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# The National Significance of California's Ocean Economy



**Eastern Research Group, Inc.**

Written under contract for the  
NOAA Office for Coastal Management  
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## Executive Summary

California is a vital contributor to the U.S. economy. With a state gross domestic product (GDP) of \$2.13 trillion in 2012, California represented 13 percent of the \$16.1 trillion GDP in the United States (BEA, 2015). As [Section 3: California's Total Economy](#) explains, California's contribution to the U.S. economy is primarily driven by three supersectors: financial activities; trade, transportation, and utilities; and public administration (NOEP, 2015). Although these state economy segments are measured and evaluated independently of one another, they share a key common characteristic: their concentration along the coastline.

As [Section 4: California's Coastal Economy](#) shows, California's 19 coastal counties generated \$662 billion in wages and \$1.7 trillion in GDP in 2012, which both account for 80 percent of their respective state totals (NOEP, 2015). [Section 5: California's Ocean Economy](#) takes into account what share of the economic activity of those 19 shore-adjacent counties (plus four inland counties) is dependent on the ocean. Leading sectors of California's ocean economy include tourism and recreation, marine transportation, and offshore mineral extraction, together representing 95 percent of California's ocean economy GDP. Markets for California's ocean-related activities represent a substantial portion of the U.S. ocean economy as a whole—13 percent of the establishments, 14 percent of the employment and wages, and 12 percent of the GDP in 2012 (NOAA ENOW, 2015).

Two sectors of California's ocean economy—tourism and recreation and marine transportation—are significant both at the state level and on a national scale. [Section 6: Tourism and Recreation in California](#) explains that tourism and recreation is the largest of California's six ocean-dependent sectors, accounting for 39 percent of the ocean economy's GDP (\$17.6 billion), 75 percent of the ocean economy's employment (368,000), and 46 percent of the ocean economy's wages (\$8.7 billion) in 2012 (NOAA ENOW, 2015). This sector also substantially impacts the national economy. It generates demand for inland manufacturers (who produce, for example, many of the inputs to California's hotel industry) and attracts foreign visitors whose expenditures provide an immediate boost to the national GDP.

[Section 7: Marine Transportation in California](#) explores the second largest of California's six ocean-dependent economic sectors, marine transportation, which accounted for \$14.1 billion, or 31 percent, of California's ocean-dependent GDP in 2012 (NOAA ENOW, 2015). Through activities such as deep sea freight and warehousing, California's marine transportation industry also plays a significant role on the national scale. In 2012, approximately \$331 billion of foreign goods were imported to the United States through California's ports, providing goods such as intermediate components crucial for U.S. manufacturers in inland states and the finished products upon which U.S. retailers depend. Moreover, in 2012, \$99 billion of goods were exported through California ports to the rest of the world, illustrating the key role California's marine transportation sector plays in allowing U.S. companies to reach foreign markets (FAF, 2015). As noted in Section 7 below, California ports do not only provide a trade channel between the West Coast and the rest of the world; rather, they are a gateway for the entire United States.

# 1. Introduction

## Purpose and Background

The purpose of this report is to present empirical evidence that illustrates the inland significance of California's marine transportation and ocean tourism sectors.<sup>1</sup> This report begins with a discussion of California's economy and then takes a closer look at six economic sectors that depend on ocean resources. Finally, we take an even closer look at two of these sectors—marine transportation and coastal tourism and recreation—and the way these ocean-based activities support local economies across the country.

California's economy is huge. In 2012, it accounted for 13 percent of the nation's GDP (BEA, 2015). California's population and economic centers are concentrated along its coast. Although California's 19 coastal counties account for only 22 percent of the state's land mass (Census, 2010), they account for 68 percent of its population (Census, 2010), 80 percent of its wages, and 80 percent of its GDP (NOEP, 2015).

*California's "ocean economy" employs 489,000 people, more than double the combined employment in California in residential building construction, telecommunications, and electric power generation (BLS, 2015a).*

Ocean resources make important contributions to California's economy. Six economic sectors directly depend on ocean resources: marine construction, living resources, offshore mineral extraction, ship and boat building, tourism and recreation, and marine transportation (NOAA ENOW, 2015). These sectors, constituting California's "ocean economy," employ 489,000 people, more than double the combined employment in California for residential building construction (North American Industry Classification System [NAICS] 2361), telecommunications (NAICS 517), and electric power generation (NAICS 22111) (BLS, 2015a). Together, marine transportation and ocean-dependent tourism and recreation account for 95 percent of California's ocean-dependent employment.

Figure 1 below (not to scale) shows the relationship between three classes of economic activity:

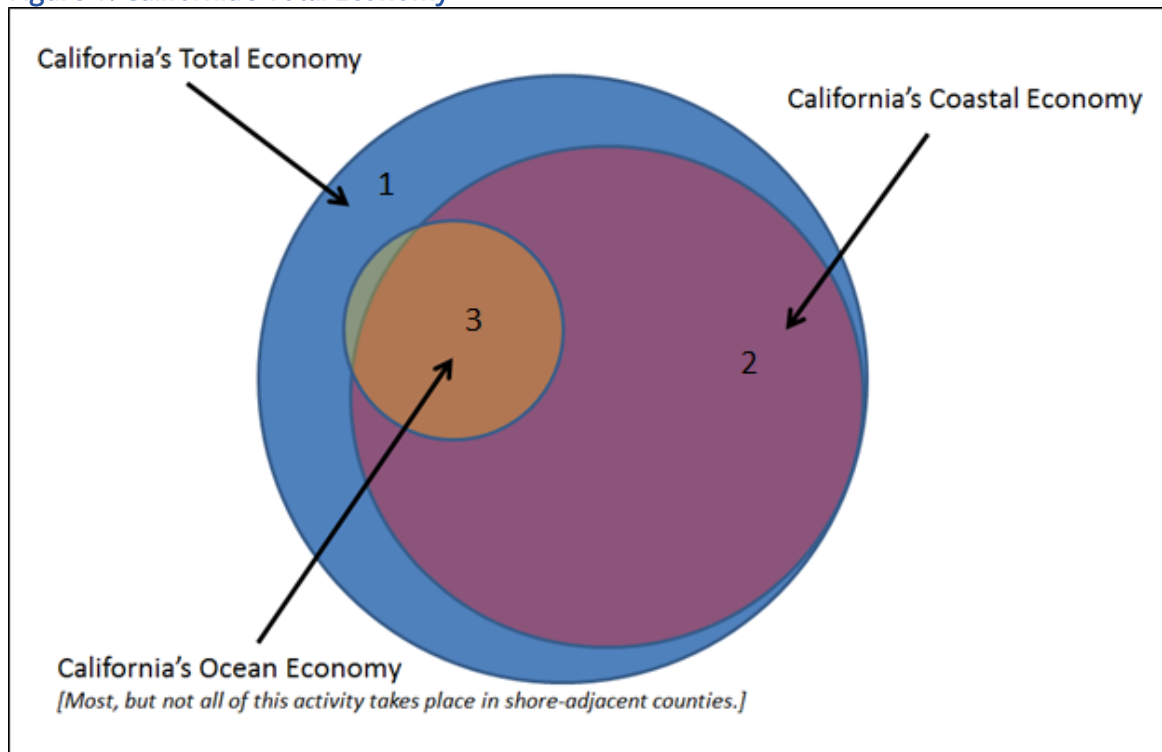
- (1) California's total economy.
- (2) California's coastal economy, defined as the total economy of its 19 shore-adjacent counties.
- (3) California's ocean economy.

The ocean economy (3), in general, represents a subset of the coastal economy (2). This is not surprising since most ocean-dependent activities must by their nature occur at the coast. However, this is not always the case. For example, the manufacture of navigational equipment and marine recreational boats sometimes occurs far inland. California's coastal economy is 80 percent of the size of the entire state's economy (measured by GDP), and the ocean economy is just over 2 percent of the total California economy (NOEP, 2015; NOAA ENOW, 2015).

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<sup>1</sup> All data in this report are from 2012 unless otherwise noted.

Figure 1. California's Total Economy



Source: NOAA Office for Coastal Management, 2015a

Despite its concentration along the Pacific Coast, the effects of California's ocean economy extend far inland. This report examines these effects, looking at the access that California's ports provide to export markets and this access' importance to inland manufacturing and agricultural centers, the inland origin of visitors to California's coastline, and other important connections between these sectors and the U.S. economy as a whole.

## 2. California's Total Economy

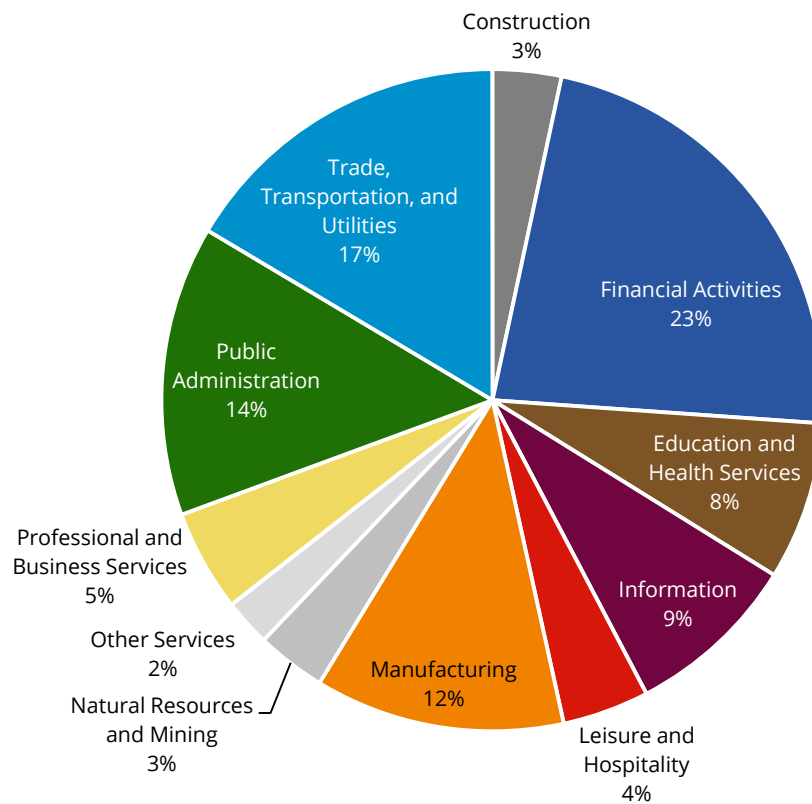
California is a vital contributor to the U.S. economy. In 2012, the California GDP was \$2.13 trillion, which made up 13 percent of the \$16.1 trillion GDP in the United States (NOEP, 2015). To put this in perspective, California's economy is bigger than Australia, Mexico, Canada, and Spain and is slightly larger than Russia and Italy. In fact, if California were its own country, it would be the eighth largest economy in the world, ranking only behind the rest of the United States, China, Japan, Germany, France, the United Kingdom, and Brazil in terms of GDP (World Bank, 2014).

As can be seen in Figure 2, California's \$2.13 trillion economy is dominated by three major classes of economic activity called "supersectors":

- Financial activities
- Trade, transportation, and utilities
- Public administration

These three classes accounted for more than half the 2012 GDP in California.<sup>2</sup>

**Figure 2. California GDP by NAICS Supersector, 2012**



Source: NOEP, 2015

Not only is California's economy dominated by a few economic sectors, but it is concentrated in a few coastal locations. In 2012, the five largest California counties—all of which are shore-adjacent—accounted for 61 percent of the state's GDP (see Table 1 below).

<sup>2</sup> "Supersectors," as defined by NAICS. For more information, see <http://www.census.gov/eos/www/naics/>.

**Table 1. Leading Contributors to California GDP, 2012**

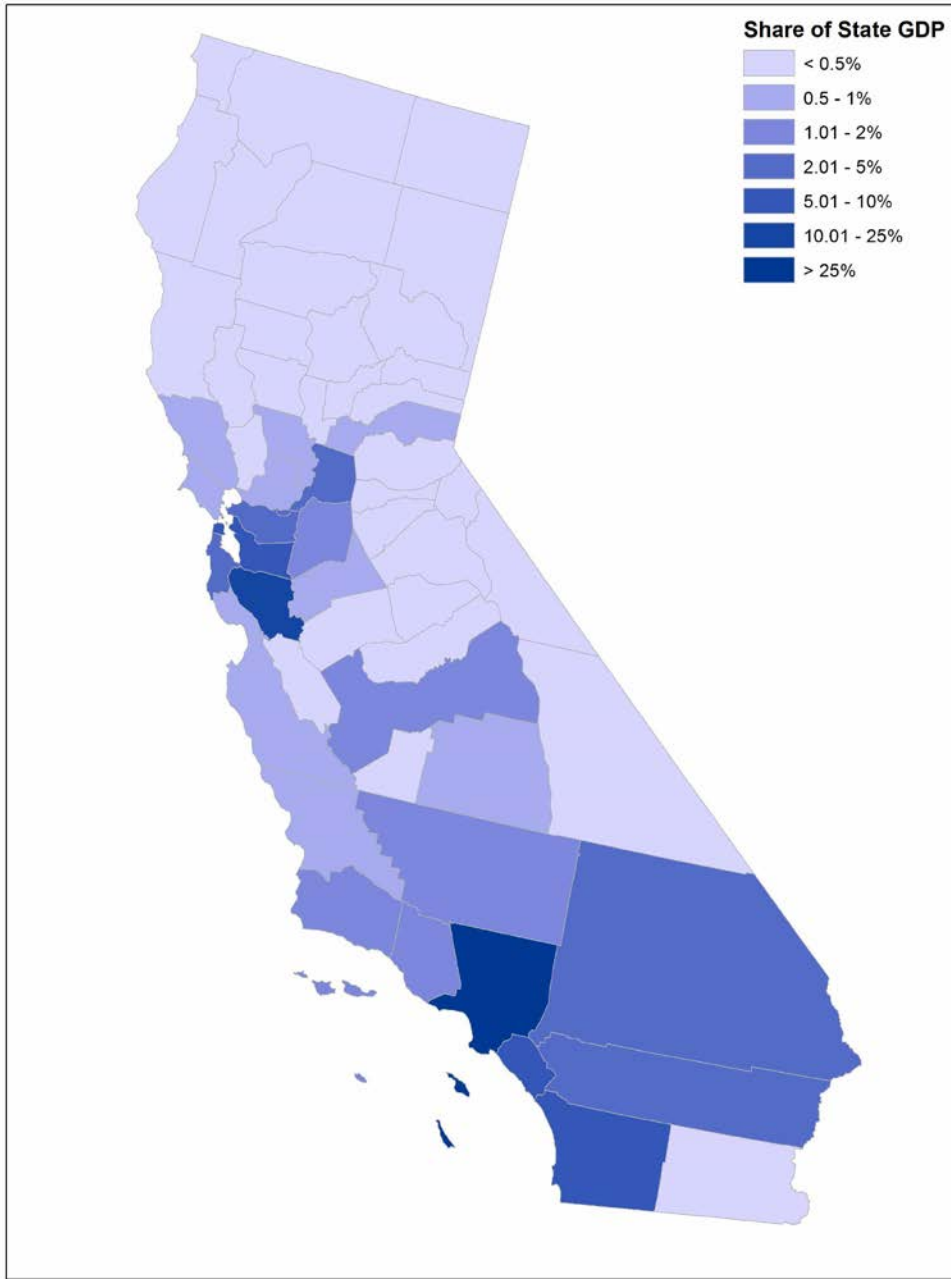
<b>County</b>	<b>GDP (\$millions)</b>	<b>Share of State GDP</b>
Los Angeles	\$569,716	27%
Santa Clara	\$223,541	11%
Orange	\$200,534	9%
San Diego	\$177,772	8%
San Francisco	\$126,317	6%
5-county total	\$1,297,881	61%
Entire state	\$2,125,135	100%

Source: NOEP, 2015

As the distribution of economic activity illustrated in Figure 3 shows, most of the largest contributors to the California GDP are adjacent to the coast.



Figure 3. Geographic Distribution of California GDP by County (2012)



*The five largest California counties—all of which are shore-adjacent—accounted for 61 percent of the state's GDP.*

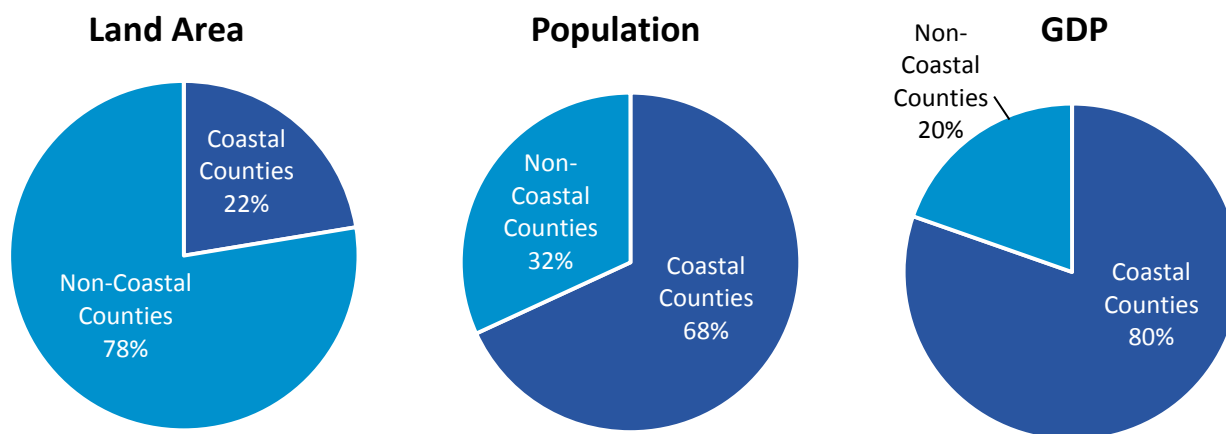
Data Source: NOEP, 2015

### 3. California's Coastal Economy

All five of California's most populous counties border the Pacific Ocean. The economies of these five counties and of California's other 14 shore-adjacent counties are home to two-thirds of California's residents, although they comprise only 22 percent of the state's land mass (see Figure 4 below). The economy of this 19-county region<sup>3</sup>—California's "coastal economy"—generated \$662 billion in wages and \$1.7 trillion in GDP (each figure accounting for 80 percent of the respective state totals). In fact, the coastal counties of California alone generate a GDP that is only exceeded by 11 countries: the United States, China, Japan, Germany, France, Brazil, the United Kingdom, Italy, the Russian Federation, India, and Canada.

*The coastal counties of California alone generate a GDP that is only exceeded by 11 countries.*

Figure 4. Land Area, Population, and GDP of Coastal and Non-Coastal Counties

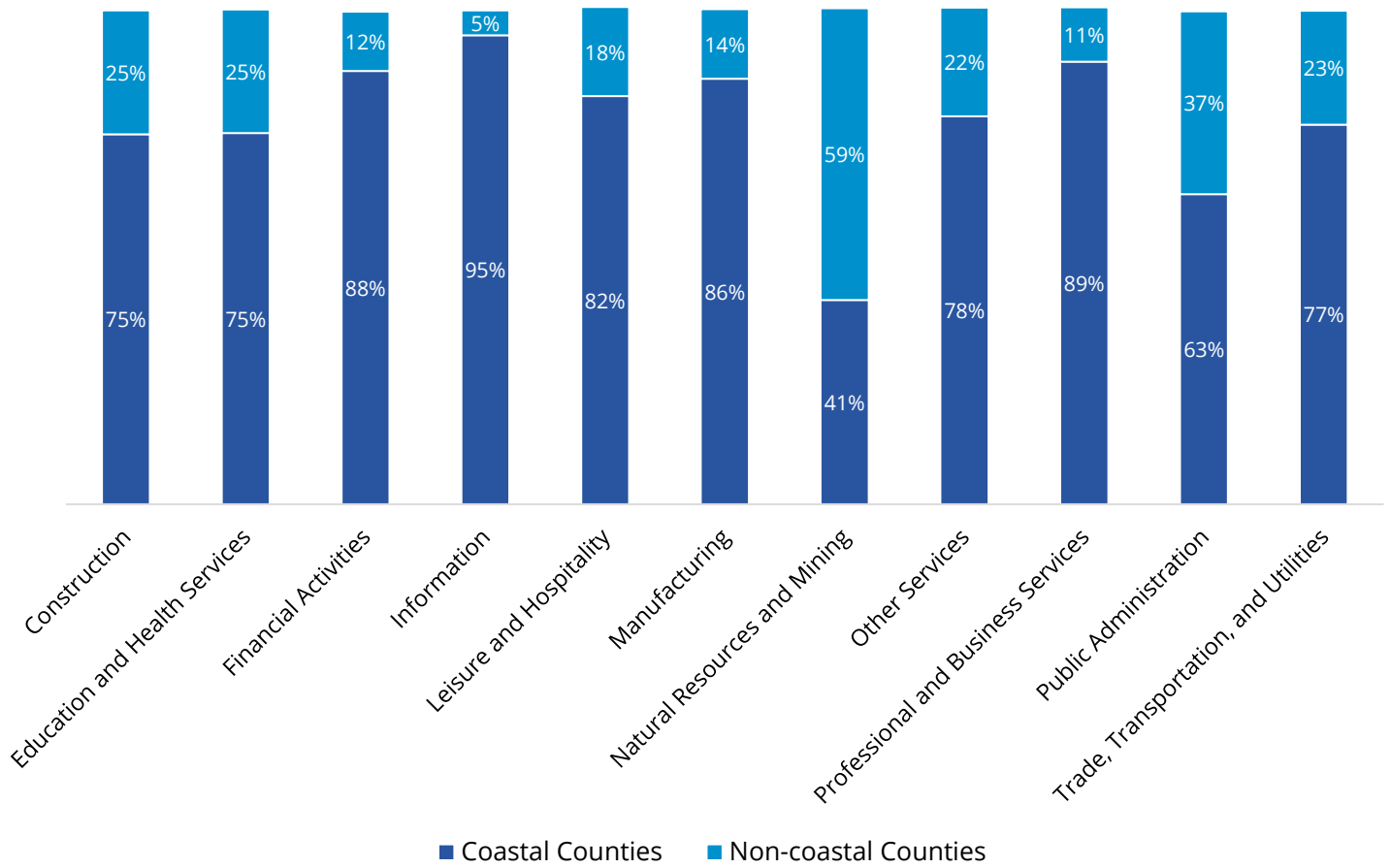


Sources: Land Area (Census, 2010), Population (Census, 2010), GDP (NOEP, 2015)

The concentration of economic activity in California's coastal economy varies greatly from sector to sector (see Figure 5). Only 41 percent (\$27 billion) of the state's natural resources and mining sector's GDP originates in coastal counties. This sector, which includes activities such as agriculture that require more land, is spread across the less populated and physically larger counties in the state's interior. On the other hand, coastal economies contribute 95 percent of the state's GDP in the information sector, which includes motion picture and soundtrack recording industries and broadcasting and telecommunications. The concentration of this activity in near-shore areas is at least partially explained by the extensive movie and television production industry in Los Angeles and Hollywood.

<sup>3</sup> The 19 coastal counties include: Alameda, Contra Costa, Del Norte, Humboldt, Los Angeles, Marin, Mendocino, Monterey, Orange, San Diego, San Francisco, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Solano, Sonoma, and Ventura.

Figure 5. Coastal and Non-Coastal County Contribution to Total California GDP by NAICS Supersector



Source: NOEP, 2015

## 4. California's Ocean Economy

The National Oceanic and Atmospheric Administration (NOAA) produces time-series data for six economic sectors that depend on the resources of the oceans and Great Lakes:

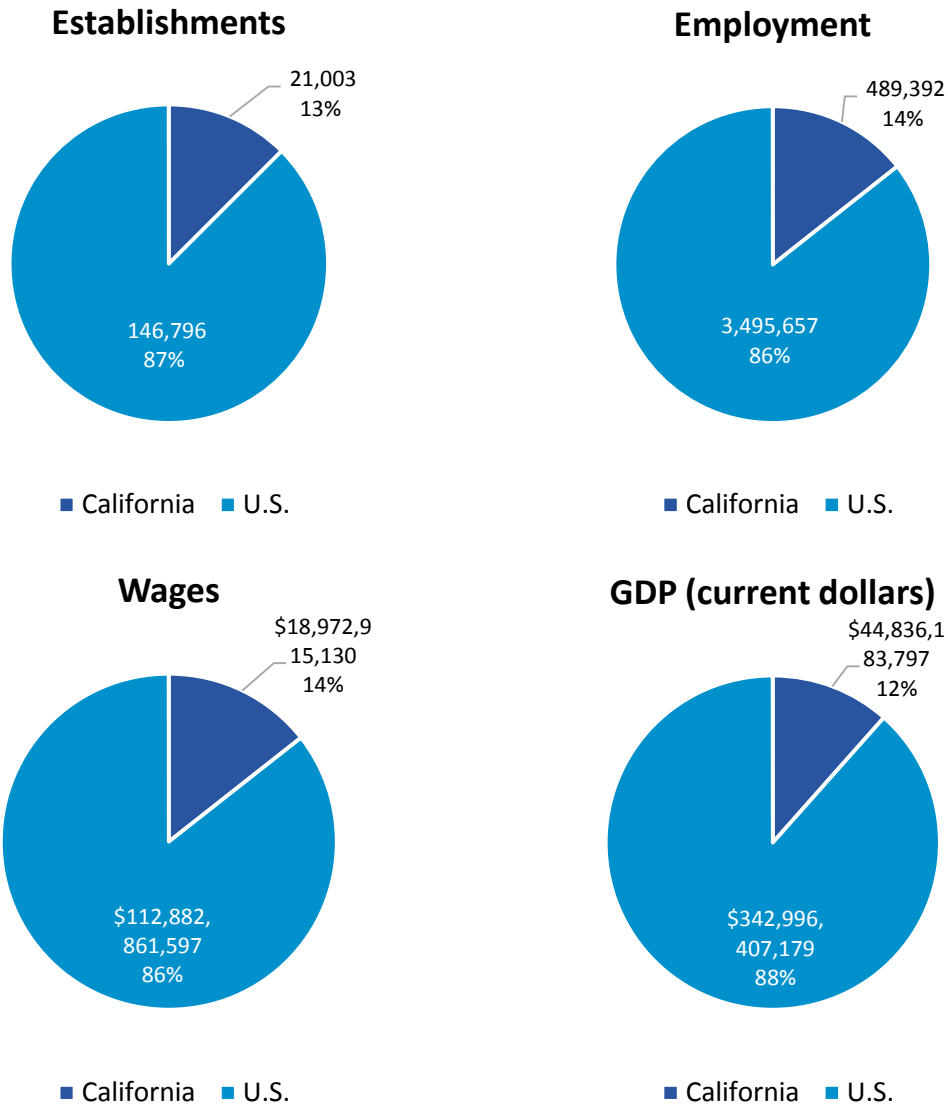
- The **marine construction** sector, which includes heavy construction associated with beach nourishment and harbor dredging.
- The **living resources** sector, which includes commercial fishing, fish hatcheries, aquaculture, seafood processing, and markets.
- The **offshore mineral resources** sector, which includes exploration and production of oil, gas, sand, and gravel from offshore sources.
- The **ship and boat building** sector, which includes the construction and repair of ships and boats.
- The **tourism and recreation** sector, which includes hotels, restaurants, marinas, boat and sporting goods retailers, and a wide range of amusement and recreational services (this is not included in the "ocean economy" of the four inland counties).
- The **marine transportation** sector, which includes the transportation of cargo and passengers, as well as port operations and the manufacture of marine instrumentation.

The NOAA data, called "Economics: National Ocean Watch," or ENOW, show that California accounted for 13 percent of the establishments, 14 percent of the employment and wages, and 12 percent of GDP in the nation's ocean economy in 2012. This activity extends beyond the footprint of shore-adjacent counties to four inland counties.<sup>4</sup> The four charts in Figure 6 illustrate the size of California's ocean economy relative to that of the U.S. ocean economy on the whole with respect to establishments, employment, total wages paid, and GDP.

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<sup>4</sup> Napa, Sacramento, San Joaquin, and Yolo Counties. NOAA's Economics: National Ocean Watch (ENOW) data provides time-series statistics on the ocean and Great Lakes economy, which includes six economic sectors that depend on the oceans and Great Lakes. Data are available for more than 400 coastal counties, 30 coastal states, eight regions, and the nation. Indicators include employment, wages, business establishments, and GDP.

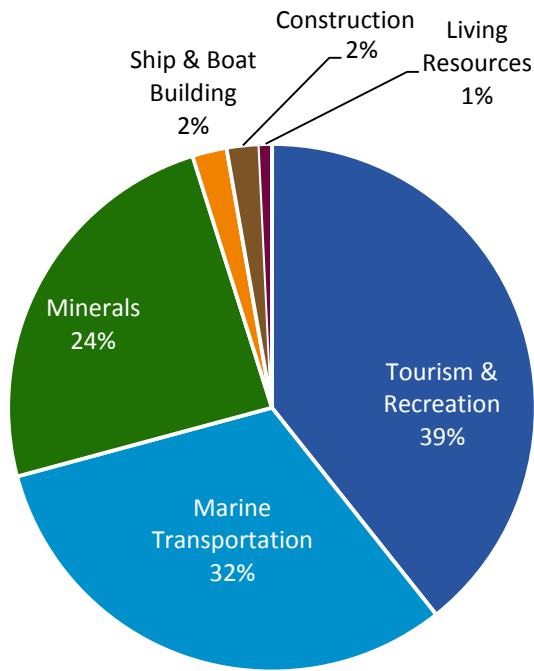
Figure 6. California Ocean Economy and U.S. Ocean Economy, 2012



Source: NOAA ENOW, 2015

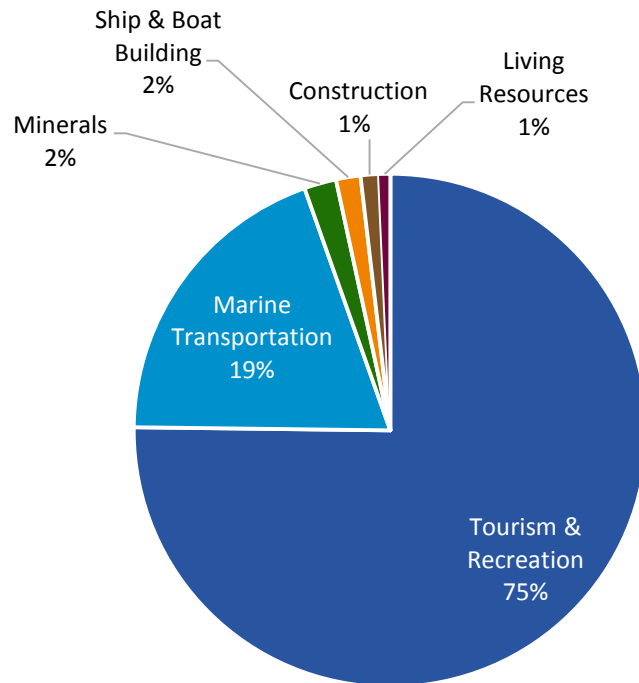
California's ocean economy is dominated by three sectors (in terms of GDP)—tourism and recreation, marine transportation, and offshore mineral extraction (see Figure 7). Together, these three sectors account for 95 percent of California's ocean economy GDP.

**Figure 7. California's Ocean Economy Contribution by Sector Percent of GDP, 2012**



Source: NOAA ENOW, 2015

**Figure 8. California's Ocean Economy Contribution by Sector Percent of Employment, 2012**



Source: NOAA ENOW, 2015

As shown in Figure 8 above, two of the primary drivers of California's ocean economy GDP also account for large shares of the state's ocean economy employment—tourism and recreation (75 percent) and marine transportation (19 percent). The other main contributor to California's ocean economy GDP, offshore mineral extraction, represents only 2 percent of its employment.

The ocean economy's importance varies greatly from county to county. In 2012, the ocean economy (that part having a direct relationship to ocean resources) accounted for more than 5 percent of the total GDP in four California Counties: Del Norte, Contra Costa, Santa Barbara, and Monterey Counties (see Table 2). Conversely, the ocean economy accounted for less than 1 percent of total GDP in Napa, Santa Clara, and Sacramento Counties. In aggregate, the ocean economy accounts for 2.4 percent of the GDP in the 23 California coastal counties with some activity in one or more of the ocean economy sectors.

**Table 2. Ocean Economy GDP as a Percent of Total GDP, 2012**

County	Ocean Economy Employment	Ocean Economy GDP (\$millions)	Total GDP (\$millions)	Contribution of Ocean Economy
Los Angeles	103,517	\$16,412	\$569,872	2.9%
Santa Clara	7,033	\$569	\$223,602	0.3%
Orange	51,788	\$3,773	\$200,589	1.9%
San Diego	95,533	\$6,105	\$177,821	3.4%
San Francisco	56,718	\$3,835	\$126,352	3.0%
Alameda	33,218	\$2,347	\$108,241	2.2%
San Mateo	26,434	\$1,306	\$90,632	1.4%
Sacramento <sup>a</sup>	1,614	\$175	\$82,120	0.2%
Contra Costa	13,001	\$3,280	\$50,220	6.5%
Ventura	15,544	\$1,622	\$39,604	4.1%
Santa Barbara	16,638	\$1,424	\$22,081	6.4%
San Joaquin <sup>a</sup>	5,668	\$468	\$21,704	2.2%
Sonoma	5,330	\$233	\$20,625	1.1%
Monterey	14,418	\$931	\$18,296	5.1%
Marin	9,797	\$508	\$16,131	3.1%
Solano	4,855	\$251	\$15,437	1.6%
Yolo <sup>a</sup>	2,538	\$241	\$11,703	2.1%
San Luis Obispo	7,934	\$374	\$10,804	3.5%
Santa Cruz	8,375	\$318	\$10,728	3.0%
Napa <sup>a</sup>	316	\$30	\$8,111	0.4%
Humboldt	4,152	\$149	\$4,072	3.7%
Mendocino	2,020	\$93	\$2,646	3.5%
Del Norte	946	\$51	\$719	7.1%
Counties with ocean-dependent economic activity	487,387	\$44,495	\$1,832,110	2.4%
California	487,387	\$44,495	\$2,125,717	2.1%

<sup>a</sup> These counties are not shore-adjacent. The tourism and recreation sector is not included in the ocean economy calculations for these four non-coastal counties.

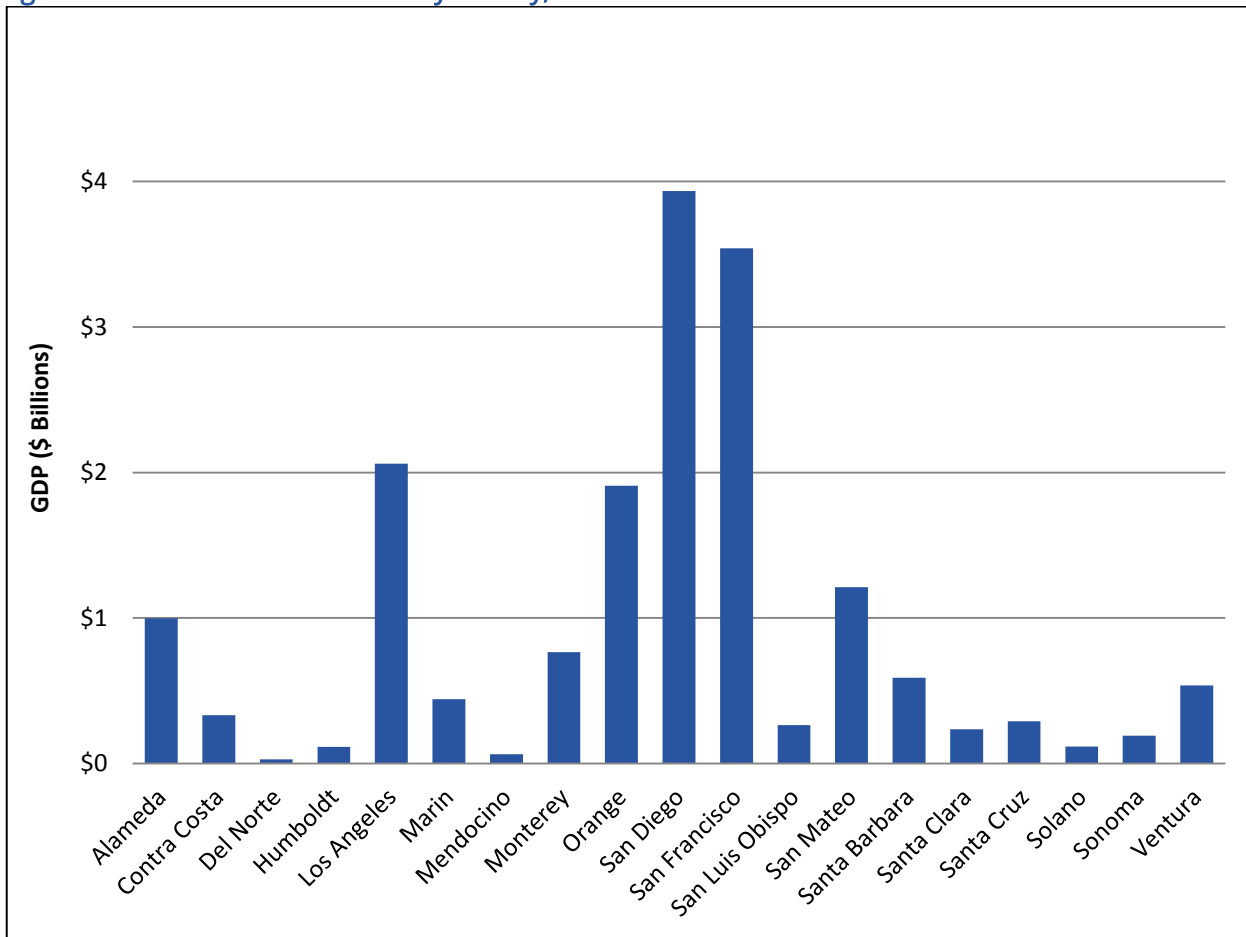
Sources: Ocean Economy GDP (NOAA ENOW, 2015), Total GDP (NOEP, 2015)

## 5. Tourism and Recreation in California

Tourism and recreation—calculated strictly for shore-adjacent zip codes—is the largest of California’s six ocean-dependent sectors, accounting for 39 percent of the ocean economy’s GDP (\$17.6 billion), 75 percent of its employment (368,000), and 46 percent of its wages paid (\$8.7 billion) in 2012. Since many of the jobs in this sector are part-time jobs in the food, beverage, and hotel industries that support coastal tourism, wages and GDP tend to be low compared to the number of employees.

In 2012, ocean-dependent tourism and recreation generated more than \$1 billion of GDP in five California counties: San Mateo, San Francisco, San Diego, Orange, and Los Angeles (see Figure 9 below). Tourism and recreation was the largest ocean sector in four of these five counties; in Los Angeles County, however, tourism and recreation was dwarfed by the marine transportation sector, which includes all Los Angeles and Long Beach port activity (see Section 6: Marine Transportation in California).

Figure 9. Tourism and Recreation by County, 2012



Source: NOAA ENOW, 2015

California’s tourism and recreation sector is a substantial driver of the state’s ocean economy,<sup>5</sup> and its economic output plays a prominent role on a national scale as well. Table 3 compares the tourism and recreation sectors of California’s 19 shore-adjacent counties with all other U.S. coastal counties combined. In 2012, California’s ocean-based tourism and recreation sector comprised more than 18,000 business

<sup>5</sup> As mentioned above, unlike the rest of California’s ocean economy, which includes four non-shore-adjacent counties, the tourism and recreation sector is confined to California’s 19 shore-adjacent counties.



establishments (15 percent of U.S. total), employing almost 368,000 persons (18 percent of the U.S. total) and generating \$8.7 billion in wages (19 percent of the U.S. total) and more than \$17.6 billion in GDP (18 percent of the U.S. total).

**Table 3. Tourism and Recreation in California's 19 Coastal Counties and All U.S. Coastal Counties, 2012**

Year	Establishments		Employment		Wages (\$million current dollars)		GDP (\$million current dollars)	
	CA	U.S.	CA	U.S.	CA	U.S.	CA	U.S.
2005	17,241	106,743	334,868	1,856,221	\$6,695	\$34,681	\$14,497	\$77,109
2006	17,370	108,681	345,993	1,894,410	\$7,137	\$36,863	\$15,309	\$82,418
2007	17,486	110,602	357,615	1,952,891	\$7,776	\$39,659	\$16,054	\$86,608
2008	17,329	113,173	362,662	1,962,292	\$8,146	\$40,474	\$16,462	\$86,915
2009	17,349	114,475	344,962	1,903,072	\$7,637	\$38,970	\$15,343	\$83,019
2010	17,659	117,445	345,402	1,928,141	\$7,770	\$40,434	\$15,710	\$86,648
2011	17,827	120,678	351,997	1,993,210	\$8,137	\$42,831	\$16,552	\$90,766
2012	18,114	121,279	367,952	2,077,190	\$8,702	\$45,735	\$17,625	\$97,149

Source: NOAA ENOW, 2015

### Money Spent on the California Coast Helps Support the Inland Economy

The output of California's tourism industry would not be possible without inputs from a variety of sectors throughout the U.S. economy. Sellers of recreational equipment rely on a geographically diverse set of manufacturers and component suppliers; restaurants must maintain national supply chains for ingredients and foodstuffs; and hotels require a wide range of goods to furnish and maintain their rooms, lobbies, and eating areas. Hotels provide a particularly striking example given their need for consumables (catering services, housekeeping products, etc.), semi-durables (linen, lightbulbs, upholstery, etc.), and more permanent furnishings (beds, exercise equipment, light fixtures, etc.); Table 4 provides many examples of goods needed to supply a hotel.

**Table 4. Hotel Inputs**

Accessories	Laundry equipment
Accessories (pianos)	Light bulbs
Artwork	Linen
Bed sets and bed frames	Meeting and banquet furniture
Casegoods	Mirror frames and towel stations
Drapery and bedding fabrics	Mirrors
Electronic/RFID door locks	Office furniture
Electronics	Plants and planters
Exercise equipment	Plumbing, fixtures, and equipment
Fabric treatment	Point of sale equipment
Floorcovering	Pool and patio furniture
Flooring	Printed materials
Food, beverage, and equipment	Promotional items
Free standing lighting	Tables and components
Front desk safes	Telephones
Guest room door locks	Uniforms

Hardwired lighting	Upholstered furnishings
Housekeeping products	Upholstery fabrics
In-room safes	Wallcovering
Interior signage	Water coolers

California hotels typically procure these goods through one- to five-year contracts (depending on the commodity) with manufacturers and supply companies spread throughout the country. Niche suppliers such as Minibar Systems of Rockville, Maryland (Minibar Systems, 2015), or electronic lock and in-room safe manufacturer ASSA ABLOY of Richardson, Texas (Vingcard Elsafe, 2015), sometimes work directly with the hotels; however, more frequently, national hotel chains rely on procurement companies such as Sysco Guest Supply, American Hotel Register Company, and Amenity Services for their day-to-day needs. With distribution centers in Illinois, Texas, New Jersey, Washington, and Florida, these companies combine their access to regional markets with national supply chains to ensure that hotels throughout the country receive competitively priced goods.

Across the state of California, the relationship between hotels and these suppliers and manufacturers is substantial because of how large the hotel industry is in California. Although further research is required to fully quantify this relationship, as shown in Table 5 below, California’s hotel industry (measured as NAICS 72111: “Hotels [except casino hotels] and motels”) represents the largest market for national hotel-supply manufacturers and distributors.

**Table 5. Relative Size of California’s Statewide Hotel Industry (NAICS 72111), 2012**

Stage	Establishments	Share of U.S. Hotel Establishments
California	5,059	9.8%
Texas	4,565	8.8%
Florida	3,772	7.3%
New York	2,105	4.1%
Georgia	1,927	3.7%

State	Employment	Share of U.S. Hotel Employment
California	191,418	13.1%
Florida	156,762	10.7%
Texas	102,758	7.0%
New York	81,913	5.6%
Pennsylvania	48,121	3.3%

State	Wages (\$million dollars)	Share of U.S. Hotel Wages
California	5,786	15.1%
Florida	4,320	11.3%
New York	3,543	9.3%
Texas	2,582	6.7%
Hawaii	1,549	4.1%

Source: BLS, 2015a

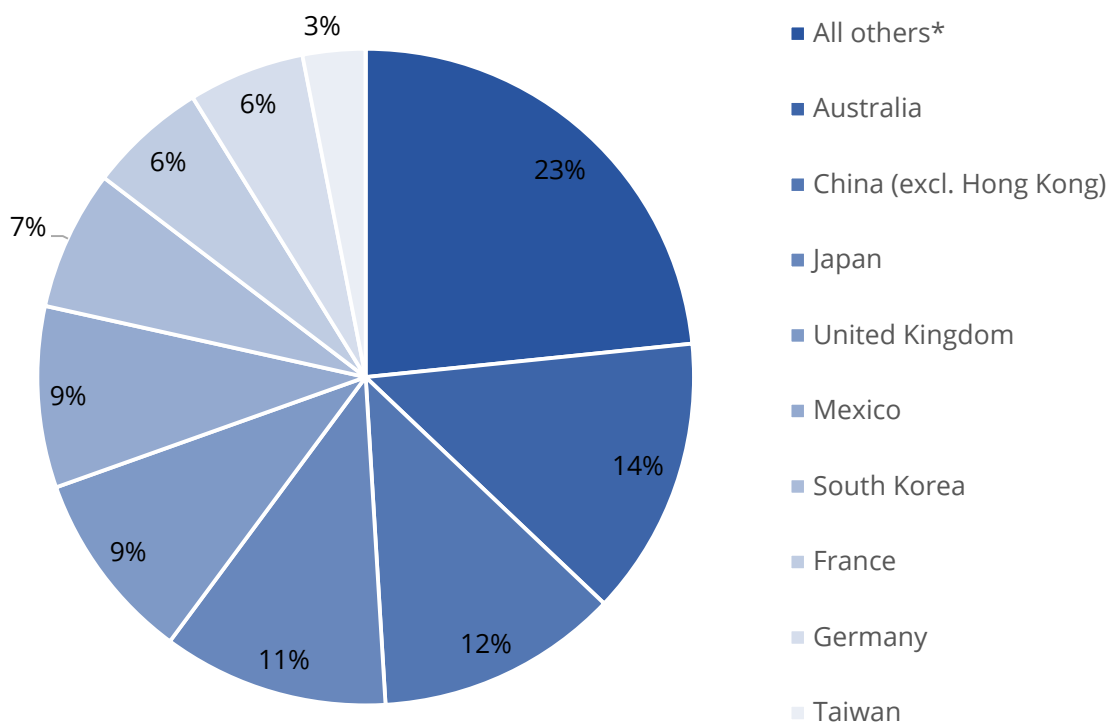
## Supporting the Economy by Attracting Foreign Visitors

The California coast is an attractive destination for foreigners, thus helping to bring money into the U.S. economy. In effect, the coast is helping U.S. exports by “exporting” tourism and recreation. Traditional exports (i.e., commodities) provide an immediate boost to U.S. GDP because foreign dollars flow into the U.S. economy to purchase domestic goods. Similarly, tourism and recreation expenditures provide an “export” to the U.S. economy through the foreign dollars tourists inject into the U.S. economy. Overall, in 2012, 29.8 million people flew into the United States from overseas and 6.2 million (22 percent) indicated California was a destination (Visit California, 2014). The distribution of visitors to California presented in Figure 10, on the next page, offers insight into the broad range of California’s international appeal.

Two of the countries in Figure 10—Australia and Taiwan—are unique in that they not only represent substantial shares of all international visitors to California, but their citizens choose to visit California over many other destinations in the United States. Over half (53 percent) of all Australians traveling to the United States in 2012 chose to visit California; the same is true for 46 percent of visitors from Taiwan.<sup>6</sup> Other countries—such as New Zealand (65 percent of U.S.-bound travelers choose California), Singapore (42 percent), and Hong Kong (40 percent)—do not account for large shares of California’s international visitations by volume, but illustrate California’s substantial destination value for global tourists (Dean Runyan, 2015). Moreover, the number of travelers from one of California’s largest foreign tourism markets—China, which accounts for 12 percent of all California-bound international travel—is increasing rapidly. From 2011 to 2012 alone, the number of Chinese visitors to California increased by almost 43 percent from 470,000 to 671,000 visitors (Visit California, 2014).

To understand California’s destination value to foreign visitors, it helps to supplement the travel statistics above with data on tourist expenditures. For example, in 2012, total trip expenditures averaged \$4,018 for international visitors, which can be broken down into travel expenses plus an average stay of 11.3 nights in California (averaging about \$97 per person per day) (Visit California, 2014). Expenditure data combined with the total number of personal trips and the average stay of each visit allows us to estimate each country’s contribution to California’s tourism economy and to the U.S economy as a whole.

**Figure 10. Origins of International Flights Destined for California, 2012**



\*Origins are in descending order of magnitude.

Source: Dean Runyan, 2015

<sup>6</sup> These data do not include the percent of travelers heading to coastal and non-coastal counties.

Table 6 shows tourism expenditures from Australia (\$582 million), Japan (\$472 million), and the United Kingdom (\$639 million) to give a sense of the substantial revenue that California helps draw into the U.S. economy.<sup>7</sup>

**Table 6. Estimated Contribution to California's Tourism Economy, 2012 (selected countries)**

	<b>Australia</b>	<b>Japan</b>	<b>United Kingdom</b>
Average number of nights in CA	7.9	8.2	10.6
Daily expenditure <sup>a</sup>	\$141	\$103	\$95
Annual visitors to CA	522,000	558,000	635,000
Value of each visitor to CA	\$1,114	\$845	\$1,007
Gross annual expenditure in CA	\$581,508,000	\$471,510,000	\$639,445,000

<sup>a</sup> Lower than expected daily expenditures might reflect the fact that more than one person tends to stay in each hotel room. Travel parties average 1.8 people for Australian visitors, 1.7 for Japanese visitors, and 1.6 for British visitors.

Source: Visit California, 2014

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<sup>7</sup> The Visit California report warns of small sample sizes in the survey that produced the daily expenditure estimates. For that reason, only snapshots for countries with large respondent pools have been provided.

## Providing Value to U.S. Residents as a Travel Destination

Complementing the contribution of international visitors to California's tourism and recreation sector is the demand that the sector generates throughout California and the rest of the United States. While most flights in California are intra-state (about 6.3 million arrivals in 2013), Table 7 demonstrates the substantial inflow of visitors to California from the rest of the United States. These data represent visitors coming for both leisure trips and business purposes.

**Table 7. Arrivals to California by State (top 25) in 2013**

Origin	Visitor Arrivals 2013
New Jersey/New York	2,314,686
Texas	2,264,918
Washington	1,875,038
Illinois	1,342,047
Colorado	1,285,038
Arizona	1,215,093
Oregon	1,091,076
DC/Maryland	1,062,196
Florida	959,841
MA/RI/NH	918,398
Pennsylvania	750,891
Georgia	642,142
Nevada	592,435
Minnesota	566,715
Missouri	522,624
Michigan	509,707
Utah	498,729
North Carolina	478,680
Ohio	476,564
Tennessee	296,549
Hawaii	248,244
Wisconsin	217,471
Indiana	193,918
New Mexico	183,451
Virginia	162,752

Source: Dean Runyan, 2012

California's beaches and ocean-based recreational activities are a major reason people visit coastal California. Each year, millions of visitors come for surfing, offshore fishing, kayaking, or just to spend time along the 340 miles of Pacific Ocean and major bay frontage and estuaries maintained by the California State Park system (California State Parks, 2014). Visitors have access to some of the world's largest surfing events, which draw competitors and viewers from all over the world. The U.S. Open of Surfing, for example, has become a week-long festival, with attendance numbers around 500,000. California's National Parks are another center of recreational activity, hosting around 35.6 million visitors in 2013 and accounting for over \$1.5 billion in expenditures (U.S. Department of the Interior, 2014). Another key visitor activity is sport-fishing, which drew 86,000 non-resident anglers to California and 316,000 non-coastal Californians to the shoreline in 2012 (NOAA NMFS, 2012). Table 8, on the next page, provides an overview of the economic impacts associated with recreational fishing in California.

**Table 8. Economic Impacts of Recreational Fishing Expenditures, 2012 (\$thousands)**

	Jobs	Sales	Income	Value Added
Trip impacts by fishing mode				
For-hire	1,573	\$224,565	\$95,922	\$145,066
Private boat	709	\$124,506	\$38,439	\$65,210
Shore	1,909	\$296,629	\$92,745	\$156,363
Total durable equipment impacts	7,943	\$1,055,518	\$402,102	\$640,673
Total trip and durable equipment economic impacts	12,134	\$1,701,218	\$629,208	\$1,007,312

Source: NOAA NMFS, 2012

Although the economic impacts of expenditure-intensive activities such as sport-fishing can be substantial, many of the recreational activities described above attract visitors to coastal California but generate little in the way of jobs, wages, and GDP. However, the visitors stay in hotels and eat in restaurants that primarily serve recreational users, which accounts for the majority of the tourism and recreation sector's market-based value. In California as a whole, over 90 percent of the jobs, wages, and GDP for ocean-based tourism and recreation are associated with the hotels and restaurants in near-shore areas,<sup>8</sup> as seen in Table 9 below.

**Table 9. Comparison of California Hotels and Restaurants to All Other Tourism and Recreation, 2012**

	Establishments		Employment		Wages (\$million current dollars)		GDP (\$million current dollars)	
Hotels and restaurants	16,672	92%	348,371	95%	8,014	92%	16,270	92%
All other tourism and recreation	1,442	8%	19,581	5%	688	8%	1,355	8%

Source: NOAA ENOW, 2015

<sup>8</sup> Business establishments in the tourism and recreation sector are not counted as part of the ocean economy unless they are located in shore-adjacent zip code areas.

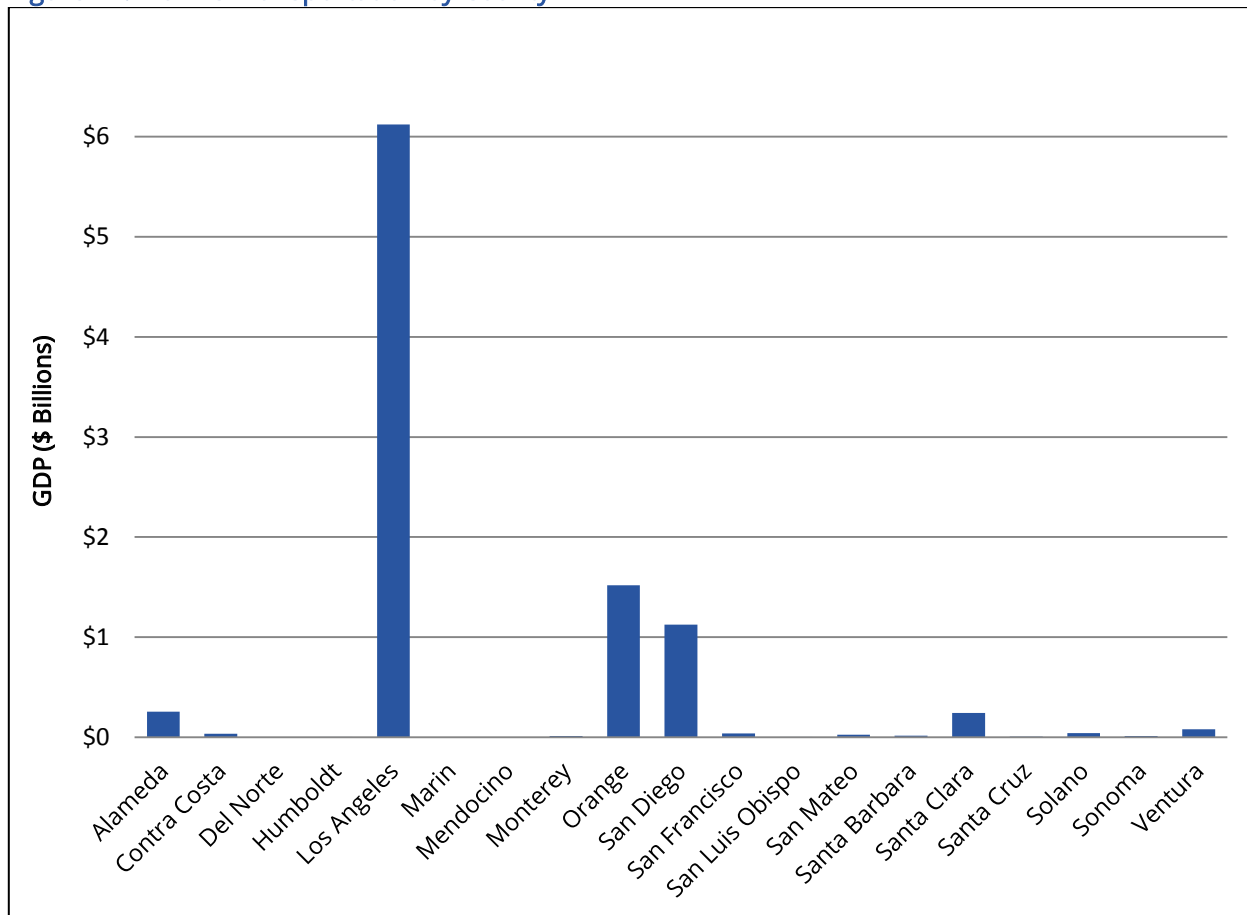
## 6. Marine Transportation in California

Marine transportation is the second largest of California’s six ocean-dependent economic sectors, accounting for 31 percent of the ocean-dependent GDP in 2012 (\$14.1 billion). The combined GDP of the tourism and recreation sector and marine transportation sector (\$31.7 billion combined) (NOAA ENOW, 2015) exceeds the GDP produced by farms (NAICS 111 and 112) in the entire state of California in 2012 (\$25.6 billion) (BEA, 2015).

*California ports do not only provide a trade channel between the West Coast and the rest of the world; rather, they are a gateway for the entire United States.*

Figure 11 (below) shows a spatial breakdown of real GDP contributed by the marine transportation sector. The marine transportation sector’s GDP contribution was over \$250 million in Alameda County, over \$1 billion in Orange and San Diego Counties, and over \$6 billion in Los Angeles County alone (NOAA ENOW, 2015).

Figure 11. Marine Transportation by County



Source: NOAA ENOW, 2015

Table 10 below compares California’s marine transportation sector to that same sector for the entire United States. In 2012, California represented approximately a quarter of the U.S. marine transportation sector in terms of wages (27 percent) and GDP (25 percent), and it also accounted for substantial shares of the U.S. total for establishments (17 percent) and employment (22 percent).

**Table 10. Marine Transportation in California and the United States**

Year	Establishments		Employment		Wages (\$millions)		GDP (\$millions)	
	CA	U.S.	CA	U.S.	CA	U.S.	CA	U.S.
2005	1,715	9,316	114,423	438,006	\$8,184	\$25,223	\$15,027	\$47,146
2006	1,786	9,561	114,557	454,149	\$8,663	\$26,900	\$15,136	\$51,229
2007	1,768	9,615	115,455	460,522	\$8,713	\$28,491	\$15,637	\$53,548
2008	1,712	9,787	113,119	460,061	\$8,504	\$28,833	\$16,054	\$58,010
2009	1,652	9,645	106,553	435,173	\$8,189	\$27,888	\$15,767	\$57,396
2010	1,644	9,772	102,201	423,986	\$8,253	\$28,042	\$15,171	\$57,502
2011	1,596	9,562	95,153	419,242	\$7,683	\$28,369	\$13,904	\$55,624
2012	1,611	9,706	94,871	421,743	\$7,815	\$29,314	\$14,123	\$57,422

Source: NOAA ENOW, 2015

## How California’s Marine Transportation Economy Supports the Inland Economy

California’s marine transportation economy is a key contributor to the national economy, providing points of entry and exit for the inland U.S. economy to receive foreign goods and ship goods internationally. Exports help provide demand for U.S. goods while imports often take the form of intermediate goods that are needed to support manufacturing jobs (e.g., car parts to produce cars or basic chemicals to synthesize plastics and fertilizers). Imports of finished goods support retail jobs.

The Freight Analysis Framework (FAF), published by the U.S. Department of Transportation, shows the value of imports and exports by commodity type shipped through each of the California ports, including the foreign location<sup>9</sup> the good is going to or coming from and the domestic location<sup>10</sup> the good is coming from or shipping to.

Table 11 summarizes the value of foreign goods moving through California ports. In 2012, approximately \$331 billion of foreign goods were imported to the United States through California’s ports, and \$99 billion of goods were exported through California ports to foreign countries. This accounts for 15 percent of all imported foreign goods (\$2.28 trillion, total U.S. imports; BEA, 2012) and 6 percent of all exported goods (\$1.55 trillion, total U.S. exports; BEA, 2012). Los Angeles was the largest port for foreign imports and exports, accounting for 85 percent of foreign imports and 81 percent of foreign exports through California ports. In addition to supporting the inland economy by providing ports for foreign imports and exports, California ports also serve to help move domestic goods to and from other states.

**Table 11. Foreign Imports and Exports through California by Port, 2012 (\$millions)**

Port	Foreign Imports	Foreign Exports
Los Angeles CSA	\$282,101	\$80,503
Sacramento CSA (CA-NV, CA Part)	\$1,559	\$195
San Diego MSA	\$8,379	\$44
San Francisco CSA	\$39,395	\$18,381
All Other CA Ports	\$6	\$44
CA Ports Total	\$331,440	\$99,166

CSA= Combined Statistical Area; MSA= Metropolitan Statistical Area

<sup>9</sup> In the FAF data, foreign origins and destinations are identified by multinational regions.

<sup>10</sup> In the FAF data, domestic (U.S.) origins and destinations are identified by states and by zones that correspond to either Metropolitan Statistical Areas (MSA) or Combined Statistical Areas (grouping of MSAs).



Source: FAF, 2015

Table 12 shows the value of state foreign imports and exports through California ports in 2012, sorted from highest to lowest. Excluding California, the most important destinations for imports through California ports (by value of cargo) are Texas (18 percent of cargo not destined for California), Illinois (11 percent), Tennessee (9 percent), New York (8 percent), and New Jersey (7 percent). Excluding California, the most important origins for exports through California ports are Illinois (26 percent of cargo not originating in California), Texas (25 percent), Ohio (7 percent), Tennessee (7 percent), and Michigan (4 percent). California ports do not only provide a trade channel between the West Coast and the rest of the world; rather, they are a gateway for the entire United States.

**Table 12. Imports and Exports by State through California Ports, 2012 (\$millions)**

State	Value of Foreign Imports	State	Value of Foreign Exports
California	\$143,156	California	\$45,209
Texas	\$34,308	Illinois	\$13,819
Illinois	\$21,107	Texas	\$13,685
Tennessee	\$17,830	Ohio	\$3,684
New York	\$15,698	Tennessee	\$3,601
New Jersey	\$13,432	Michigan	\$2,005
Ohio	\$9,624	Missouri	\$1,517
Georgia	\$8,646	Kansas	\$1,490
Missouri	\$5,644	New York	\$1,092
Michigan	\$5,466	Louisiana	\$980
North Carolina	\$4,422	Colorado	\$937
Indiana	\$3,924	Utah	\$891
Kentucky	\$3,920	New Jersey	\$881
Florida	\$3,794	Kentucky	\$879
Arkansas	\$3,431	Indiana	\$822
Pennsylvania	\$3,225	Iowa	\$805
Alabama	\$2,957	Nebraska	\$736
Wisconsin	\$2,712	Minnesota	\$664
Arizona	\$2,324	Wisconsin	\$533
Washington	\$2,305	North Carolina	\$481
Colorado	\$2,055	Georgia	\$478
Oregon	\$2,023	Virginia	\$448
Utah	\$1,923	Pennsylvania	\$403
Iowa	\$1,555	Alabama	\$345
Mississippi	\$1,526	Oklahoma	\$320
Maryland	\$1,503	Mississippi	\$312
Massachusetts	\$1,476	Arkansas	\$292
Kansas	\$1,420	Florida	\$237
Minnesota	\$1,371	Washington	\$235
South Carolina	\$1,276	West Virginia	\$208
Connecticut	\$1,208	Arizona	\$193
Nevada	\$1,185	Maryland	\$185
Oklahoma	\$1,035	Massachusetts	\$175
Virginia	\$1,029	Delaware	\$123
Louisiana	\$1,003	South Carolina	\$95
Rhode Island	\$541	Connecticut	\$76

State	Value of Foreign Imports	State	Value of Foreign Exports
Nebraska	\$234	Oregon	\$72
West Virginia	\$190	Idaho	\$68
Idaho	\$182	Nevada	\$45
New Hampshire	\$169	Maine	\$41
New Mexico	\$128	New Mexico	\$40
Hawaii	\$125	South Dakota	\$27
Maine	\$69	Hawaii	\$11
Delaware	\$63	Washington, DC	\$9
Washington, DC	\$56	New Hampshire	\$4
Vermont	\$49	Montana	\$4
South Dakota	\$39	Rhode Island	\$3
Wyoming	\$37	Wyoming	\$3
North Dakota	\$30	Vermont	\$3
Montana	\$11	North Dakota	\$1
Alaska	\$3	Alaska	\$1
Total	\$331,440	Total	\$99,166

Source: FAF, 2015

FAF accounts for shipments through California's ports by aggregating data for individual ports into port districts.<sup>11</sup> Four districts—Los Angeles, Sacramento, San Diego, and San Francisco—account for over 99 percent of both the foreign imports and exports that go through all California ports. Table 13 shows imports to the destinations with the five highest import values (excluding California) through each port.

**Table 13. Top Five States Receiving Foreign Imports through California by Port, 2012**

Los Angeles CSA	
State	Value (\$millions)
Texas	\$33,324
Illinois	\$20,062
Tennessee	\$17,255
New York	\$13,514
New Jersey	\$12,898
Rest of U.S. excluding California	\$77,672
California	\$107,377
Total	\$282,101

Sacramento CSA (CA-NV, CA Part)	
State	Value (\$millions)
Georgia	\$263
Florida	\$216
Oregon	\$197
Missouri	\$140
New York	\$76
Rest of U.S. excluding California	\$291
California	\$377
Total	\$1,559

San Diego MSA	
State	Value (\$millions)
Michigan	\$117
Florida	\$87
New Jersey	\$49
Oregon	\$34
Texas	\$20

San Francisco CSA	
State	Value (\$millions)
New York	\$2,091
Michigan	\$1,076
Illinois	\$987
Texas	\$947
Colorado	\$834

<sup>11</sup> Major ports in each district include the Port of Long Beach and Port of Los Angeles (Los Angeles CSA), Port of West Sacramento (Sacramento CSA), and Port of San Diego (San Diego MSA). Ports located in the San Francisco CSA are described in detail below.

Rest of U.S. excluding California	\$47
California	\$8,025
Total	\$8,379

Rest of U.S. excluding California	\$6,083
California	\$27,376
Total	\$39,395

Rest of California	
State	Value (\$millions)
New York	\$3.8
Washington	\$0.7
Illinois	\$0.3
Rest of U.S. excluding California	\$0
California	\$1
Total	\$6

Source: FAF, 2015

While most of the statistical areas in California include only one or two major port facilities, the San Francisco Combined Statistical Area (CSA) includes five distinct ports around the San Francisco Bay. These ports are Oakland (handling 47 percent of the Bay Area’s international marine cargo), Richmond (36 percent), Stockton (9 percent), San Francisco (2 percent), and Redwood City (2 percent). International shipping in the San Francisco Bay is dominated by two ports: Richmond, handling nearly all international shipments of petroleum and petroleum products, and Oakland, handling 70 percent of the remaining cargo. However, each of the five ports handles a different mix of cargo, thus serving producers and consumers in different parts of the country.

**Table 14. Foreign Trade in San Francisco Bay, 2012 (annual tonnage)**

Port	Total	In	Out
Oakland	16,395,958	6,275,286	10,120,672
Redwood City	804,747	504,589	300,158
Richmond	12,652,871	9,805,091	2,847,780
San Francisco	561,936	541,521	20,415
Stockton	3,305,484	1,666,869	1,638,615
Other	1,399,164	1,399,164	0
Total	35,120,160	20,192,520	14,927,640

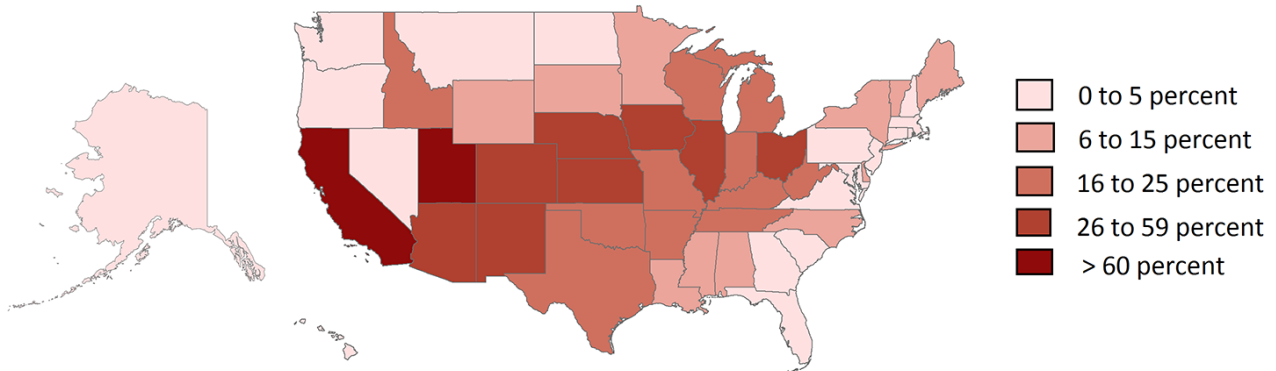
Source: NOAA Office for Coastal Management, 2015b

Bay Area ports also provide benefits much closer to home, supplying inland parts of California with a wide range of imported products to use in agriculture, manufacturing, or other production processes, or to be sold by retailers. In 2012, the top products imported through Bay Area ports to inland California by value included machinery, electronics, plastics, rubber, textiles, leather, base metal articles, chemicals, and a wide range of other goods that support production processes and employment in the state’s interior. Similarly, Bay Area ports provide producers in the state interior with access to international markets for their products. In 2012, the top products exported through Bay Area ports from inland California by value included meat and other agricultural products, motor vehicles, furniture, milled grain products, and pharmaceuticals.

Figure 12 and Figure 13 below use color gradients to illustrate the degree to which each state relies on California ports for the export and import of their goods. For both the inflow and outflow of commodities, the greatest dependence on California ports comes from the West and Southwest United States. Both figures clearly demonstrate, however, that the reliance on California’s marine economy extends far beyond these

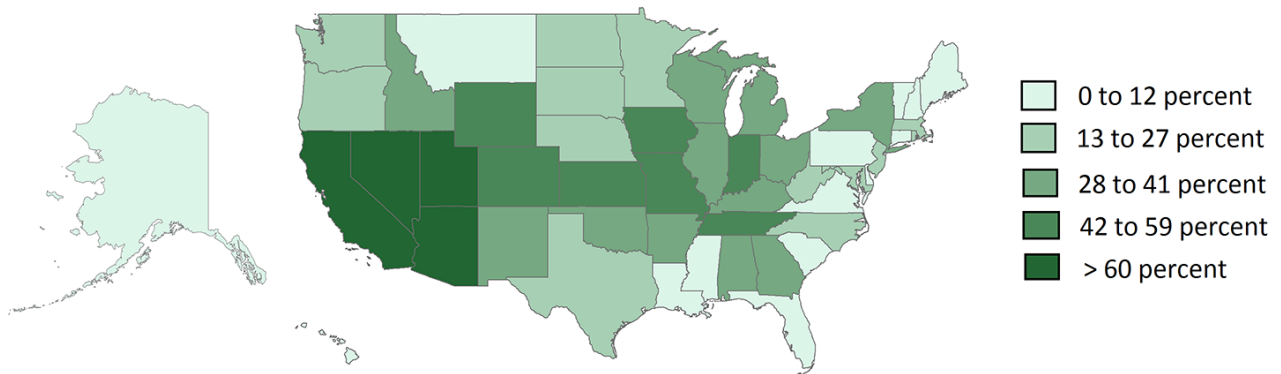
regions, with shipments moving to or from states across the country such as North Carolina, Maine, and New York.

**Figure 12. Dependence on California Ports by State (percent of exports going through California ports)**



Source: FAF, 2015

**Figure 13. Dependence on California Ports by State (percent of imports coming through California ports)**



Source: FAF, 2015

## Commodity-Level Findings

The six biggest commodity types for imports and exports through California ports as a whole are presented in Table 15.

**Table 15. Top Foreign Imports and Exports through California Ports by Commodity Type (\$billions)**

Top imports	Top exports
1. Electronics (\$60.4)	1. Waste/scrap (\$15.8)
2. Motorized vehicles (\$50.8)	2. Machinery (\$11.6)
3. Textiles/leather (\$49)	3. Other agricultural products (\$9.2)
4. Machinery (\$33.2)	4. Plastics/rubber
5. Miscellaneous manufactured goods (\$21.2)	5. Basic chemicals (\$7.4)
6. Crude petroleum (\$17.7)	6. Motorized vehicles (\$5.5)

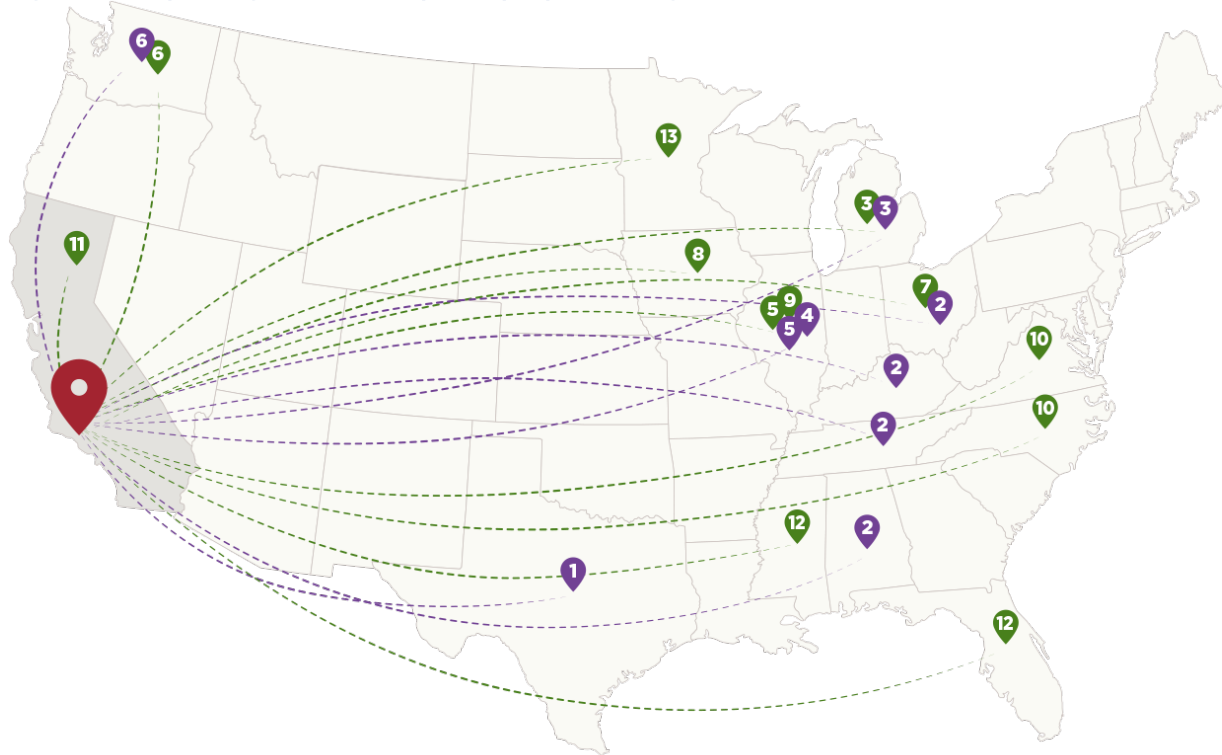
Source: FAF, 2015

## Examples of How California Ports Support Key Industries Throughout the United States

Some interesting findings became apparent when looking at the commodities going to and coming from each state. Several states exported or imported a substantial portion of particular commodities, which are

highlighted in Figure 14 below. The narratives that follow correspond with the pins on the map. This helps identify some of the key economies that California ports help support in the inland United States.

Figure 14. Exports (green) and Imports (purple) through California Ports<sup>12</sup>



**IMPORTS**

- 1 – Precision instrument and electronics manufacturing**  
TX: \$12.1 billion
- 2 – Motorized vehicles (components)**  
TN: \$3 billion  
OH: \$2.2 billion  
KY: \$1.7 billion  
AL: \$1.7 billion

- 3 – Motorized vehicles (components)**  
MI: \$2.3 billion
- 4 – Basic chemicals**  
IL: \$318 million
- 5 – Machinery**  
IL: \$4.1 billion
- 6 – Furniture**  
WA: \$185 million



**EXPORTS**

- 3 – Motorized vehicles**  
MI: \$563 million
- 5 – Machinery**  
IL: \$2.6 billion
- 6 – Furniture**  
WA: \$7.2 million
- 7 – Plastic and rubber**  
OH: \$490 million
- 8 – Meat**  
IA: \$259 million
- 9 – Cereal grains**  
IL: \$1.81 billion

- 10 – Tobacco**  
NC: \$214 million  
VA: \$312 million
- 11 – Crops**  
CA: \$4.88 billion
- 12 – Metallic ore**  
FL: \$115 million  
MS: \$29 million
- 13 – Precision instrument and electronics manufacturing**  
MN: \$305 million

<sup>12</sup> Commodities imported from/exported to the same state have blue headings below.

Imports and exports through California ports support inland industries (all values below in \$2012).

Imports are often perceived as end-use products entering the country ready for use by businesses or consumers. However, imports regularly come into the United States in the form of raw materials or intermediate products that U.S. businesses need to manufacture their final products. California ports serve as a key entry point for these imports, serving an important role in sustaining jobs and supporting the U.S. inland economy. The U.S. inland economy also relies on California ports for exporting finished products back to international consumers.

Manufacturers and other producers throughout the United States depend on California's marine transportation industry for access to the opportunity markets of Eastern Asia and beyond.

*Imports are often perceived as end-use products entering the country ready for use by businesses or consumers. However, imports regularly come into the United States in the form of raw materials or intermediate products that U.S. businesses need to manufacture their final products.*

### Import Narrative 1. Precision Instruments and Electronics

Texas imports precision instruments and electronics for its technology sector. Primary port districts: Los Angeles CSA (98 percent) and San Francisco CSA (2 percent). In 2012, electronics-related industries<sup>13</sup> in Texas employed over 196,000 workers, ranking second in the nation behind California. As measured by GDP in 2010, electronics manufacturing in Texas accounted for nearly 10 percent of electronics manufacturing in the United States. These jobs are also very high paying with an average salary of \$97,000. Major companies in this industry with facilities in Texas include Dell, Texas Instruments, Freescale Semiconductor, Apple, Maxim Integrated Products, and Samsung Austin Semiconductor.



Texas is a major importer of electronics and precision instruments, and California ports are the primary entry point for these imports.<sup>14</sup> In 2012, Texas imported \$10.8 billion of electronics, of which \$9.2 billion (85 percent) came through California ports. Texas also imported \$3.0 billion of precision instruments, of which \$2.9 billion (97 percent) came through California ports (FAF, 2015). These electronics and precision instruments include components like chips, circuit boards, or other intermediate components that can be used in the manufacturing of final products.<sup>15</sup>

<sup>13</sup> The industry is defined as the following sectors (NAICS): Computers & Peripheral Equipment Mfg. (3341); Communications Equipment Mfg. (3342); Semiconductor & Electronic Components Mfg. (3344); Semiconductor Machinery Mfg. (333242); Electronic Instrument Mfg. (3345); Computer Wholesalers (423430); and Computer Systems Design (541512).

<sup>14</sup> See SCTG codes 35 (electronics) and 38 (precision instruments) for a description of these categories. Available at: <https://www.census.gov/svsd/www/cfsdat/cfs071200.pdf>.

<sup>15</sup> The import data do not provide a breakdown of the value of intermediate and final products.



## Import Narrative 2. Components for Car Manufacturing

Tennessee imports components for car manufacturing. Primary port districts: Los Angeles CSA (99 percent) and San Francisco CSA (1 percent).

Tennessee is a major hub of vehicle manufacturing. The industry supports over 100,000 jobs and \$6 billion in payroll, and General Motors, Nissan, and Volkswagen all have assembly plants in the state

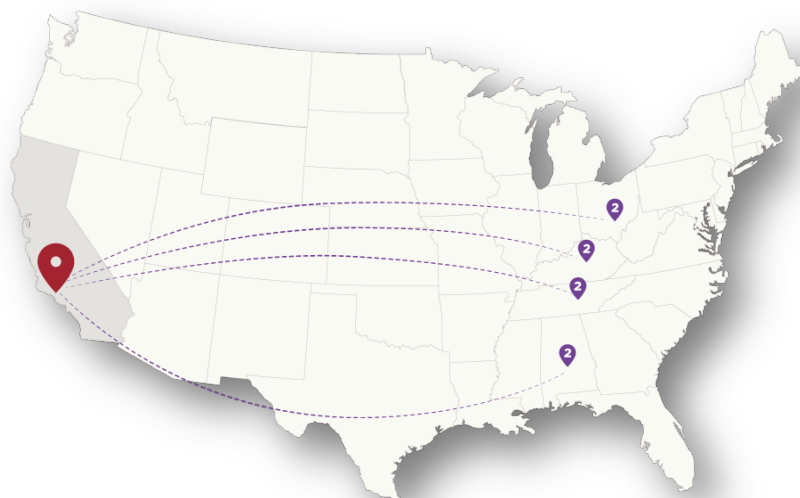
(Tennessee Automotive

Manufacturers Association, 2014).

Spring Hill, Tennessee, is home to General Motors' 6.9 million-square-foot manufacturing plant, which alone employs over 1,800 workers

(General Motors, 2013). Nissan has manufacturing plants in Smyrna and Decherd, which use components to assemble vehicles ready for end-use.

The Decherd plant—specializing in powertrain assemblies—employs more than 1,600 people with an annual payroll of over \$63 million (Nissan, 2014). Volkswagen's Chattanooga plant supports more than 3,200 employees and contributes an expected \$1.4 billion in total tax revenues to Tennessee—the economic effects of these jobs are felt statewide (Volkswagen, 2015).



In 2012, Tennessee imported \$4.2 billion worth of “motorized vehicles” (including both vehicles and vehicle components), of which 72 percent (\$3.0 billion) came through California ports. The vast majority of these (\$2.9 billion) came through the Port of Los Angeles from East Asia (FAF, 2015).

Other leading importers of components for car manufacturing. Primary port districts: Los Angeles CSA (99 percent) and San Francisco CSA (1 percent). In 2012, 45 percent of Ohio's motorized vehicle and component imports came through California ports (FAF, 2015). These components support the operations of many Ohio vehicle manufacturers, including Honda, who employs nearly 14,000 workers across the state. One of Honda's largest plants in the state, the Marysville facility, employs about 2,700 people across the Miami Valley and can produce as many as 1,800 vehicles a day and up to 440,000 vehicles a year (Dayton Daily News, 2015). Honda's other large Ohio facility—the East Liberty plant—employs approximately 2,400 workers and can produce up to 240,000 vehicles a year (Columbus Dispatch, 2015).

*The Montgomery, Alabama, Hyundai plant employs more than 3,000 people and reports that “more than 72 suppliers have located businesses throughout North America to support the Hyundai plant. [T]hese suppliers are expected to create 5,500 additional jobs” (Hyundai Motor Manufacturing, Alabama, 2015).*

In 2012, Kentucky imported \$1.7 billion worth of motorized vehicles and components through California ports, representing 59 percent of the state's total foreign motorized vehicle imports (FAF, 2015). These imports—primarily destined for Georgetown, Kentucky—help support the largest Toyota manufacturing plant outside of Japan. The plant, known as TMMK (for Toyota Motor Manufacturing, Kentucky), employs nearly 7,000 people and produces about 500,000 vehicles and engines per year (Toyota Motor Manufacturing, Kentucky, Inc., 2014).

In 2012, Alabama imported \$1.7 billion worth of motorized vehicles and components through California ports, representing 44 percent of the state's total foreign motorized vehicle imports (FAF, 2015). Two manufacturing plants help drive the import of these goods: Honda's facility in Lincoln, Alabama, and Hyundai's facility in Montgomery, Alabama. The Honda plant employs more than 4,000 people and has an annual production capacity of 340,000 vehicles (Honda Manufacturing of Alabama, 2014). The Hyundai plant employs more than 3,000 people and is capable of producing 399,500 vehicles per year at full capacity. Moreover, "more than 72 suppliers have located businesses throughout North America to support the Hyundai plant," and "these suppliers are expected to create 5,500 additional jobs" (Hyundai Motor Manufacturing, Alabama, 2015).

## Combined Narrative 1. Components for Car Manufacturing

California ports support Michigan car manufacturing. Primary import districts: Los Angeles CSA (51 percent), San Francisco CSA (44 percent), and San Diego MSA (5 percent). Primary export districts: Los Angeles CSA (75 percent), San Francisco CSA (21 percent), and San Diego MSA (4 percent). Michigan employs more than twice as many motor vehicle manufacturing workers (46,700 as of December 2014) as the next closest state (Ohio—22,600) (BLS, 2015b). This number swells to 166,000 when including workers involved in motor vehicle parts manufacturing. In addition to these manufacturing jobs, "every major vehicle-related manufacturer and supplier has [research and development] tech centers in Michigan" (Pure Michigan, 2014). Many companies with facilities throughout the state drive Michigan's vehicle manufacturing sector, but a particularly illustrative example is Ford Motor Company's Michigan Assembly Plant (MAP) in Wayne, Michigan. MAP produced more than 300,000 vehicles in 2012, directly employs approximately 5,000 people, and supports over 48,000 jobs nationwide (24,000 of which are elsewhere in Michigan) (Center for Automotive Research, 2013). Other key contributors are Fiat Chrysler's Jefferson North Assembly Plant in Detroit, which employs over 4,600 people (Fiat Chrysler Automobiles, 2015), and General Motors' Detroit-Hamtramck manufacturing assembly facility, which employs over 1,600 people (GM News, 2015).



Michigan motor vehicle manufacturing relies on California ports for both importing parts and exporting final products. In 2012, almost 40 percent (\$2.3 billion) of Michigan's motorized vehicle component and part imports entered the United States through California ports; in that same year, more than \$500 million of cars were exported *back* through California ports en route to foreign markets. Eastern Asia is the primary driver of California-dependent vehicle manufacturing activity in Michigan, providing over \$2 billion in goods (89 percent of all Michigan-bound motor vehicle imports through California) and receiving over \$430 million in exports (76 percent of all motor vehicle exports through California originating in Michigan) through Los Angeles and San Francisco ports alone (FAF, 2015). Furthermore, a recent U.S. Department of Commerce report notes that China is Cadillac's "largest overseas market." Because of this, "GM hope[d] to boost exports to China by 70 percent in 2013 to keep up with demand" and "began exporting the [Chevrolet] Volt to China in 2012, where it is sold through 13 dealerships in eight major cities" (International Trade Administration, 2013).

## Import Narrative 3. Basic Chemicals



Illinois imports basic chemicals to support key industries. Primary port districts: Los Angeles CSA (97 percent) and San Francisco CSA (3 percent). Illinois imported \$318 million of basic chemicals through California ports in 2012. This accounted for 29 percent of the \$1.1 billion of all basic chemicals imported into the state that year. Illinois manufacturers use these basic chemicals to manufacture several products exported to foreign markets (2012 export values appear in parentheses): fertilizers (\$1.9 billion), plastics/rubbers (\$1.54 billion), pharmaceuticals (\$275 million), and more complex compounds that would also fall under the basic chemicals category (\$3.97 billion) (FAF, 2015).



In many cases, these end products are exported to foreign markets through the same California ports through which their component basic chemicals were imported. For example, Illinois' plastic and rubber exports were \$1.54 billion in 2012, 61 percent of which (\$936 million) were exported through California ports. Pharmaceutical exports from Illinois totaled \$275 million in 2012, and 40 percent (\$111 million) of these goods traveled from Illinois manufacturing facilities, such as Takeda Pharmaceuticals (Takeda Pharmaceuticals, 2015) and Abbott Laboratories (Abbott Laboratories, 2015), to California ports. Basic chemicals can also be used to synthesize other, more complex compounds that would also fall under the basic chemical category. In 2012, Illinois exported \$3.97 billion of basic chemicals, the majority of which—58 percent (\$2.29 billion)—were exported through California ports. A key company in this economic sector is Sigma-Aldrich, which has a manufacturing and distribution facility in Urbana and employs approximately 4,700 people across all of its U.S. operations (Sigma-Aldrich, 2015).

## Combined Narrative 2. Machinery

California ports support the Illinois machinery industry. Primary import districts: Los Angeles CSA (96 percent), San Francisco CSA (4 percent), and San Diego MSA (<1 percent). Primary export districts: Los Angeles CSA (96 percent) and San Francisco CSA (4 percent). Durable manufacturing is the fifth highest contributing sector to Illinois' GDP (JPMorgan Chase, 2014). With more than 1,500 establishments and almost 70,000 paid employees, machinery manufacturing (NAICS 333) (CBP, 2015) plays a substantial role in Illinois' economic wellbeing. The industry consists of computer-controlled machine tool operators; engine and other machine assemblers; machinists; mechanical engineers; team assemblers; tool and die makers; and welders, cutters, solderers, and brazers. Illinois is one of the top five U.S. employers for many of these occupations, such as tool and die makers (ranked third) and mechanical engineers (ranked fourth) (OES, 2015). Moreover, these trends are on the rise. The Illinois Manufacturers' Association reports that Illinois "led the nation in the number of newly credentialed machinists during 2014," with 2,285 certificates representing a 36 percent increase over 2013 and "more than one-third of all credentials earned in the mid-west alone" (Illinois Manufacturers'



Association, 2015). Anchoring Illinois' manufacturing industry is Caterpillar Inc. (headquartered in Peoria, Illinois), which is home to around 3,200 employees in and around Peoria and is responsible for \$55 billion in annual sales and revenue (ABC News, 2015).

California ports play a key role in supporting the Illinois manufacturing sector by providing an entry point for manufacturing inputs and access to foreign markets for domestically produced goods. In 2012, \$4.1 billion of machinery was imported into Illinois from California (representing 36 percent of the state's foreign machinery imports), and \$2.6 billion in machinery was exported from Illinois back through California ports (representing 41 percent of the state's foreign machinery exports). For both imports and exports, the primary trade route is between the Port of Los Angeles and Eastern Asia (FAF, 2015).

### Combined Narrative 3. Furniture

California ports support the Washington furniture manufacturing industry. Primary import districts: Los Angeles CSA (58 percent), San Francisco CSA (42 percent), and San Diego MSA (<1 percent). Primary export districts: Los Angeles CSA (>99 percent) and San Francisco CSA (<1 percent). Washington State employs approximately 5,500 people in the furniture and related product manufacturing industry (NAICS 337) (BLS, 2015a). Over the four-year period from 2009 to 2012, these workers contributed over \$1.2 billion to state GDP (BEA, 2015).



Washington State depends on California ports for both the import of manufacturing inputs and for the export of finished products. In 2012, Washington imported approximately \$185 million worth of furniture components through California (almost 25 percent of Washington's furniture-related imports that year). These imports not only supported domestic supply chains, but helped enable Washington manufacturers to sell over \$41 million in furniture products back to foreign markets, \$7.2 million (17 percent) of which was transported through California ports. Nearly all (99.7 percent) of these exports moved from the Port of Los Angeles to markets in Eastern Asia. The imported furniture components also primarily came from Eastern Asia (86 percent), though they were distributed more evenly among California's largest ports, with approximately \$100 million going through Los Angeles and \$60 million through San Francisco. Additionally, over \$14 million of furniture components made their way from European suppliers to Washington manufacturers through California ports (FAF, 2015).

### Export Narrative 1. Plastic and Rubber Products

Ohio exports plastic and rubber products through California. Primary port districts: Los Angeles CSA (98 percent) and San Francisco CSA (2 percent). Plastic and rubber manufacturing (NAICS 326) is a very important industry to the Ohio economy (BLS, 2015a). In 2012, this industry supported 53,000 jobs, paying out over \$2.4 billion in wages. These industries contributed \$5.5 billion to the Ohio



GDP, which is just over 1 percent of the \$549 billion Ohio state GDP and more than the industrywide average of approximately 0.5 percent of U.S. GDP (BEA, 2015). Two Fortune 500 companies involved in plastics and rubber manufacturing—Goodyear Tire & Rubber and Parker-Hannifin—are headquartered in Ohio.

In 2012, Ohio exported \$1.53 billion of plastics and rubber internationally to help support these integral industries. California ports served as a gateway to export \$490 million (32 percent) of these foreign exports. Plastics and rubber primarily went out through the Port of Los Angeles with \$390 million going to Asia and \$76 million going to Southeast Asia and Oceania.

### Export Narrative 2. Meat and Seafood

California ports support Iowa's meat processing industry. Primary port districts: Los Angeles CSA (18 percent) and San Francisco CSA (82 percent). Meat processing is an essential industry in Iowa, supporting businesses that include slaughterers, food service companies, packers, locker operators, butcher shops, smokehouse owners, wholesalers, custom operations, retail operations, and companies that supply goods and services to the meat industry. The importance of this industry can be measured in part by the 263 licensed meat and poultry plants in the state (Iowa Department of Agriculture and Land Stewardship, 2015). In 2013, animal slaughtering and processing (NAICS 3116) and poultry and egg production (NAICS 1123) supported over 30,000 jobs in Iowa and \$1.2 billion in wages, representing 6 percent and 7 percent of the U.S. total, respectively (BLS 2015a).



In 2012, Iowa exported \$301 million of meat and seafood internationally to help further bolster this industry (FAF, 2015).<sup>16</sup> California ports played a key supporting role as 86 percent (\$259 million) of these exports went out through California ports. Meat was predominantly exported through the Port of San Francisco with a final destination of East Asia; this combination of port and foreign destination accounted for \$212 million in exports.

### Export Narrative 3. Cereal Grains

Illinois exports cereal grains through California ports. Primary port districts: Los Angeles CSA (92 percent) and San Francisco CSA (8 percent). Farming is a key driver of economic activity in America's heartland, and cereal grains produced in Illinois provide a clear illustration. Illinois is home to 75,087 farms, over half of which (38,836) are classified as NAICS 1111: Oilseed and grain



<sup>16</sup> FAF presents data for meat and seafood combined; however, because Iowa is landlocked, the vast majority of this is likely meat.

farming (USDA, 2012c). These grain-producing entities represent over 12.9 million acres of farmland (USDA, 2012a) and support exports valued at approximately \$6.4 billion in 2012 (FAF, 2015). Despite the magnitude of Illinois' agricultural output, almost 65,000 of the total 75,087 farms are owned by families or individuals. Moreover, approximately 90 percent of Illinois farms are less than 1,000 acres in size (USDA, 2012b).

In 2012, slightly less than one-third of all grain crops produced for export in Illinois (valued at approximately \$1.81 billion) traveled through California ports to reach their final destination. Nearly all (92 percent) of these cereal grains moved through Los Angeles ports. Of the grains exported through California-Long Beach ports, almost \$1.6 billion (96 percent) were shipped to Eastern Asia (FAF, 2015).

#### Export Narrative 4. Tobacco Products

North Carolina and Virginia rely on California ports for exporting tobacco. Primary port districts: Los Angeles CSA (84 percent) and San Francisco CSA (16 percent). North Carolina is the top U.S. tobacco manufacturer. In 2012, the tobacco industry (NAICS 3122) supported 6,100 jobs and \$416 million in wages in the state, which represents over 40 percent of tobacco-related employment in the United States (BLS, 2015a). Another leading producer is Virginia, which was home to 558 tobacco farms in 2012, representing almost 23,000 acres of tobacco farmland. These farms produced over 53 million pounds of tobacco, a total falling behind only North Carolina (391.7 million pounds) and Kentucky (183.9 million pounds) (USDA, 2012a).



In 2012, North Carolina and Virginia respectively exported \$508 million and \$936 million of tobacco internationally; California ports helped support this industry by serving as a gateway for \$526 million (36 percent) of these exports. The vast majority of these exports traveled to Eastern Asia through the Port of Los Angeles (\$438 million from North Carolina and Virginia combined) and the Port of San Francisco (\$79 million from North Carolina only) (FAF, 2015).

#### Export Narrative 5. Other Agricultural Products

California ports support in-state agriculture. Primary port districts: Los Angeles CSA (40 percent), San Francisco CSA (60 percent), and San Diego MSA (<1 percent). California is home to 80,500 farms and ranches, which produce nearly half of U.S.-grown fruits, nuts, and vegetables each year (California Department of Food and Agriculture, 2015b). These farms are spread across 25.5 million acres of land (USDA, 2012a) and accounted for nearly 175,000 jobs in





California's crop production industry (NAICS 111) in 2013 (BLS, 2015a). In addition to the domestic employment and distribution associated with California crops, their exportation plays an important role in California's economy. In 2013, California's share of total U.S. agricultural exports climbed to 14.7 percent (\$21.24 billion), the vast majority of which (\$18.34 billion) consisted of field crops, fruits, nuts, and vegetables (California Department of Food and Agriculture, 2015a).

California's ports played a central role in the export of those goods. Given the diverse range of commodities comprising the agriculture industry, it is difficult to compare findings across databases; however, we can use the FAF "other agricultural products" category to provide a snapshot of the role California ports play in the foreign sale of the state's crops. Of the approximately \$5.9 billion in other agricultural products exported from California in 2012, \$4.88 billion (83 percent) passed through California ports. The majority of these goods (64 percent) were bound for Eastern Asia, with nearly \$2 billion worth passing through San Francisco and another \$1.2 billion through Los Angeles. Speaking to the strong international demand for California crops, 10 percent (\$477 million) of California's total agricultural exports made their way from San Francisco ports to Europe (FAF, 2015).

### Export Narrative 6. Metallic Ores

Southeastern states export metallic ores through California. Primary port district: Los Angeles CSA (100 percent). Florida's heavy mineral sand deposits are mined for a variety of minerals, including those used to make the titanium dioxide pigments found in paint, varnish and lacquers, plastics, and paper (Florida Department of Environmental Protection, 2015). This industry employed 3,311 Floridians in 2013 (NAICS 212) (BLS, 2015a), over 225 of whom worked at DuPont's Titanium Technologies Plant in northeast Florida (DuPont, 2007). The heavy mineral mining industry in Florida dates back to 1916 and increasingly supports the state economy with contributions of \$1.14 billion, \$1.85 billion, and \$2.2 billion to state GDP from 2010 to 2012 respectively (BEA, 2015).



California ports play a critical role in supporting this industry. Over \$142 million of metallic ore was exported from Florida to foreign markets in 2012, 81 percent of which (\$115 million) moved through the Port of Los Angeles to Eastern Asia. Although Mississippi (842 employees as of 2013 [BLS, 2015a] and \$472 million contributed to state GDP in 2012 [BEA, 2015]) maintains a less robust mineral market than Florida, 98 percent (\$29.4 million) of Mississippi's metallic ore exports also passed through the Port of Los Angeles en route to Eastern Asia. This suggests an important relationship between the Southeastern U.S. metallic ore industry and California ports.

### Export Narrative 7. Precision Instruments and Electronics

California ports support Minnesota's precision instrument and electronics manufacturing industry. Primary port districts: Los Angeles CSA (>99 percent) and San Francisco CSA (<1 percent). The manufacturing industry is critical to the success of the Minnesota economy. Within the manufacturing industry, the combination of fabricated metal products manufacturing (NAICS 332); machinery manufacturing (NAICS 333); computer and electronic products manufacturing (NAICS 334); and electronic equipment, appliances, and component manufacturing (NAICS 335) contributed 127,000 jobs to the state's economy in 2012 (BLS, 2015a). These industries contribute \$15.4 billion to the total state GDP of \$298 billion (5 percent) (BEA, 2015). Leeds Precision Instruments, a leading designer and manufacturer of scientific and medical equipment (Leeds, 2015), is one such company in Minnesota that falls within these industries.



In 2012, Minnesota exported \$459 million of precision instruments and electronics internationally to help support these critical Minnesota industries. California ports contributed to the majority of these exports with \$305 million (54 percent) leaving through California. Of the total exports through California, \$283 million (93 percent) traveled to Eastern Asia via the Port of Los Angeles.

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