be strong double digit growth in merchandise exports to the Netherlands in 2014 and 2015, and an additional 9.2% growth in 2016 when merchandise exports are expected to exceed \$1,000 million.

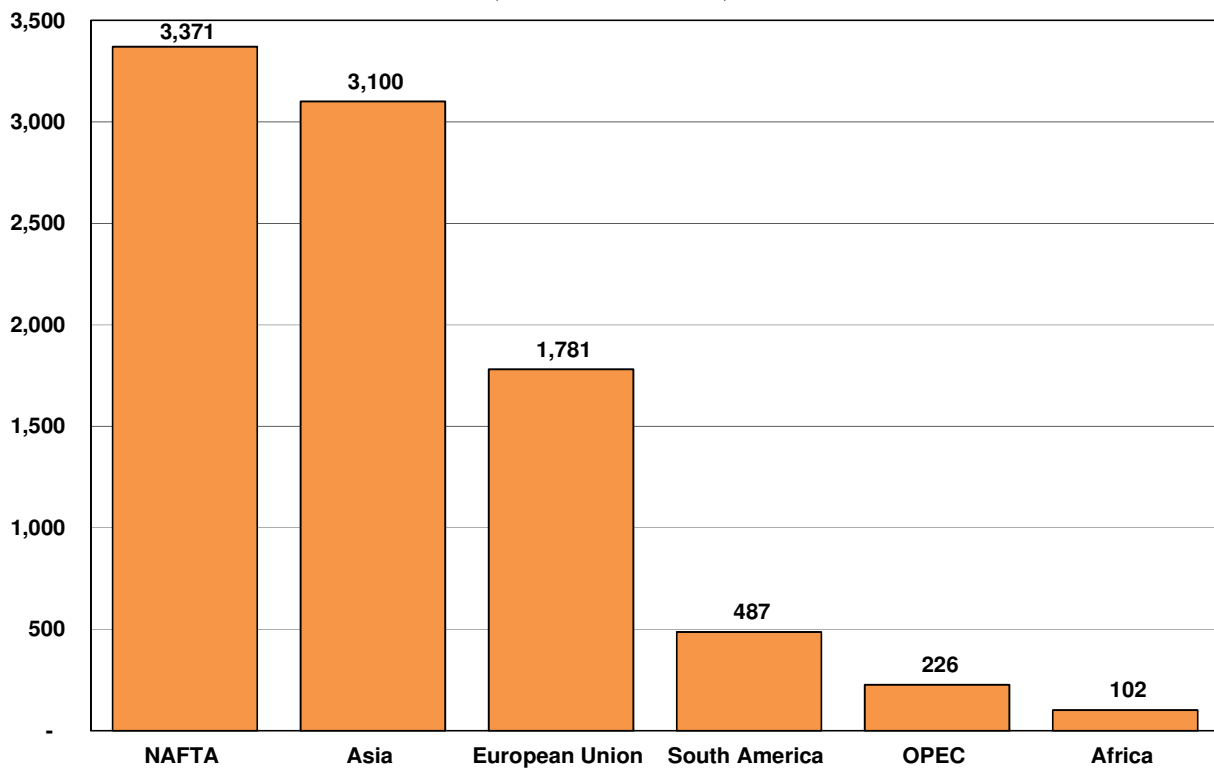
3.2 Inland Empire Merchandise Exports by Region

NAFTA and Asia are the two main trading regions for the Inland Empire in 2013 (Figure 3). These two regions accounted for over two thirds of all of merchandise exports from the Inland Empire in 2013. In 2013, merchandise exports were \$3,371 million to NAFTA and \$3,100 million to Asia (Table 5). Merchandise exports to NAFTA grew considerably by 44.2% in 2013 (see Appendix A3). Another important region for merchandise exports is the European Union which accounted for another \$1,781 million. NAFTA, Asia and the European Union combined had over 86% of all of the merchandise

exports from the Inland Empire.

Over the period 2010 through 2012, Asia was the major merchandise export region for the Inland Empire. However, in 2013, NAFTA took over first place from Asia for merchandise exports. Both NAFTA and Asia had merchandise exports exceeding \$3,000 million in 2013. Merchandise exports to NAFTA are projected to grow around 15% over the forecast horizon and increase from \$3,872 million in 2014 to \$5,108 million by 2016. There should also be strong growth in merchandise exports to Asia of 12.8% in 2014 and almost reach \$4,000 million by 2016 (see Table 5). Merchandise exports to the European Union are projected to grow over the forecast horizon to around \$2,000 million in 2014 and

Figure 3
Inland Empire Exports by Region for 2013
 (millions of dollars)



Source: CEAF California State University Fullerton and International Trade Administration

2015 and reach \$2,157 million in 2016. While merchandise exports to Africa are projected to remain relatively flat over the forecast horizon, there should be a slight increase to OPEC and a more robust rise to South America.

Table 5
Inland Empire Merchandise Exports by Region
 (millions of dollars)

Year	Africa	Asia	European Union	NAFTA	OPEC	South America
2005	36	1,230	831	1,309	61	99
2006	44	1,248	1,079	1,382	84	153
2007	55	1,382	1,240	1,633	131	260
2008	58	1,731	1,575	2,100	152	239
2009	70	1,449	1,290	1,860	165	166
2010	88	2,174	1,303	1,829	198	292
2011	92	2,443	1,410	2,207	173	309
2012	103	2,858	1,629	2,338	202	375
2013	102	3,100	1,781	3,371	226	487
Forecasts						
2014	106	3,499	1,960	3,872	255	562
2015	107	3,748	2,083	4,462	264	607
2016	109	3,963	2,157	5,108	271	647

Source: CEAf, California State University Fullerton and International Trade Administration

3.3 Inland Empire Merchandise Exports by Sector

The three main sectors for merchandise exports from the Inland Empire are: Miscellaneous Manufacturing, Transportation Equipment and Computer & Electronic Products (Figure 4 and Table 6). In 2013, merchandise exports from Miscellaneous Manufacturing totaled \$1,867 million (a 19.5% share), Transportation Equipment amounted to \$1,574 million (a 16.4% share) and Computer & Electronic Products reached \$1,348 (a 14.1% share) as shown in Appendix A5. Transportation Equipment had the largest growth in merchandise exports at a massive 73.9% (see Appendix A4). These three leading sectors represent half of the Inland Empire exports.

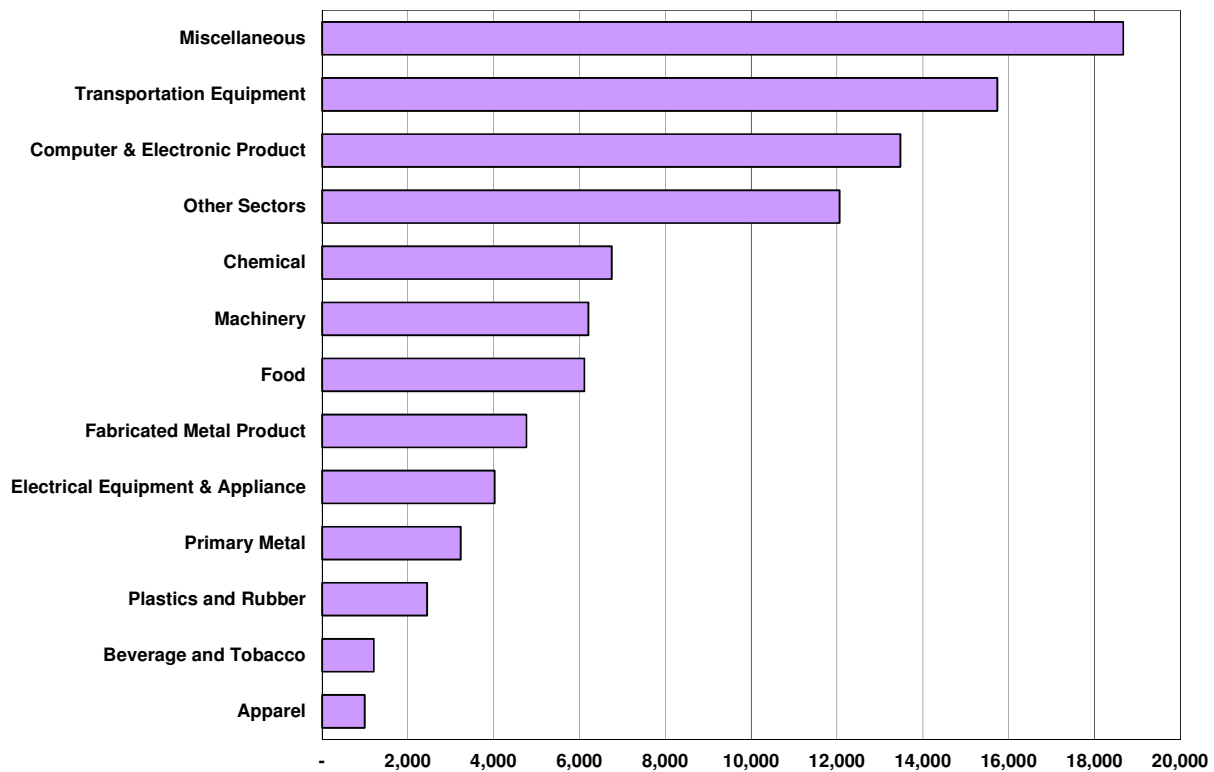
The next three largest exporting industries combine for \$1,908 million which is 19.9% of total exports are: Chemical (\$675 million), Machinery (\$621 million) and Food (\$612 million). Some other major industries for Inland Empire merchandise exports include Fabricated Metal, Electrical Equipment and Primary Metal.

Miscellaneous Manufacturing at around 20% of merchandise exports, grew by 7.3% in 2013 following the robust 23.0% growth in 2012 (see Appendix A4). While Miscellaneous Manufacturing merchandise exports are projected to increase strongly in 2014 by 19.5% as the global economy showed stronger growth compared to 2013, for the remainder of the forecast horizon it is projected to grow between 2% and 4%. Miscellaneous Manufacturing is projected to rise to \$2,230 million in 2014 and

reach \$2,368 million by 2016. There was an incredible 73.9% increase in Transportation Equipment exports in 2013, the third year in a row with strong gains. Merchandise exports in Transportation Equipment grew from \$905 million in 2012 to \$1,574 million in 2013, representing a \$669 million increase. Given the remarkable growth in Transportation Equipment in 2013, there is likely to be a decrease in 2014 followed by increases in the next two years. Transportation Equipment is projected to be \$1,143 million in 2014 and increase to \$1,384 in 2016. Computer and Electronic Equipment grew by 29.4% in 2013 to \$1,348 million and are projected to grow over the forecast horizon from \$1,491 million to \$1,552 million by 2016.

Merchandise exports of Food and Apparel exceeded 50% growth in 2013. There was strong double digit growth rate for Beverages and Tobacco (12.4%), Fabricated Metal (17.7%), and Electrical Equipment & Appliance (19.6%). There were moderate growth rates for Machinery (1.2%) and Other Sectors (8.5%). Sectors that experienced a decrease in merchandise exports were Chemicals (-0.2%),

Figure 4
Inland Empire Exports by Sectors for 2013
 (millions of dollars)



Source: CEAF California State University Fullerton and International Trade Administration

Plastics and Rubber Products (-0.8%), and Primary Metal (-3.2%). These sectors together accounted for \$4,781 million in merchandise exports and are projected to increase to \$7,543 million in 2016.

Table 6
Inland Empire Merchandise Exports by Sector
 (millions of dollars)

Year	Transportation Equipment	Computer & Electronics	Miscellaneous Manufacturing	Chemical	Machinery	Beverage & Tobacco	Food
2005	498	603	707	256	362	50	139
2006	608	786	687	279	426	59	161
2007	710	951	825	347	462	68	203
2008	1,215	1,042	1,052	375	470	75	194
2009	704	1,062	1,042	373	411	89	234
2010	635	1,037	1,294	498	494	80	297
2011	737	1,068	1,414	544	604	63	351
2012	905	1,041	1,740	677	613	107	407
2013	1,574	1,348	1,867	675	621	121	612
Forecast							
2014	1,143	1,491	2,230	790	678	131	630
2015	1,296	1,512	2,282	838	694	135	645
2016	1,384	1,552	2,368	850	701	134	662

Source: CEAF, California State University Fullerton and International Trade Administration

Table 6 (continued)
Inland Empire Merchandise Exports by Sector
 (millions of dollars)

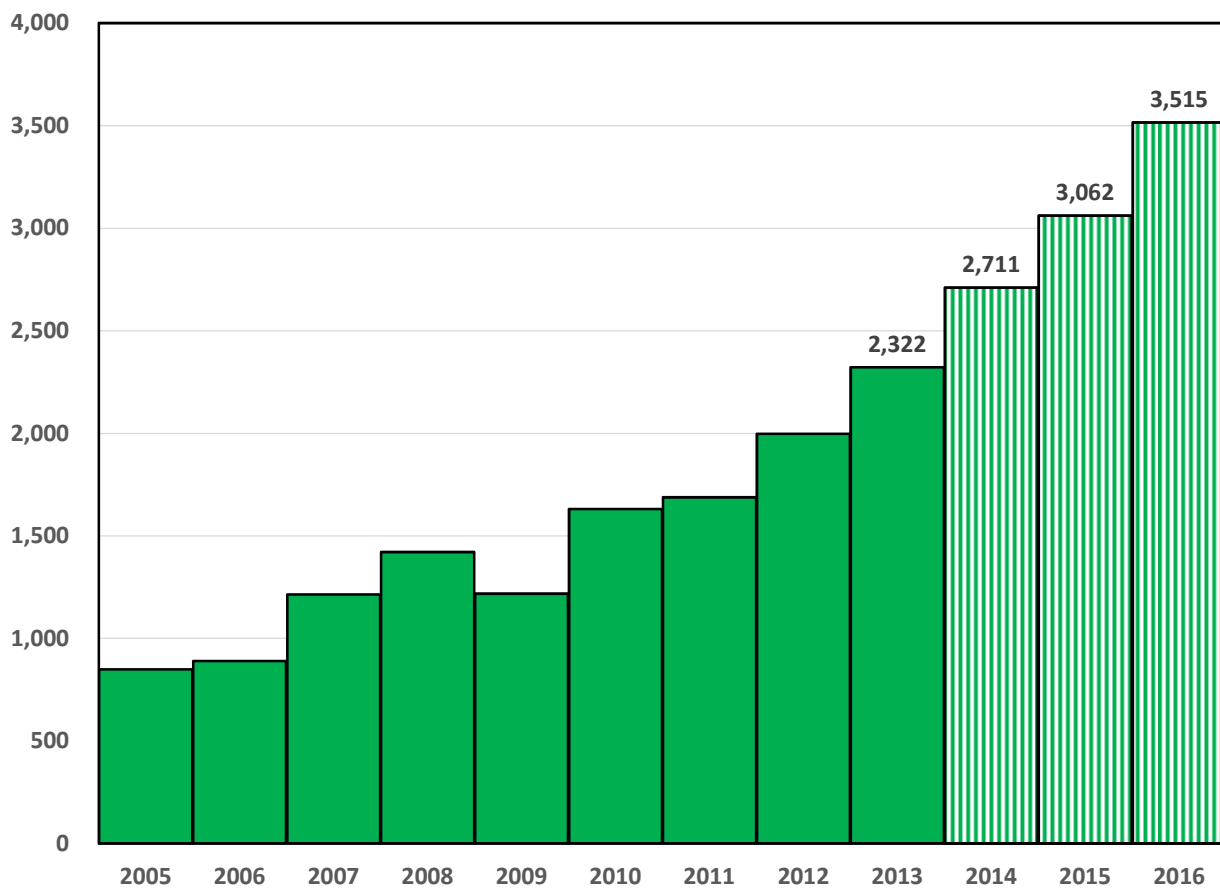
Year	Fabricated Metal	Electrical Equipment	Apparel	Plastics & Rubber	Primary Metal	Other Sectors
2005	213	132	24	97	149	544
2006	278	144	27	109	156	472
2007	344	173	36	132	187	532
2008	361	226	33	153	272	774
2009	284	173	35	142	162	644
2010	351	223	61	179	241	841
2011	382	307	68	214	330	988
2012	405	336	64	245	334	1,112
2013	476	402	99	245	323	1,206
Forecasts						
2014	549	461	103	303	425	1,851
2015	545	462	102	300	420	2,610
2016	544	465	104	296	419	3,367

Source: CEAF, California State University Fullerton and International Trade Administration

4. MERCHANDISE EXPORTS FOR THE CITY OF RIVERSIDE

Merchandise exports for the City of Riverside is represented by the 3 Digit Zip code 925. Since the end of the Great Recession in 2009, merchandise exports from the City of Riverside have grown at an impressive rate per year, according to the data from the International Trade Organization (Figure 5 and Table 7). In 2013, merchandise exports were \$2,322 million which is 16.3% higher than in 2012.

Figure 5
City of Riverside Merchandise Exports
3 Digit Zip code 925
(millions of dollars)



Merchandise exports were 2.7 times larger in 2013 compared to 2005. Over the forecast horizon, merchandise exports from the City of Riverside are projected to grow to \$2,711 million in 2014, exceed \$3,000 in 2015 and continue to grow to \$3,515 in 2016.

Table 7
City of Riverside Merchandise Exports
3 Digit Zip code 925
(dollars)

Year	Export Volume	Growth Rate
2005	848,968,029	n/a
2006	889,703,833	4.8%
2007	1,214,377,043	36.5%
2008	1,421,541,736	17.1%
2009	1,218,180,425	-14.3%
2010	1,631,543,727	33.9%
2011	1,687,919,422	3.5%
2012	1,997,467,722	18.3%
2013	2,322,076,904	16.3%
Forecast		
2014	2,711,016,558	16.7%
2015	3,062,486,106	13.0%
2016	3,514,641,612	14.8%

*Source: CEAF, California State University Fullerton and
International Trade Administration*

4.1 Merchandise Exports for ZIP Codes 923 and 924

A breakdown of merchandise exports to the three digit zip codes 923 and 924 are in Table 8. For zip code 923, merchandise exports grew by an astounding 65.4% in 2013 to \$1,689 million and by 65.6% to \$236 million for zip code 924. Merchandise exports for both of these three digit zip codes grew steadily in 2012 and 2013. For zip code 923, merchandise exports are projected to grow moderately to \$1,743 (3.2% growth) in 2014 followed by a stronger increase to \$1,906 million (9.3% growth) in 2015 and reach \$2,239 million (17.5% growth) in 2016. The total volume of merchandise exports for zip code 924 is forecasted to reach \$238 million (0.9% growth) in 2014, then increase to \$275 million (15.7% growth) in 2015 and reach \$322 million (16.9% growth) in 2016.

Table 8
Total Merchandise Exports
Zip Codes 923 and 924
(dollars)

Year	ZIP 923		ZIP 924	
	Export Volume	Growth Rate	Export Volume	Growth Rate
2005	472,056,743	n/a	39,246,552	n/a
2006	659,859,997	39.8%	49,689,129	26.6%
2007	772,315,749	17.0%	63,614,756	28.0%
2008	925,258,707	19.8%	61,457,488	-3.4%
2009	704,931,458	-23.8%	78,411,932	27.6%
2010	828,072,190	17.5%	73,000,825	-6.9%
2011	915,596,198	10.6%	103,815,461	42.2%
2012	1,020,853,878	11.5%	142,373,933	37.1%
2013	1,688,612,014	65.4%	235,759,529	65.6%
Forecast				
2014	1,743,185,372	3.2%	237,911,794	0.9%
2015	1,905,836,375	9.3%	275,329,515	15.7%
2016	2,238,510,454	17.5%	321,804,903	16.9%

Source: CEAF, California State University Fullerton and International Trade Administration

4.2 Merchandise Exports for the City of Riverside by Sector

In 2013, the top five sectors for merchandise exports were estimated as Miscellaneous Manufacturing (\$445 million), Transportation Equipment (\$399 million), Computer & Electronic (\$330 million), Chemical Manufacturing (\$171 million) and Machinery Manufacturing (\$160 million). Merchandise exports of Miscellaneous Manufacturing is projected to grow over the forecast horizon to \$511 million in 2013 and reach \$615 million by 2016 (Table 9 and Appendix A6). Computer and Electronic exports are forecasted to grow strongly in 2014 to \$392 million and climb to \$440 million by 2016. As for Transportation Equipment, given the surge in exports in this sector in 2013, merchandise exports are projected to fall to \$298 million before bouncing back to \$394 million by 2016. Chemical Manufacturing exports are expected to grow to \$206 million in 2014 and edge upwards to \$242 million by 2016. Machinery Manufacturing exports are projected to reach \$180 million in 2014 and rise to \$201 million by 2016.

Table 9
City of Riverside
Merchandise Exports by Sectors
(dollars)

Year	Miscellaneous Manufacturing	Computer & Electronic	Transportation Equipment	Chemical Manufacturing	Machinery Manufacturing
2013	444,878,672	329,851,824	398,972,364	171,212,878	160,466,556
Forecasts					
2014	511,339,454	391,607,283	297,794,813	205,865,304	179,631,941
2015	565,412,472	407,352,878	346,615,027	224,055,798	189,016,791
2016	615,142,677	440,152,801	393,942,095	241,864,156	201,300,927

Source: CEAF, California State University Fullerton

5. CONCLUSION

Merchandise exports from the Inland Empire and City of Riverside generate millions of dollars of revenue and provide many jobs for the region. The vast majority of these merchandise exports are to Canada and Mexico. Asia is another major destination for Inland Empire merchandise exports. The major sectors for merchandise exports are Miscellaneous Manufacturing, Transportation Equipment and Computers & Electronic Products. Merchandise trade exports trends are similar to those of the U.S. and California but there are some major differences that occur in the region.

In 2013, merchandise exports from the Inland Empire totaled \$9,569 million and are projected to continue to grow strongly over the forecast horizon reaching \$12,848 million in 2016. The Inland Empire was heavily dependent in 2013 on Canada which accounts for 21% and Mexico for 14% of merchandise exports from the Inland Empire. Other major trading partners are China, Japan, and The Netherlands who account for another 21.3% of merchandise exports. Merchandise exports are forecasted to increase to these countries over the forecasts horizon. While merchandise exports to Canada and Mexico in 2013 accounted for 35%, another important region was Asia which accounted for \$3,100 million. These two regions are projected to continue to be a main destination for merchandise exports through 2016. The three largest sectors for merchandise exports from the Inland Empire are Miscellaneous Manufacturing at \$1,867 million (a 19.5% share), Transportation Equipment at \$1,574 million (a 16.4% share) and Computer and Electronic Products at \$1,348 (a 14.5% share) in 2013 and remain the leading sectors through 2016.

For the City of Riverside, represented by three digit zip code 925, merchandise exports in 2013 were \$2,322 million and are forecasted to grow significantly to \$3,515 million by 2016. The top three sectors for merchandise exports are Miscellaneous Manufacturing, Transportation Equipment and Computer & Electronic Products which are all projected to continue to increase through 2016.

6. APPENDIX

A1. DATA SOURCES

- “Annual Survey of Manufactures: Geographic Area Statistics,” *U.S. Census Bureau*, <http://www.census.gov/prod/www/abs/manu-asm-geo>.
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A2. METHODOLOGY

Econometric and statistical models were used to project total merchandise exports by volume, country, region and sector from 2014 through 2016. Variables used in the models include exchange rates, labor productivity, California and U.S. foreign growth data measured by real gross domestic product and exports by industry.

A3. EXPORT REGIONS

Africa

Algeria, Angola, Benin, Botswana, British Indian Ocean Territories, Burkina, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo (Brazzaville), Congo (Kinshasa), Cote d'Ivoire, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, French Southern and Antarctic Lands, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mayotte, Morocco, Mozambique, Namibia, Niger, Nigeria, Reunion, Rwanda, St. Helena, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Western Sahara, Zambia, Zimbabwe.

Asia

Afghanistan, Bangladesh, Bhutan, Brunei, Burma, Cambodia, China, East Timor, Hong Kong, India, Indonesia, Japan, Laos, Macau, Malaysia, Maldives, Mongolia, Nepal, North Korea, Pakistan, Philippines, Singapore, South Korea, Sri Lanka, Taiwan, Thailand, Vietnam.

European Union

Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Federal Republic of Germany, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom.

North American Free Trade Agreement (NAFTA)

Canada, Mexico

Organization of the Petroleum Exporting Countries (OPEC)

Algeria, Angola, Ecuador, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, Venezuela.

South America

Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Falkland Islands, French Guiana, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela

Source: U.S. Census Bureau, Foreign Trade Statistics

A4. North American Industry Classification System (NAICS) Manufacturing Definitions

336 Transportation Equipment Manufacturing

Industries in the Transportation Equipment Manufacturing subsector produce equipment for transporting people and goods. Transportation equipment is a type of machinery. An entire subsector is devoted to this activity because of the significance of its economic size in all three North American countries.

Establishments in this subsector utilize production processes similar to those of other machinery manufacturing establishments - bending, forming, welding, machining, and assembling metal or plastic parts into components and finished products. However, the assembly of components and subassemblies and their further assembly into finished vehicles tends to be a more common production process in this subsector than in the Machinery Manufacturing subsector.

NAICS has industry groups for the manufacture of equipment for each mode of transport - road, rail, air and water. Parts for motor vehicles warrant a separate industry group because of their importance and because parts manufacture requires less assembly, and the establishments that manufacture only parts are not as vertically integrated as those that make complete vehicles.

Land use motor vehicle equipment not designed for highway operation (e.g., agricultural equipment, construction equipment, and materials handling equipment) is classified in the appropriate NAICS subsector based on the type and use of the equipment.

334 Computer and Electronic Product Manufacturing

Industries in the Computer and Electronic Product Manufacturing subsector group establishments that manufacture computers, computer peripherals, communications equipment, and similar electronic products, and establishments that manufacture components for such products. The Computer and Electronic Product Manufacturing industries have been combined in the hierarchy of NAICS because of the economic significance they have attained. Their rapid growth suggests that they will become even more important to the economies of all three North American countries in the future, and in addition their manufacturing processes are fundamentally different from the manufacturing processes of other machinery and equipment. The design and use of integrated circuits and the application of highly specialized miniaturization technologies are common elements in the production technologies of the computer and electronic subsector. Convergence of technology motivates this NAICS subsector. Digitalization of sound recording, for example, causes both the medium (the compact disc) and the equipment to resemble the technologies for recording, storing, transmitting, and manipulating data. Communications technology and equipment have been converging with computer technology. When technologically-related components are in the same sector, it makes it easier to adjust the classification for future changes, without needing to redefine its basic structure. The creation of the Computer and Electronic Product Manufacturing subsector assists in delineating new and emerging industries because the activities that will serve as the probable sources of new industries, such as computer manufacturing and communications equipment manufacturing, or computers and audio equipment, are brought together. As new activities emerge, they are less likely therefore, to cross the subsector boundaries of the classification.

339 Miscellaneous Manufacturing

Industries in the Miscellaneous Manufacturing subsector make a wide range of products that cannot readily be classified in specific NAICS subsectors in manufacturing. Processes used by these establishments vary significantly, both among and within industries. For example, a variety of

manufacturing processes are used in manufacturing sporting and athletic goods that include products such as tennis racquets and golf balls. The processes for these products differ from each other, and the processes differ significantly from the fabrication processes used in making dolls or toys, the melting and shaping of precious metals to make jewelry, and the bending, forming, and assembly used in making medical products.

The industries in this subsector are defined by what is made rather than how it is made. Although individual establishments might be appropriately classified elsewhere in the NAICS structure, for historical continuity, these product-based industries were maintained. In most cases, no one process or material predominates for an industry.

Establishments in this subsector manufacture products as diverse as medical equipment and supplies, jewelry, sporting goods, toys, and office supplies.

325 Chemical Manufacturing

The Chemical Manufacturing subsector is based on the transformation of organic and inorganic raw materials by a chemical process and the formulation of products. This subsector distinguishes the production of basic chemicals that comprise the first industry group from the production of intermediate and end products produced by further processing of basic chemicals that make up the remaining industry groups.

This subsector does not include all industries transforming raw materials by a chemical process. It is common for some chemical processing to occur during mining operations. These beneficiating operations, such as copper concentrating, are classified in Sector 21, Mining, Quarrying, and Oil and Gas Extraction. Furthermore, the refining of crude petroleum is included in Subsector 324, Petroleum and Coal Products Manufacturing. In addition, the manufacturing of aluminum oxide is included in Subsector 331, Primary Metal Manufacturing; and beverage distilleries are classified in Subsector 312, Beverage and Tobacco Product Manufacturing. As is the case of these two activities, the grouping of industries into subsectors may take into account the association of the activities performed with other activities in the subsector.

333 Machinery Manufacturing

Industries in the Machinery Manufacturing subsector create end products that apply mechanical force, for example, the application of gears and levers, to perform work. Some important processes for the manufacture of machinery are forging, stamping, bending, forming, and machining that are used to shape individual pieces of metal. Processes, such as welding and assembling are used to join separate parts together. Although these processes are similar to those used in metal fabricating establishments, machinery manufacturing is different because it typically employs multiple metal forming processes in manufacturing the various parts of the machine. Moreover, complex assembly operations are an inherent part of the production process.

In general, design considerations are very important in machinery production. Establishments specialize in making machinery designed for particular applications. Thus, design is considered to be part of the production process for the purpose of implementing NAICS. The NAICS structure reflects this by defining industries and industry groups that make machinery for different applications. A broad distinction exists between machinery that is generally used in a variety of industrial applications (i.e., general purpose machinery) and machinery that is designed to be used in a particular industry (i.e., special purpose machinery). Three industry groups consist of special purpose machinery--Agricultural, Construction, and Mining Machinery Manufacturing; Industrial Machinery Manufacturing; and Commercial and Service Industry Machinery Manufacturing. The other industry

groups make general-purpose machinery: Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing; Metalworking Machinery Manufacturing; Engine, Turbine, and Power Transmission Equipment Manufacturing; and Other General Purpose Machinery Manufacturing.

312 Beverage and Tobacco Product Manufacturing

Industries in the Beverage and Tobacco Product Manufacturing subsector manufacture beverages and tobacco products. The industry group, Beverage Manufacturing, includes three types of establishments: (1) those that manufacture nonalcoholic beverages; (2) those that manufacture alcoholic beverages through the fermentation process; and (3) those that produce distilled alcoholic beverages. Ice manufacturing, while not a beverage, is included with nonalcoholic beverage manufacturing because it uses the same production process as water purification.

In the case of activities related to the manufacture of beverages, the structure follows the defined production processes. Brandy, a distilled beverage, was not placed under distillery product manufacturing, but rather under the NAICS class for winery product manufacturing since the production process used in the manufacturing of alcoholic grape-based beverages produces both wines (fermented beverage) and brandies (distilled beverage).

The industry group, Tobacco Manufacturing, includes two types of establishments: (1) those engaged in redrying and stemming tobacco and, (2) those that manufacture tobacco products, such as cigarettes and cigars.

311 Food Manufacturing

Industries in the Food Manufacturing subsector transform livestock and agricultural products into products for intermediate or final consumption. The industry groups are distinguished by the raw materials (generally of animal or vegetable origin) processed into food products.

The food products manufactured in these establishments are typically sold to wholesalers or retailers for distribution to consumers, but establishments primarily engaged in retailing bakery and candy products made on the premises not for immediate consumption are included.

Establishments primarily engaged in manufacturing beverages are classified in Subsector 312, Beverage and Tobacco Product Manufacturing.

332 Fabricated Metal Product Manufacturing

Industries in the Fabricated Metal Product Manufacturing subsector transform metal into intermediate or end products, other than machinery, computers and electronics, and metal furniture, or treat metals and metal formed products fabricated elsewhere. Important fabricated metal processes are forging, stamping, bending, forming, and machining, used to shape individual pieces of metal; and other processes, such as welding and assembling, used to join separate parts together. Establishments in this subsector may use one of these processes or a combination of these processes.

The NAICS structure for this subsector distinguishes the forging and stamping processes in a single industry. The remaining industries in the subsector group establishments based on similar combinations of processes used to make products.

The manufacturing performed in the Fabricated Metal Product Manufacturing subsector begins with manufactured metal shapes. The establishments in this subsector further fabricate the purchased metal

shapes into a product. For instance, the Spring and Wire Product Manufacturing industry starts with wire and fabricates such items.

Within manufacturing there are other establishments that make the same products made by this subsector; only these establishments begin production further back in the production process. These establishments have a more integrated operation. For instance, one establishment may manufacture steel, draw it into wire, and make wire products in the same establishment. Such operations are classified in the Primary Metal Manufacturing subsector.

335 Electrical Equipment, Appliance, and Component Manufacturing

Industries in the Electrical Equipment, Appliance, and Component Manufacturing subsector manufacture products that generate, distribute and use electrical power. Electric Lighting Equipment Manufacturing establishments produce electric lamp bulbs, lighting fixtures, and parts. Household Appliance Manufacturing establishments make both small and major electrical appliances and parts. Electrical Equipment Manufacturing establishments make goods, such as electric motors, generators, transformers, and switchgear apparatus. Other Electrical Equipment and Component Manufacturing establishments make devices for storing electrical power (e.g., batteries), for transmitting electricity (e.g., insulated wire), and wiring devices (e.g., electrical outlets, fuse boxes, and light switches).

315 Apparel Manufacturing

Industries in the Apparel Manufacturing subsector group establishments with two distinct manufacturing processes: (1) cut and sew (i.e., purchasing fabric and cutting and sewing to make a garment), and (2) the manufacture of garments in establishments that first knit fabric and then cut and sew the fabric into a garment. The Apparel Manufacturing subsector includes a diverse range of establishments manufacturing full lines of ready-to-wear apparel and custom apparel: apparel contractors, performing cutting or sewing operations on materials owned by others; jobbers performing entrepreneurial functions involved in apparel manufacture; and tailors, manufacturing custom garments for individual clients are all included. Knitting, when done alone, is classified in the Textile Mills subsector, but when knitting is combined with the production of complete garments, the activity is classified in Apparel Manufacturing.

326 Plastics and Rubber Products Manufacturing

Industries in the Plastics and Rubber Products Manufacturing subsector make goods by processing plastics materials and raw rubber. The core technology employed by establishments in this subsector is that of plastics or rubber product production. Plastics and rubber are combined in the same subsector because plastics are increasingly being used as a substitute for rubber; however the subsector is generally restricted to the production of products made of just one material, either solely plastics or rubber.

Many manufacturing activities use plastics or rubber, for example the manufacture of footwear, or furniture. Typically, the production process of these products involves more than one material. In these cases, technologies that allow disparate materials to be formed and combined are of central importance in describing the manufacturing activity. In NAICS, such activities (the footwear and furniture manufacturing) are not classified in the Plastics and Rubber Products Manufacturing subsector because the core technologies for these activities are diverse and involve multiple materials.

Within the Plastics and Rubber Products Manufacturing subsector, a distinction is made between plastics and rubber products at the industry group level, although it is not a rigid distinction, as can be seen from the definition of Industry 32622, Rubber and Plastics Hoses and Belting Manufacturing. As materials technology progresses, plastics are increasingly being used as a substitute for rubber; and

eventually, the distinction may disappear as a basis for establishment classification.

In keeping with the core technology focus of plastics, lamination of plastics film to plastics film as well as the production of bags from plastics only is classified in this subsector. Lamination and bag production involving plastics and materials other than plastics are classified in the NAICS Subsector 322, Paper Manufacturing.

331 Primary Metal Manufacturing

Industries in the Primary Metal Manufacturing subsector smelt and/or refine ferrous and nonferrous metals from ore, pig or scrap, using electrometallurgical and other process metallurgical techniques. Establishments in this subsector also manufacture metal alloys and superalloys by introducing other chemical elements to pure metals. The output of smelting and refining, usually in ingot form, is used in rolling, drawing, and extruding operations to make sheet, strip, bar, rod, or wire, and in molten form to make castings and other basic metal products.

Primary manufacturing of ferrous and nonferrous metals begins with ore or concentrate as the primary input. Establishments manufacturing primary metals from ore and/or concentrate remain classified in the primary smelting, primary refining, or iron and steel mill industries regardless of the form of their output. Establishments primarily engaged in secondary smelting and/or secondary refining recover ferrous and nonferrous metals from scrap and/or dross. The output of the secondary smelting and/or secondary refining industries is limited to shapes such as ingot or billet that will be further processed. Recovery of metals from scrap often occurs in establishments that are primarily engaged in activities, such as rolling, drawing, extruding, or similar processes.

Excluded from the Primary Metal Manufacturing subsector are establishments primarily engaged in manufacturing ferrous and nonferrous forgings (except ferrous forgings made in steel mills) and stampings. Although forging, stamping, and casting are all methods used to make metal shapes, forging and stamping do not use molten metals and are included in Subsector 332, Fabricated Metal Product Manufacturing. Establishments primarily engaged in operating coke ovens are classified in Industry 32419, Other Petroleum and Coal Products Manufacturing.

A5. Some Inland Empire Companies that are involved in Merchandise Exports

Agri Pacific Inc (wholesale and retail trade), Blacoh Fluid Controls Inc (metal and metal products), BSA International Aerospace Company (transportation), Isca Technologies Inc (wholesale and retail trade), Kpi Ultrasound Inc (wholesale and retail trade), Pacific Consolidated Industries (machinery, equipment, furniture, recycling), Western Hydrostatics Inc (machinery, equipment, furniture, recycling), and Yardney Water Management Systems (manufacture of other special-purpose machinery).

**A6. INLAND EMPIRE AND CITY OF RIVERSIDE
MERCHANDISE EXPORTS**

**Table A1
Inland Empire Merchandise Exports by Country: Growth Rate**

Year	Canada	China	Japan	Netherlands	Mexico	Rest of World	Total Exports
2006	11.5%	-6.5%	-15.1%	45.4%	-3.9%	20.2%	11.1%
2007	25.6%	15.1%	12.7%	26.6%	4.3%	19.2%	18.6%
2008	32.8%	10.3%	26.5%	96.1%	19.0%	16.4%	25.6%
2009	-33.0%	-13.7%	-26.7%	-1.1%	43.0%	-17.3%	-14.2%
2010	10.1%	46.8%	102.1%	-7.3%	-15.5%	22.1%	16.3%
2011	10.3%	33.5%	0.2%	-7.2%	36.6%	12.4%	13.5%
2012	-1.4%	10.3%	23.9%	27.6%	15.0%	14.0%	13.0%
2013	64.0%	10.9%	2.9%	13.9%	23.1%	10.1%	19.8%
Forecast							
2014	14.5%	11.8%	9.5%	15.2%	15.3%	11.2%	12.7%
2015	17.3%	6.9%	5.2%	11.9%	12.4%	6.0%	9.8%
2016	16.8%	5.3%	5.0%	9.2%	11.1%	3.9%	8.5%

Source: CEAF, California State University Fullerton and International Trade Association

**Table A2
Inland Empire Exports by Country: Shares of Total Volumes**

Year	Canada	China	Japan	Netherlands	Mexico	Rest of World
2006	21.5%	6.7%	6.6%	5.8%	11.5%	48.0%
2007	22.8%	6.5%	6.3%	6.2%	10.1%	48.2%
2008	24.1%	5.7%	6.3%	9.6%	9.6%	44.7%
2009	18.8%	5.7%	5.4%	11.1%	15.9%	43.0%
2010	17.8%	7.2%	9.4%	8.9%	11.6%	45.2%
2011	17.3%	8.5%	8.3%	7.2%	13.9%	44.8%
2012	15.1%	8.3%	9.1%	8.2%	14.2%	45.2%
2013	20.7%	7.7%	7.8%	7.8%	14.6%	41.5%
Forecast						
2014	21.0%	7.6%	7.6%	7.9%	14.9%	40.9%
2015	22.4%	7.4%	7.3%	8.1%	15.2%	39.5%
2016	24.1%	7.2%	7.1%	8.2%	15.6%	37.9%

Source: CEAF, California State University Fullerton and International Trade Association

Table A3
Inland Empire Exports by Region: Growth Rate

Year	Africa	Asia	European Union	NAFTA	OPEC	South America
2006	21.8%	1.5%	29.8%	5.6%	36.7%	54.9%
2007	24.2%	10.7%	14.9%	18.2%	55.8%	69.5%
2008	5.9%	25.2%	27.0%	28.6%	15.9%	-8.1%
2009	21.2%	-16.2%	-18.1%	-11.4%	9.0%	-30.4%
2010	24.7%	50.0%	68.5%	-1.6%	19.9%	75.7%
2011	4.9%	12.4%	-35.2%	20.7%	-12.6%	5.9%
2012	12.0%	17.0%	15.6%	5.9%	16.8%	21.4%
2013	-0.9%	8.5%	9.3%	44.2%	11.8%	29.9%
Forecast						
2014	3.8%	12.8%	10.1%	14.9%	13.0%	15.4%
2015	1.1%	7.1%	6.3%	15.2%	3.2%	7.9%
2016	1.2%	5.7%	3.6%	14.5%	2.8%	6.7%

Source: CEAF, California State University Fullerton and International Trade Association

Table A4
Inland Empire Exports by Sector: Growth Rate

Industry	Transportation	Computer	Miscellaneous	Chemical	Machinery	Beverages	
	Equipment	Electronic				Tobacco	Food
2006	22.1%	30.3%	-2.8%	8.9%	17.5%	18.0%	16.2%
2007	16.8%	21.0%	20.1%	24.5%	8.5%	15.8%	25.6%
2008	71.0%	9.6%	27.4%	7.9%	1.8%	9.0%	-4.2%
2009	-42.0%	1.9%	-0.9%	-0.4%	-12.6%	18.9%	20.3%
2010	-9.8%	-2.4%	24.1%	33.4%	20.2%	-10.1%	27.0%
2011	16.0%	3.0%	9.3%	9.1%	22.2%	-20.4%	18.1%
2012	22.8%	-2.5%	23.0%	24.5%	1.5%	69.3%	16.2%
2013	73.9%	29.4%	7.3%	-0.2%	1.2%	12.4%	50.1%
Forecast							
2014	-27.4%	10.6%	19.5%	17.0%	9.2%	8.4%	3.1%
2015	13.4%	1.4%	2.3%	6.0%	2.4%	3.3%	2.3%
2016	6.8%	2.7%	3.8%	1.5%	1.1%	-0.9%	2.7%
Industry	Fabricated	Electrical	Apparel	Total	Primary	Other	Total
	Metal	Equipment					
2006	30.8%	8.8%	12.5%	12.0%	4.6%	-13.2%	11.1%
2007	23.6%	19.8%	34.5%	21.7%	19.9%	12.7%	18.6%
2008	4.9%	30.7%	-8.3%	16.0%	45.8%	45.4%	25.6%
2009	-21.2%	-23.4%	7.4%	-7.3%	-40.4%	-16.8%	-14.2%
2010	23.5%	29.0%	72.5%	25.6%	49.0%	30.6%	16.3%
2011	8.8%	37.6%	12.1%	20.1%	36.7%	17.4%	13.5%
2012	5.9%	9.6%	-7.0%	14.3%	1.1%	12.6%	13.0%
2013	17.7%	19.6%	56.5%	-0.1%	-3.2%	8.5%	19.8%
Forecast							
2014	15.2%	14.6%	3.2%	23.6%	31.6%	53.5%	12.7%
2015	-0.7%	0.2%	-0.5%	-0.8%	-1.1%	41.0%	9.8%
2016	-0.1%	0.6%	2.1%	-1.4%	-0.3%	29.0%	8.5%

Source: CEAFF, California State University Fullerton and International Trade Association

Table A5
Inland Empire Exports by Sector: Shares of Total Volume

Industry	Transportation Equipment	Computer & Electronic	Miscellaneous	Chemical	Machinery	Beverages Tobacco	Food
2006	14.5%	18.8%	16.4%	6.7%	10.2%	1.4%	3.9%
2007	14.3%	19.1%	16.6%	7.0%	9.3%	1.4%	4.1%
2008	19.5%	16.7%	16.8%	6.0%	7.5%	1.2%	3.1%
2009	13.1%	19.8%	19.5%	7.0%	7.7%	1.7%	4.4%
2010	10.2%	16.6%	20.8%	8.0%	7.9%	1.3%	4.8%
2011	10.4%	15.1%	20.0%	7.7%	8.5%	0.9%	5.0%
2012	11.3%	13.0%	21.8%	8.5%	7.7%	1.3%	5.1%
2013	16.4%	14.1%	19.5%	7.1%	6.5%	1.3%	6.4%
Forecasts							
2014	10.6%	13.8%	20.7%	7.3%	6.3%	1.2%	5.8%
2015	10.9%	12.8%	19.3%	7.1%	5.9%	1.1%	5.4%
2016	10.8%	12.1%	18.4%	6.6%	5.5%	1.0%	5.2%
Industry	Fabricated Metal	Electrical Equipment	Apparel	Total Farm	Primary Metal	Other Sectors	
2006	6.6%	3.4%	0.6%	2.6%	3.7%	11.3%	
2007	6.9%	3.5%	0.7%	2.7%	3.8%	10.7%	
2008	5.8%	3.6%	0.5%	2.5%	4.4%	12.4%	
2009	5.3%	3.2%	0.7%	2.7%	3.0%	12.0%	
2010	5.6%	3.6%	1.0%	2.9%	3.9%	13.5%	
2011	5.4%	4.3%	1.0%	3.0%	4.7%	14.0%	
2012	5.1%	4.2%	0.8%	3.1%	4.2%	13.9%	
2013	5.0%	4.2%	1.0%	2.6%	3.4%	12.6%	
Forecasts							
2014	5.1%	4.3%	1.0%	2.8%	3.9%	17.2%	
2015	4.6%	3.9%	0.9%	2.5%	3.6%	22.0%	
2016	4.2%	3.6%	0.8%	2.3%	3.3%	26.2%	

Source: CEAF, California State University Fullerton and International Trade Association

Table A6
City of Riverside Merchandise Exports
Growth Rate

Year	Miscellaneous Manufacturing	Computer & Electronic Products	Transportation Equipment	Chemical	Machinery
2014	14.9%	18.7%	-25.4%	20.2%	11.9%
2015	10.6%	4.0%	16.4%	8.8%	5.2%
2016	8.8%	8.1%	13.7%	7.9%	6.5%