

California and the Global Economy: Recent Facts and Figures, 2006 Edition

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Summary

This paper presents current patterns and recent trends in California's exports, foreign direct investment, and gateway activity, three key measures of the state's international business activity. These are some of the major findings:

- In 2005, California's exports increased by almost \$7 billion from the previous year to \$116.8 billion, the second-highest level on record.
- California's exports grew by 6.2 percent, but the growth of exports from the rest of the United States was 11.2 percent.
- Asia continues to be the major destination for California's exports. Six of California's top ten export partners are Asian countries, and the region bought 44.9 percent of all California exports in 2005.
- California exports proportionately more computer and electronic products than does the rest of the United States. However, computer and electronic product exports have not returned to 2000 peak levels, and actually fell by 1.2 percent in 2005, to \$41.8 billion.
- Transportation product exports became the second-leading sector in 2005, up from being the third-leading sector from 2000 to 2004.
- California's growth in agricultural exports continued to be strong in 2004, rising 9.2 percent to \$8.2 billion. California's agricultural exports are 14 percent of total U.S. agricultural exports.
- California was the leading state for foreign direct investment in 2003, with 628,600 employees in foreign-owned firms.
- In 2003, foreign-owned firms in California owned property, plant, and equipment valued at \$115.6 billion, a figure that has continued to decrease since 2000.
- California's seaports processed 30 percent of all U.S. waterborne trade by value and 42 percent of all U.S. container trade in 2004. Including all modes of transport, California gateways accounted for one-fifth of all U.S. trade.
- Between 2000 and 2004, the share of U.S. trade passing through California's gateways declined significantly – more than seven percentage points for airports and more than two percentage points for seaports. The share passing through California's land ports increased by just over 0.2 percentage points.

Introduction

Californians engage with the global economy in many different ways. Key types of interactions include goods and services exports, international direct investment, and gateway services provided by California's seaports, airports, and land crossings. These interactions are the focus of this report.

In goods trade, California companies supply the world with exports of computer technology, transportation equipment, agricultural products, and other items. In services trade, the state exports services when, for example, foreign students study in California's universities or when foreign residents watch Hollywood movies abroad. With \$116.8 billion in goods exports in 2005, California was the second-leading goods export state. Texas was first, with \$128.8 billion, and New York was a distant third, with \$50.5 billion.

California is the leading state for foreign direct investment (FDI) in the United States. FDI is investment by foreigners into operating businesses rather than into financial instruments such as bonds. As of 2003, the year for which the most recent data are available, 628,600 people worked in foreign-owned firms in California, more than in any other state. New York was second, with 432,000 workers employed in foreign-owned firms, and Texas third, with 372,600.

Gateway services in California are also important. The state hosts three of the largest container ports in the country – Los Angeles, Long Beach, and Oakland – which together handled 15.1 million twenty-foot equivalent units (TEUs) of containers in 2004. This number is 39 percent of the U.S. total. Combined, Los Angeles and Long Beach constitute the fifth-largest container port in the world, behind only Singapore, Hong Kong, Shanghai, and Shenzhen. California's airports also serve as major trade gateways, and Los Angeles International and San Francisco International are the leading export gateways in the state.

Officials in various levels of state government are considering a variety of policies related to the international economy, including how to improve security at California's global gateways, whether and how to improve trade infrastructure, and whether to assist California's exporters in reaching foreign markets. This paper presents current patterns and recent trends in California's exports, foreign direct investment, and gateway activity. In doing so, it provides policymakers, trade professionals, and state residents and businesses with an updated set of facts about California's interactions with the international economy

California's Exports

In 2005, California's exports continued their expansion from the previous year, recovering from declines in 2002 and 2003. State exports in 2005 rose by more than \$6.8 billion, to \$116.8 billion. This same year, California accounted for 12.9 percent of all U.S. exports, the lowest share since 1988.¹ California's entire economy accounted for roughly 13.3 percent of the aggregate U.S. economy in 2004, the year of latest available data, and its goods-producing economy accounted for 12.2 percent of the U.S. goods-producing economy. California's share of U.S. goods exports is slightly higher than its share of the U.S. goods economy, making California's goods producers slightly more export-oriented than producers in the rest of the country.² Despite its declining share, California accounts for a larger share of U.S. trade than all but one other state – Texas. In 2005, Texas accounted for 14.2 percent of U.S. exports. California and Texas are by far the largest exporting states. New York, the third largest exporter, accounted for only 5.6 percent of all U.S. exports.

Despite the increase in California's exports, the value of these exports actually rose more slowly than the value of exports from the rest of the United States. The value of the state's exports grew 6.2 percent from 2004 to 2005, whereas the value of exports from the rest of the country grew 11.2 percent. With the exception of 2004, California's share of annual U.S. exports has declined each year since hitting a peak of 15.3 percent in 2000.

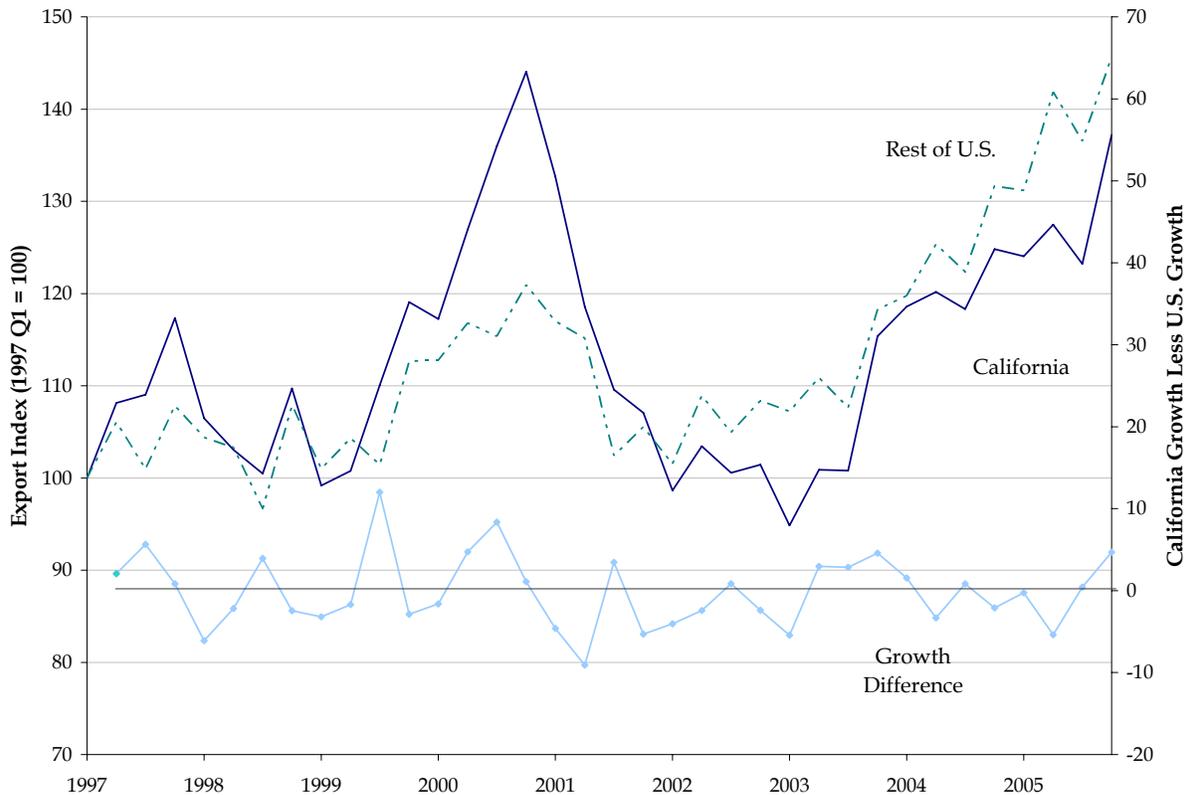
For much of the period between 1997 and 2005, California's goods exports followed trends in the rest of the country fairly closely, although with more volatility.³ Between the first quarter of 1997 and the first quarter of 2004, exports from California rose by 18.6 percent; exports from the rest of the country rose by 19.7 percent. As Figure 1 shows, however, the period between 1999 and 2001 represents a striking anomaly. Largely driven by an expansion of computer and electronic products exports, California's exports grew by 40 percent between early 1999 and mid-2000. By early 2002, however, they had plummeted to levels comparable to early 1997. In late 2003, exports from both California and the rest of the country started an upward trajectory. However, the period since 2004 may represent a relative slowdown for California, and California's exports have lagged behind those from the rest of the country. Between the first quarter of 2004 and the last quarter of 2005, exports from California grew 15.7 percent, whereas those from the rest of the United States grew 21.6 percent.

¹ This is the first year for which state export data are available. For a more detailed explanation of state export data, please see Appendix B.

² From 1990 to 2005, California's share of total U.S. output ranged from a high of 14 percent in 1990 to a low of 12.6 percent in 1998. California's share of U.S. goods output over the same years varied from a low of 10.1 percent in 1994 to a high of 12.7 percent in 2000. Goods output includes agriculture, mining, construction, and manufacturing.

³ Because the U.S. government introduced a new industrial classification system in 1997, much of our description of California's export trends starts in that year. As noted, state export data go back to 1988, and when possible and relevant, we discuss longer trends.

Figure 1
Goods Exports from California and the Rest of the U.S.: 1997-2005

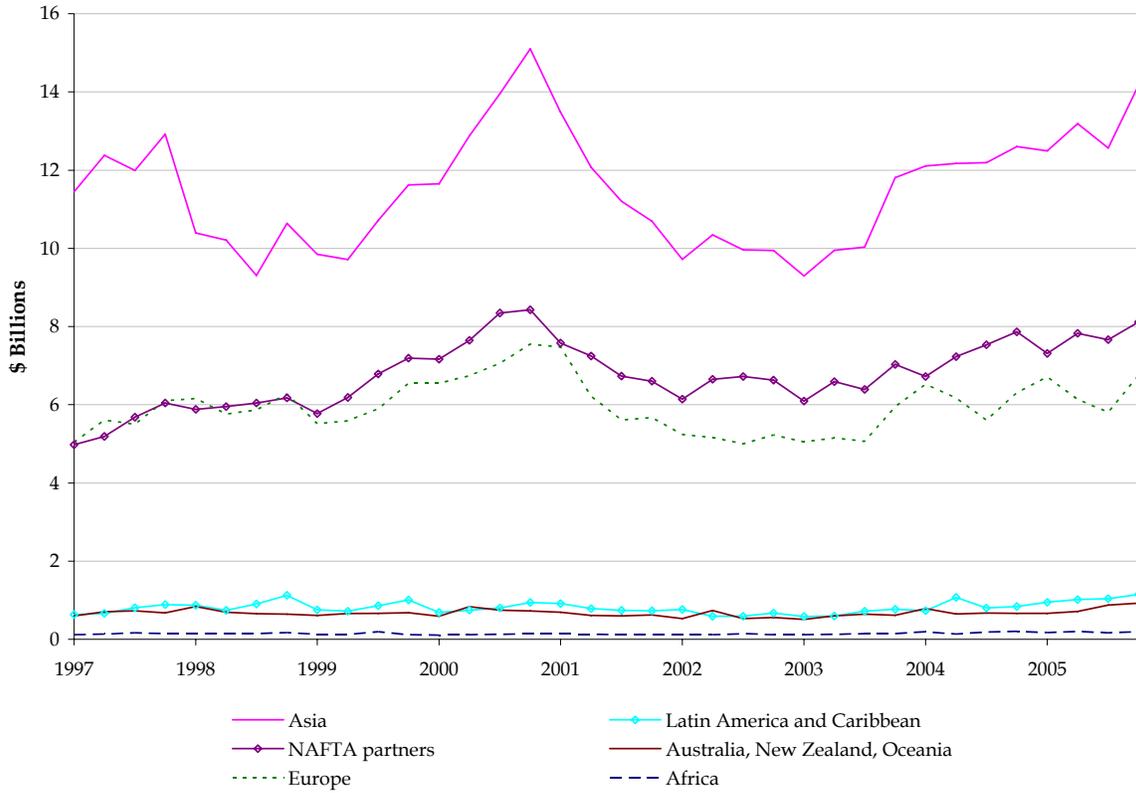


Source: World Institute for Strategic Economic Research (WISER), www.wisertrade.org.

Notes: Figure shows time path for indexed quarterly current dollar exports. Figure does not show difference in growth between the fourth quarter of 1996 and the first quarter of 1997 because data start in the first quarter of 1997.

Although California's export growth has fluctuated significantly in recent years, several characteristics have remained constant. California's exports are highly concentrated in the high-technology sector, and the greatest share is headed for Asia. These concentrations are largely responsible for the dramatic run-up and decline of California's exports. A regional breakdown of export trends shows that exports to Asia grew in 2000 and sank in 2001, with a recovery in the second half of 2003 that continued through the end of 2005 (Figure 2). The same pattern is evident in the sectoral breakdown of exports (Figure 3). The computer and electronic products industry experienced a dramatic increase in 2000 and an even more dramatic decline in 2001 that continued through early 2003. Exports of these products grew in the second half of 2003 but have since leveled off.

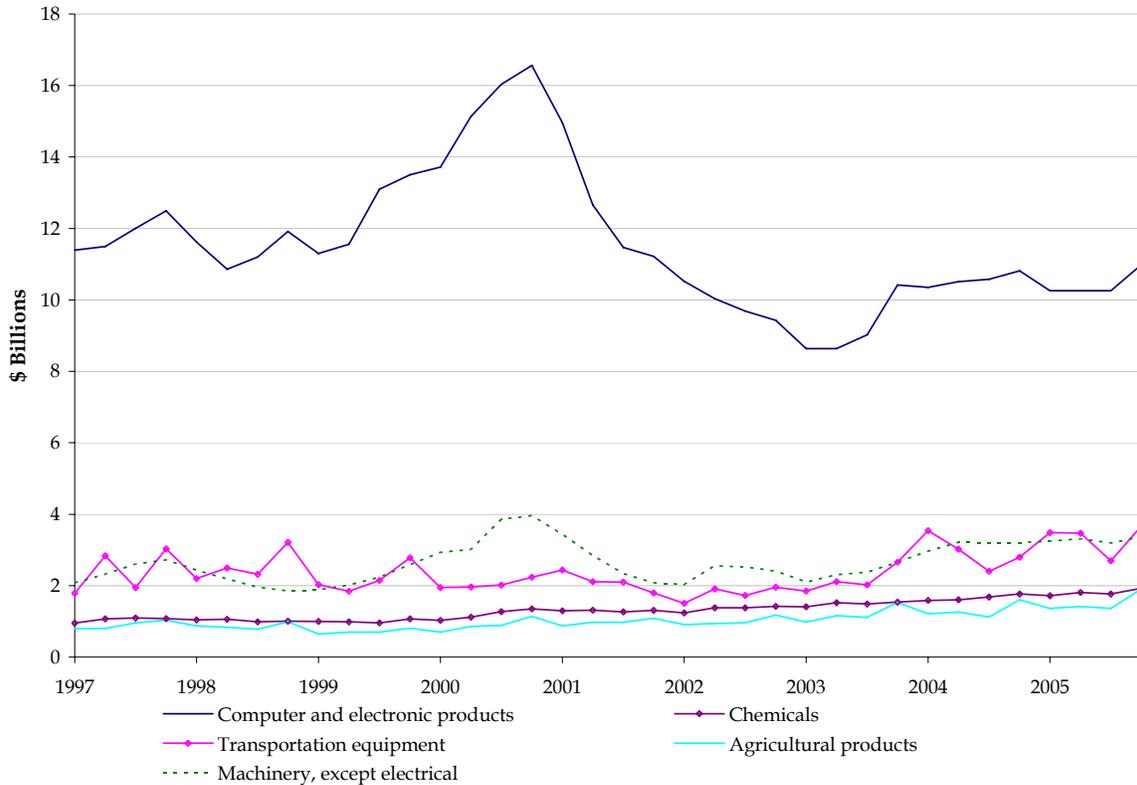
Figure 2
California Goods Exports by Regional Destination: 1997-2005



Source: WISER.

Notes: Figure shows time path for quarterly current dollar exports. Latin America and Caribbean excludes Mexico.

Figure 3
Top Five Sectors of California Goods Exports: 1997-2005



Source: WISER.

Note: Figure shows time path for quarterly current dollar exports.

Exports by Regions and Countries

California's goods exports are highly concentrated in three regions. In 2005, markets in Asia, the North American Free Trade Agreement (NAFTA) area, and Europe accounted for 93.1 percent of California's goods exports (Table 1). Although these shares have been reasonably stable over time, exports to Asia have been on the rise since 2002 and in 2005 hit their highest share, 44.9 percent, since 1997. Exports to the NAFTA partners, Canada and Mexico, have also grown rapidly, accounting for 26.5 percent of California's exports in 2005. With a larger share of exports going to NAFTA partners and Asia, the European market has lost significant share, falling from a high of 25.1 percent in 1998 to 21.7 percent in 2005. The Latin American, Oceania, and African markets lost share over much of the period since 1997, but they have recently stabilized and may have started to pick up again.

The share changes mentioned above coincided with the commencement of the U.S.-Canada Free Trade Agreement in 1989, the implementation of NAFTA in 1994, and the stagnation of the Japanese economy in the 1990s. The growth of China's economy and the more

recent, ongoing recovery of Asia and Japan have also influenced recent trends in California's goods exports.

Table 1
California Goods Exports by Region and Destination: 2005

Region	Level (\$ millions)	Share (%)	Growth	Average Annual
			(%) 2004-05	Growth Rate (%) 1997-2005
Asia	52,410	44.9	6.8	0.9
NAFTA partners	30,915	26.5	5.3	4.4
Europe	25,400	21.7	3.3	1.7
Latin America and Caribbean	4,160	3.6	20.8	4.2
Australia, New Zealand, Oceania	3,189	2.7	14.9	2.0
Africa	744	0.6	2.5	3.5
Top 15 export destinations				
Mexico	17,703	15.2	2.7	6.0
Japan	13,498	11.6	1.3	-2.2
Canada	13,213	11.3	9.1	2.6
China	7,850	6.7	14.7	18.6
South Korea	6,345	5.4	7.3	0.9
Taiwan	5,383	4.6	0.4	-0.7
United Kingdom	5,029	4.3	-3.4	0.0
Hong Kong	4,901	4.2	-4.2	3.6
Germany	4,266	3.7	15.8	1.5
Singapore	3,781	3.2	-9.2	-4.3
Netherlands	3,622	3.1	-5.0	2.0
France	2,692	2.3	-8.9	2.0
Australia	2,466	2.1	9.9	1.1
Malaysia	1,942	1.7	-3.0	-4.7
Belgium	1,759	1.5	2.6	6.3
All countries	116,819	100.0	6.2	2.1

Source: WISER.

Notes: Data for Latin America and Caribbean exclude data for Mexico.

Overall, the top three trading partners are the same for both California and the rest of the United States. However, California sends a significantly larger share of its exports to Japan, whereas the rest of the country sends a larger share of its exports to Canada (Table 2). California's exports are also more geographically diverse than exports from other states. As Table 2 shows, California's exports are more equally distributed across all leading destinations.

Table 2
Top Goods Export Destinations from California and the Rest of the U.S.: 2005

Country	Export Share (%)			Rank	
	California	Rest of U.S.	Difference	California	Rest of U.S.
Mexico	15.2	13.3	1.9	1	2
Japan	11.6	6.1	5.4	2	3
Canada	11.3	23.4	-12.1	3	1
China	6.7	4.6	2.1	4	4
South Korea	5.4	3.1	2.4	5	7
Taiwan	4.6	2.4	2.2	6	10
United Kingdom	4.3	4.3	0.0	7	5
Hong Kong	4.2	1.8	2.4	8	13
Germany	3.7	3.8	-0.1	9	6
Singapore	3.2	2.3	1.0	10	11
Netherlands	3.1	2.9	0.2	11	8
France	2.3	2.5	-0.2	12	9
Australia	2.1	1.7	0.4	13	14
Malaysia	1.7	1.2	0.5	14	18
Belgium	1.5	2.1	-0.6	15	12

Source: WISER.

Asia

California's goods exports are highly concentrated in Asia. In 2005, \$52.4 billion of the state's exports – 44.9 percent of all California's exports – were destined for Asian markets. California is also a dominant source of all U.S. exports to Asia. In 2005, California accounted for 20.6 percent of all U.S. exports to Asia, more than any other individual state. Ranking just behind California are Texas (12.1%), Washington (8.4%), and New York (7.0%).

Among the 22 countries to which California sent more than \$1 billion worth of exports in 2005, 12 are in Asia, underscoring Asia's importance to California's exporters. These 12 economies combined accounted for 43.2 percent of all California exports in 2005. In contrast, those same 12 economies accounted for only 23.4 percent of exports from the rest of the United States in 2005.⁴

Among Asian countries, exports to China have grown the fastest in recent years. The average annual growth rate of 18.6 percent between 1997 and 2005 is the highest among California's top 20 export partners. After two years of scorching growth – 21.9 percent in 2003 and 25.2 percent in 2004 – California's exports to China increased less dramatically in 2005, at

⁴ European countries tend to rank higher in the share of exports received from the rest of the United States because of the greater role of European trade along the Eastern seaboard.

14.7 percent. The 2005 increase occurred in many commodities, but growth in exports of transportation equipment, waste and scrap, and primary metal manufacturing products were the main contributors. Exports of transportation equipment alone jumped 113 percent, from \$479 million to \$1 billion. Among the top 20 destinations for California's goods exports, India experienced the second-fastest growth in California's exports from 1997 to 2005, at 16.1 percent, although this growth occurred from a much smaller base than growth in California's exports to China.

NAFTA Partners

In 2005, growth in exports to Canada and Mexico slowed slightly, to 5.3 percent. From 1997 to 2005, the long-term average annual growth rate was 4.4 percent, the highest among all regions. During this same period, the share of California's exports to Mexico peaked at 17.4 percent in 2002 and fell to 15.2 percent in 2005. The share to Canada was highest at 12.6 percent in 1999, and measured 11.3 percent in 2005.

Despite the importance of the NAFTA countries to California's exporters, the share of the state's exports heading for Mexico and Canada is smaller than that flowing from the rest of the United States. In 2005, California sent 26.5 percent of its exports to Mexico and Canada, whereas the rest of the United States sent 38.2 percent. This difference is a result of California's lower level of exports to Canada. In 2005, the rest of the United States sent 25.2 percent of its exports to Canada, while California sent only 11.3 percent.

Europe

In 2005, California exported a slightly smaller share of its total exports (21.7 percent) to Europe than did the rest of the United States (23.6 percent). Europe's relative importance as a destination for the state's exports declined during much of the last decade, leveling off from 2002 to 2004, and declining once more in 2005. In 2005, Europe received \$25.4 billion worth of exports from California, with the 25 members of the European Union accounting for 91.4 percent of exports to all of Europe.

Among the European countries that received more than \$1 billion worth of California exports in 2005, those that experienced the fastest growth in exports included Italy, up 17.1 percent, and Germany, up 15.8 percent. The United Kingdom remains the leading European recipient of California exports, buying \$5 billion worth of goods in 2005. However, this number represents a decline of 3.4 percent from 2004.

Other Regions

Besides those described above, the other regions of the world – Latin America and the Caribbean; Australia, New Zealand, and Oceania; and Africa – do not represent significant markets for California's exports. The share of total exports heading for these regions was 6.9 percent in 2005, the highest share since 1998. Among the three regions, Latin America and the Caribbean received 3.6 percent of California exports in 2005; Australia, New Zealand, and Oceania received 2.7 percent; and Africa received 0.6 percent.

In 2005, the largest single market within these regions was Australia, which received \$2.5 billion worth of California's exports, ranking it thirteenth among all markets. The second largest market was Brazil, which received \$1.4 billion in exports.

Exports to Latin America as a whole have recently grown rapidly, rising 28.8 percent in 2004 and 20.8 percent in 2005. California's exports to Africa declined from 1990 through 2000 but have risen steadily since then. In 2004, exports to Africa grew by an impressive 32.7 percent; however, in 2005 they grew by only 2.5 percent, amounting to just \$744 million.

Exports by Sector

Manufactured goods dominate California's goods exports (Tables 3 and 4). In 2005, manufactured goods accounted for 89.5 percent of total goods exports, the lowest share since 86.6 percent in 1988. Manufactured goods accounted for nine of California's top 10 export sectors. The remaining sector, agriculture, is the fifth largest export sector, but it contributed only 5.2 percent to California's exports.⁵ Services exports are also important for California, potentially exceeding even those of computer and electronic products.

Table 3
Exports from California's Top 10 Goods Export Sectors: 2005

Sector	Level (\$ millions)	Share (%)	Growth (%) 2004-05	Average Annual Growth Rate (%) 1997-2005
Computer and electronic products	41,752	35.7	-1.2	-1.6
Transportation equipment	13,325	11.4	13.3	4.2
Machinery, except electrical	13,131	11.2	4.3	3.8
Chemicals	7,212	6.2	8.6	7.0
Agricultural products	6,048	5.2	16.2	6.7
Food and kindred products	4,627	4.0	11.3	4.1
Electrical equipment, appliances, etc.	3,721	3.2	8.2	2.2
Fabricated metal products	3,051	2.6	17.8	6.7
Plastics and rubber products	1,958	1.7	12.9	4.5
Primary metal manufacturing	1,627	1.4	21.4	5.3
Total	116,819	100.0	6.2	2.1

Source: WISER.

Note: Sectoral rankings exclude the following categories: miscellaneous manufactured commodities, special classification provisions not elsewhere specified or included, and waste and scrap.

⁵ Other nonmanufacturing exports include livestock and livestock products, forestry products, oil and gas, and minerals and ores.

Table 4
Share of Total Exports for Top Goods Export Sectors
in California and the Rest of the U.S.: 2005

Sector	California (%)	Rest of U.S. (%)
Computer and electronic products	35.7	16.3
Transportation equipment	11.4	18.7
Machinery, except electrical	11.2	11.6
Chemicals	6.2	14.1
Agricultural products	5.2	3.3
Food and kindred products	4.0	3.2
Electrical equipment, appliances, and components	3.2	3.4
Fabricated metal products	2.6	2.8
Plastics and rubber products	1.7	2.3
Primary metal manufacturing	1.4	3.6
Total	82.6	79.1

Source: WISER.

Note: Sectoral rankings exclude the following categories: miscellaneous manufactured commodities, special classification provisions not elsewhere specified or included, and waste and scrap.

Manufactured Goods Exports

California's manufacturing exports are highly concentrated in the computer and electronic products sector. In 2005, exports from this industry – also known as information technology – accounted for 35.7 percent of all the state's goods exports and 39.9 percent of the state's manufacturing exports. These products account for a significantly smaller share of exports for the rest of the country. However, California exports from this sector actually decreased in 2005, falling to \$41.8 billion from \$42.2 billion in 2004. As with the state's exports in general, a large share of these computer and electronic goods are destined for Mexico, Canada, and Japan, which together received 32.5 percent of all exports from this industry.

In 2005, 24.6 percent of the value of all U.S. exports in the computer and electronic products sector originated in California, illustrating the state's dominance in this area. However, except for a slight increase in 2004, California's share of U.S. exports in this sector has been falling steadily since 2000, when it hit a high of 31.3 percent. Although California's dominance is not what it was in 2000, the state's share is still slightly greater than that of the next two largest information technology exporting states, Texas and Florida, which together accounted for 24.0 percent in 2005.

Transportation equipment (the largest export sector for the rest of the nation) is California's second largest export sector. After experiencing a decline in exports earlier in this

decade, California's exports of these products have grown significantly in the last several years, overtaking machinery in 2005 as the second-largest export sector for the first time since 1999 (Figure 3).

Agricultural Exports

California is both the top producer and the top exporter of agricultural products in the United States. This section of the paper relies on data from the Agricultural Issues Center at the University of California at Davis (AIC) for the most detailed estimates of California's agricultural exports.⁶ The most recent AIC data include exports from 2004.

In 2004, California exported \$8.2 billion in agricultural products, 14.3 percent of all U.S. agricultural exports. This was nearly \$700 million more than the previous year and a 0.8 percentage point rise in share of all U.S. agricultural exports. The 2004 export level is the highest level since at least 1995.

California's agricultural exports are relatively small compared to its manufacturing exports, although the agricultural share has grown significantly since 2000 (Table 5). In 2004, the state's agricultural exports totaled 8.3 percent of the value of manufacturing exports. This number is greater than it was in 2000 when manufacturing exports were at their peak, but less than the percentage value in 2003 because of rapid growth in manufacturing exports.

Table 5
California's Agricultural and Manufacturing Exports: 1997-2004

	1997	2000	2003	2004
Agricultural exports (\$ million)	6,979	6,625	7,501	8,194
Average annual growth, 3 previous years (%)	—	-1.7	4.2	7.5
Manufacturing exports (\$ million)	91,292	111,529	84,342	99,242
Average annual growth, 3 previous years (%)	—	6.90	-8.89	0.27
Agriculture relative to manufacturing (%)	7.6	5.9	8.9	8.3

Sources: Agricultural export data are from the Agricultural Issues Center, University of California, Davis. Manufacturing export data are from WISER.

Note: Figures are not consistent with those of Tables 3 and 4 because of the use of different data sources.

For California's top 50 agricultural export commodities, the total quantity of exports relative to the total quantity of production was almost 22 percent in 2004. This ratio represented a small increase over 2003's 21 percent, but was a sizeable increase over the previous two years, in which exports relative to output were 18 percent (2002) and 17 percent (2001).

⁶ Since 1997, the Agricultural Issues Center of the University of California at Davis (AIC) has collaborated with the California Department of Food and Agriculture to develop estimates of the value of California's agricultural exports that are more accurate than statistics released by the U.S. Census Bureau and U.S. Department of Agriculture (see Appendix B).

Reversing a decline in the late 1990s, agricultural exports have risen every year since 2001. However, they did not pass the high of 1997 until 2003, when they reached \$7.5 billion. The cause of these changes is not clear. Agricultural prices are notoriously volatile, and the total value changes may have been due to price changes, quantity changes, or both.

California's agricultural exports can be found in markets around the world (Table 6). They are concentrated in the European Union, Canada, and Japan, which together received half of all agricultural exports in 2004. Mexico and China (including Hong Kong) round out the top five destinations for the state's agricultural exports. California's fastest-growing large market has been the European Union, which grew 18.3 percent annually between 2001 and 2004. Among the top 12 markets, Australia has grown the fastest, at 38.7 percent annually between 2001 and 2004. Agricultural exports to Mexico grew 29 percent annually between 1997 and 2000, but fell by 25 percent between 2000 and 2002. In 2003, California's exports to Mexico grew by a remarkable 45 percent; in 2004 they grew by an additional 16.7 percent.

Table 6
California's Agricultural Exports by Destination: 2004

Destination	Level (\$ millions)	Share (%)	Growth (%) 2003-04	Average Annual Growth Rate (%) 2001-2004
European Union	1,698	20.7	20.4	18.3
Canada	1,467	17.9	7.3	8.9
Japan	905	11.1	-0.8	-1.6
Mexico	527	6.4	16.7	11.0
China and Hong Kong	456	5.6	5.8	12.1
South Korea	259	3.2	-17.0	-2.5
Taiwan	179	2.2	-2.9	-6.4
India	114	1.4	-7.0	6.7
Malaysia	85	1.0	14.3	9.7
Indonesia	78	1.0	-33.8	-8.7
Australia	72	0.9	28.7	38.7
United Arab Emirates	67	0.8	28.3	24.0
Rest of the world	2,285	27.9	13.9	5.5
Total agricultural exports	8,194	100.0	9.2	7.5

Source: Agricultural Issues Center, University of California, Davis.

Note: Figures are not consistent with those of Tables 3 and 4 because of the use of different data sources.

California's agricultural exports are as diverse as their destinations. In 2004, California's top agricultural export commodities included almonds, wine, cotton, table grapes, dairy products, oranges, rice, tomatoes, walnuts, and strawberries (Table 7). With a share of 16.7 percent, almonds are the dominant single export crop. The largest commodity group is the grape complex—wine, table grapes, raisins, and grape juice—which in 2004 totaled more than \$1.36 billion, or 16.6 percent of all agricultural exports.

Table 7
California's Agricultural Exports by Commodity: 2004

Commodity	Level (\$ millions)	Share (%)	Growth (%) 2003-04	Average Annual Growth Rate (%) 1997-2004
Almonds	1,370	16.7	26.7	7.6
Wine	684	8.3	23.9	8.9
Cotton	629	7.7	-7.0	-5.3
Table grapes	454	5.5	17.5	4.2
Dairy and products	440	5.4	34.8	10.8
Oranges and products	345	4.2	0.4	1.6
Rice	280	3.4	28.8	5.4
Tomatoes, processed	250	3.1	4.9	1.4
Walnuts	240	2.9	12.4	6.7
Strawberries	204	2.5	3.3	8.4
Total agricultural exports	8,194	100	9.2	2.3

Source: Agricultural Issues Center, University of California, Davis.

Note: Figures are not consistent with those of Tables 3 and 4 because of the use of different data sources.

The increase in almond exports to 16.7 percent of all agricultural exports is a significant share increase after hovering just over 10 percent between 1999 and 2001. This share increase is a result of dramatically higher levels of almond exports rather than of decreases in other exports. After falling by 20 percent in 1999, almond exports increased by 120 percent from 1999 to 2004. But growth in agricultural exports was hardly limited to almonds. Between 2003 and 2004, exports of nine of the top 10 products increased, with six of them experiencing double-digit growth. Cotton was the only top 10 commodity to have a decrease in exports, falling by 7 percent. Despite this drop, the 2004 cotton export value of \$629,000 was the second highest it has been since 1998, behind only the 2003 export figure of \$676,000.

Services Exports

A final component of exports is services exports. World trade in services is growing, and the Uruguay Round Agreements of 1994 formally brought services trade under international rules through the General Agreement on Trade in Services. In 2005, services exports accounted for \$379 billion or nearly 30 percent of total U.S. exports.

Private services exports are divided into several categories, including spending by tourists and other travelers; passenger fares; payments for transportation services (such as port services); royalties and license fees; and other private services, such as education, banking, finance, and professional services. For example, all spending by a foreign student at a California university is considered an export of education services. Any spending by foreign tourists visiting California is considered an export of travel services. Leading sectors for

services exports in the state include travel, international freight services, intellectual property services, research and development, and film.

There are no official estimates of services exports by state. In 2004, the most recent year for which data on gross state product (GSP) of private industries are available, U.S. private services exports relative to U.S. private services GSP measured 4.1 percent. If California exported private services in the same ratio, total private services exports from California would have totaled \$45.3 billion, or 41.2 percent of goods exports and 29.2 percent of all exports.⁷

This figure may underestimate California's true services exports. It is based on the assumption that California exports services at same rate as the rest of the country, when, in fact, the state may have a greater international orientation because of such features as its coastal location, large immigrant population, and highly internationalized manufacturing and agricultural sectors.

⁷ The ratio of private services exports to aggregate private GSP was 3.2 percent. Estimating California services exports using this ratio results in a slightly lower California services export figure of \$44.2 billion.

California's Foreign Direct Investment

California is the leading state for foreign direct investment (FDI) in the United States. FDI is investment by foreigners into operating businesses, known as foreign affiliates, rather than into financial instruments, such as bonds. Common measures of FDI include the number of employees working in foreign-owned firms and the amount of property, plant, and equipment (PPE) owned by foreign affiliates.

In 2003, the most recent year of available data, 628,600 employees worked in foreign-owned firms in California. In the United States as a whole, about 5.7 million employees worked in foreign-owned firms; California's share amounted to 11 percent. California has had the highest level of employment in foreign-owned firms since at least 1977, the first year of available data. Employment in foreign-owned firms amounted to approximately 5.3 percent of California's total private employment, the same as the share in the rest of the country.⁸

As is the case with total employment in foreign-owned firms, California has the highest level of manufacturing employment in foreign-owned firms. In 2003, manufacturing employees in the state's foreign-owned firms totaled 151,100, or 24 percent of all employees in foreign-owned firms. These 151,100 workers accounted for 8.4 percent of all manufacturing employees in foreign-owned firms in the United States. Manufacturing employees in foreign-owned firms in California totaled 9.8 percent of all California manufacturing employees in 2003; the figure was 12.7 percent for the rest of the United States.

Foreign affiliates own more property, plant, and equipment in California than in any other state. Much of it is in the form of commercial property. In 2003, total PPE owned by foreign-owned firms measured \$115.6 billion, of which almost \$31.8 billion was commercial property. Those values are 9.3 percent (PPE) and 18 percent (commercial property) of the U.S. totals.

FDI has been falling in California since the peak of the technology boom in 2000. Between 2002 and 2003, all measures of FDI either fell more or grew more slowly in California than in the rest of the United States. In California, overall employment and manufacturing employment in foreign firms fell by 8.6 and 7.9 percent, respectively, but fell by only 2.5 percent and 7.1 percent, respectively, in the rest of the United States. PPE fell by 0.4 percent in California, but rose by 4.4 percent in the rest of the United States. The only measure of FDI that rose in California was the value of commercial property owned by foreign firms, up 1.9 percent; however, in the rest of the United States this rose by 4.7 percent.

⁸ Official 2004 and 2005 data are not yet available. For a more detailed explanation of foreign direct investment data, please see Appendix B.

FDI by Regions and Countries

As Table 8 shows, of the top ten investors in California for which data are available, European nations make up the majority. The United Kingdom and Switzerland take the number one and number three overall rankings by employment.⁹ Of California's big three export markets – Canada, Mexico, and Japan – Japan is the FDI leader, followed by Canada. Although Mexico is a major export market, it is only the tenth-largest investor.

Japan is the leader of all countries in terms of value of PPE, driven in part by the high value of commercial property – almost \$6.5 billion – owned by Japanese investors. Historically, Japan has also been the leader in terms of employment. However, comparisons over time have become difficult because of a break in the data series. Until 2002, data for overall employment, manufacturing employment, PPE, and commercial property reflected operations of foreign affiliates with a 10 percent or greater ownership interest. Starting in 2002, data reflect the operations of only majority-owned affiliates, and Japanese investors have fewer employees in their majority-owned affiliates than do U.K. investors. We cannot say which set of investors has more employees based on all affiliates, regardless of ownership. All data discussed below refer to operations of majority-owned affiliates.

Europe

Europe is by far the largest source of FDI in California. Employment in European firms as a share of employment in all foreign-owned firms has risen each year this decade, from a low of 58 percent in 2000, to 60 percent in 2001, to 63 percent in 2002. In 2003, almost 65 percent of all people in California who worked for a majority-owned foreign firm worked for a European-owned firm.

European ownership in 2003 applied to 52 percent of all foreign-owned PPE. This implies that European-owned firms are relatively more labor intensive than firms from other countries. However, the ratio of employees to PPE decreased slightly from 2002 to 2003.

In absolute terms, employment in European-owned firms fell between 2002 and 2003, from 385,900 people to 363,300 people. Of major European investors, only investors from Sweden employed more workers in California in 2003 than in 2002.

In 2003, about 20.5 percent of all employees in European-owned firms were manufacturing employees, compared to 24 percent for all foreign investors. Of investors from the European countries, those from the Netherlands were the manufacturing leaders, with almost 26 percent of their employees in manufacturing.

⁹ Investors based in Bermuda are also active in California, but data for their investments in 2003 are not available.

Table 8
Foreign Direct Investment in California by Region and Country: 2003

Region or Country	Employment	Manufacturing Employment	Property, Plant, and Equipment	Commercial Property
	(thousands)	(thousands)	(\$ millions)	
All countries	561.0	134.8	88,247	25,808
Regions				
Europe	363.3	74.5	45,772	8,804
Asia Pacific	130.3	34.8	31,439	13,672
NAFTA	32.5	11.0	4,941	1,133
Latin America	27.5	10.5	3,820	651
Middle East	2.1	0.8	1,586	1,396
Africa	0.6	0.1	131	108
Top countries				
United Kingdom	106.1	25.5	15,003	3,179
Japan	95.6	28.2	20,003	6,453
Switzerland	71.6	12.3	5,323	311
Germany	50.5	10.1	9,023	1,644
France	50.4	11.6	5,740	1,731
Netherlands	30.5	7.8	7,028	1,299
Sweden	28.9	1.3	1,174	374
Canada	22.0	6.9	3,773	1,061
Australia	13.3	3.2	5,746	3,319
Mexico	10.5	4.1	1,168	72

Source: U.S. Bureau of Economic Analysis.

Notes: Data are for majority-owned foreign affiliates only. Commercial property in 2003 is estimated for Sweden based on 2002 California data and for Australia based on 2003 national data. Figures for Latin America exclude Mexico, which is included in NAFTA. Regional figures may not add to total figures because the listed regions are not exhaustive of all sources of FDI into the United States.

Asia

In terms of employment and PPE, Asia is second to Europe as a source of investment activity in California; however, it is first in terms of commercial property investment. In 2003, Asian firms employed 23.2 percent of the work force in all majority-owned foreign firms and owned 35.6 percent of the foreign-owned PPE. Japan plays a critical role among Asian investors, as it is responsible for more than 73 percent of employment and nearly two-thirds of PPE in all Asian-majority-owned affiliates. In terms of manufacturing employment, 29.5 percent of all workers in Japanese-owned firms were in manufacturing, compared to 26.7 percent for all Asian-owned firms and 20.5 percent for Europe-owned firms.

The region's employment in California fell between 2002 and 2003 – from 136,500 to 130,300 – but this decrease was driven solely by a decline in employment by Japanese-owned firms, from 104,400 to 95,600. Investors from the rest of Asia raised their employment levels, from 32,100 to 34,700.

NAFTA Partners

Firms that were majority-owned by investors from the NAFTA countries employed 32,500 Californians in 2003, 5.6 percent of all workers in all majority-owned foreign firms in California that year. Of the workers in NAFTA-owned affiliates, 22,000 (68%) worked in Canadian majority-owned foreign affiliates and 10,500 (32%) worked in Mexican majority-owned foreign affiliates. The proportion at Mexican-owned firms was far higher in California than in the United States as a whole, where Mexican-owned firms employed just 5.2 percent of workers in NAFTA-owned firms in 2003.

NAFTA-owned affiliates decreased their employment by 17,100 workers between 2002 and 2003, a decline of 34.5 percent. Nearly all of this decrease occurred in Canadian-owned affiliates, in which employment fell by 16,600.

Investors from the NAFTA partner countries held 5.8 percent of all foreign-owned PPE in California. Of all PPE owned by investors from the NAFTA countries, Canadian-owned firms held 76 percent – higher than their share of employment – and Mexican-owned firms held 24 percent – lower than their share of employment.

Latin America (excluding Mexico), the Middle East, and Africa

FDI into California from Latin America, the Middle East, and Africa represents a very small portion of total FDI. In 2003, about 5.4 percent of all workers in majority-owned foreign affiliates in California worked in affiliates owned by companies from these three regions, and the vast majority came from Latin America. However, employment in Latin American firms fell dramatically, from 38,200 in 2002 to 27,500 in 2003. Employment in Middle Eastern firms rose slightly, from 1,000 to 2,100, and employment in African firms held steady at about 600.

Investments from the Middle East region and Africa are concentrated in property – in terms of commercial property value, the Middle East constitutes the third-largest investing region. Commercial property amounts to 88 percent of Middle East PPE and 82 percent of African PPE, compared to 43 percent for Asia, 23 percent for the NAFTA countries, 19 percent for Europe, and 17 percent for Latin America.

FDI by Sector

By far the largest share of foreign investment activity in California takes place in the non-manufacturing sectors, which employed 380,600, or 67.8 percent, of all Californians who worked in majority-owned foreign affiliates in 2003 (Table 9). In fact, California has seen a steady erosion of relative employment in foreign-owned manufacturing since the late 1970s. In 1979, the peak year, almost 57 percent of all California workers in foreign-owned businesses worked in manufacturing. By 2001, that figure had fallen to about 32 percent. This decline

mirrors trends in the United States as a whole. In 1979, more than 57 percent of all U.S. workers in foreign-owned businesses worked in manufacturing, but by 2001 that figure had fallen to about 33 percent.¹⁰

Table 9
Foreign Direct Investment in California by Sector: 2003

Sector	Employment (thousands)	Property, Plant, and Equipment (\$ millions)
All sectors	561.0	88,247
Manufacturing	180.4	31,690
Nonmanufacturing	380.6	56,557
Wholesale trade	87.2	17,124
Information	40.1	5,940
Retail	25.4	3,246
Finance and insurance	23.6	2,322
Professional, scientific, and technical services	17.3	1,285
Real estate	3.6	13,600
Miscellaneous nonmanufacturing	183.5	13,007

Source: U.S. Bureau of Economic Analysis.

Notes: Data are for majority-owned foreign affiliates only. The information sector includes publishing, motion picture and sound recording, broadcasting and telecommunications, and information services and data processing; the finance and insurance sector excludes depository institutions; and the miscellaneous non-manufacturing sector includes agriculture, mining, utilities, construction, transportation and warehousing, and other services.

In 2003, slightly less than half of total employment in foreign-owned nonmanufacturing sectors was in a broad miscellaneous group that includes agriculture, mining, utilities, construction, transportation and warehousing, and other services. The next two most important nonmanufacturing sectors for foreign ownership are the wholesale trade and information industries, the latter of which includes publishing, motion pictures and sound recording, broadcasting and telecommunications, and information services and data processing. Of the nonmanufacturing sectors, only finance and retail grew between 2002 and 2003, with employment in the finance and insurance sector rising by more than 10 percent. The biggest proportionate declines came in the real estate industry and in miscellaneous nonmanufacturing.

¹⁰ The period between 1997 and 1999 saw a slight reversal of this trend. During this time, employment in manufacturing foreign affiliates in California rose 16.6 percent, whereas in nonmanufacturing foreign affiliates it rose 9.9 percent. For the United States as a whole at this time, those figures were 17.5 percent and 15.3 percent, respectively.

Although both nonmanufacturing and manufacturing sectors declined in terms of employment between 2002 and 2003, manufacturing actually declined less, falling 7.2 percent, to 180,400 workers. In comparison, the nonmanufacturing sector declined 9.8 percent, to 380,600 workers. Data for individual manufacturing sectors in 2003 are not yet available, but based on 2002 data, among manufacturing sectors, the computer and electronic products industry was by far the leading sector, employing 53,800 workers in majority-owned foreign affiliates in 2002, or nearly 28 percent of all such workers in the manufacturing sector. The chemical sector was the second largest, employing 26,000 workers, of which 16,900 were in the pharmaceuticals and medicines subsector. The third-leading sector was the manufactured food industry, which employed 22,400 workers in majority-owned foreign affiliates in 2002.

California's Global Gateways

California is a trade facilitation giant. Two of the top 10 U.S. trade gateways are in California (the port and airport of Los Angeles), as are five of the top 20 U.S. trade gateways. The five gateways collectively account for 88 percent of the \$457 billion in internationally traded goods that flow through the state (Table 10).¹¹ This amounts to almost 7 percent of total world trade. Although California is the nation's second largest exporting state, much of the trade through its gateways involves products with a non-California origin, in the case of exports, or destination, in the case of imports.

Table 10
Trade Through California by Mode: 2004

Mode	Value (\$ billions)	Share of U.S. Total (%)
Air	128.7	21.5
Land	36.6	5.0
Ocean	292.1	30.5
Total	456.8	20.0

Sources: U.S. Census Bureau, Foreign Trade Division.

California is host to three of the nation's 10 largest seaports, ranked by the value of trade. These are the ports of Los Angeles, Long Beach, and Oakland, which together processed in excess of \$260 billion in total trade, or 28 percent of all U.S. waterborne trade in 2004, the most recent year for which data are available. Add the remaining seaports in the state, and California process 30.5 percent of all U.S. waterborne trade – 34 percent of waterborne imports and 19.4 percent of waterborne exports.

California's air and land gateways also provide major trade gateway functions. Los Angeles International Airport and San Francisco International Airport collectively handle over \$60 billion in exports and \$65 billion in imports, and land crossings between California and Mexico are also becoming increasingly important. In 2004, California's largest land ports handled in excess of \$30 billion in trade.

This section discusses the growth in each trade gateway in terms of import and export values over time, as well as by a quantitative technique – known as “shift-share decomposition” – to explain the evolution of California's share of the U.S. international-goods-movement market. The technical details of this technique are reported elsewhere, but the idea behind it is simple.¹² It separates changes in the trade share of California's gateways into three

¹¹ These rankings and figures are based on customs clearance data. Data based on the port of unloading give slightly different rankings and put Los Angeles International Airport and the ports of Los Angeles and Long Beach among the top 10 gateways.

¹² See Jon D. Haveman and David Hummels, *California's Global Gateways: Trends and Issues*, Public Policy Institute of California, San Francisco, California, 2004.

parts: changes in trade composition by commodity, by country, and by demand. This last category tracks changes specific to individual sea, air, or land ports.

Changes in the country or commodity structure can play an important role in determining changes in a particular gateway's share of U.S. trade. For instance, the majority of U.S. imports from China travel by sea, with a large share entering through California's ports. As U.S. trade with China increases, so too will California ports' share of U.S. waterborne trade. Similar results occur with changes in trade by commodity. The demand category is in some sense the most important as it indicates changes in the relative appeal of moving goods through California's gateways as opposed to gateways in other states; for this reason demand is most likely to be affected by policy choices.

Table 11 reports changes in California's share of U.S. trade value from 2000 to 2004, separating imports from exports and examining changes by mode. The first column of numbers reports the total change in each share. The next three columns use the shift-share decomposition technique to attribute changes in total gateway shares to commodity composition, country composition, and gateway-specific demand factors.

Table 11
Changes in California's Percentage Share of Trade, by Value: 2000-2004

	Share Changes	Commodity Changes	Country Changes	Demand Changes
Imports				
Air	-7.1	-3.1	-1.3	-2.7
Ocean	-2.2	-0.5	-0.6	-1.1
Land	0.2	0.1	-0.0	0.1
Exports				
Air	-7.9	-2.0	-0.1	-5.8
Ocean	-3.8	-0.3	-0.6	-2.8
Land	0.3	-0.2	-0.2	0.8

Sources: U.S. Census Bureau, Foreign Trade Division; authors' calculations.

Notes: The land category represents changes in share of trade through California gateways relative to trade through all U.S. land gateways. For this reason, land figures do not match Table 18.

Looking at California as a whole, several things are apparent about the changing trade patterns in the state. First, air and sea transport, while growing significantly in absolute terms, declined as a share of overall trade. In the case of airports, these changes were a result of changes in the commodities entering and leaving California ports and in the demand for those ports, indicating a shift away from California's airports for both imports and exports. For waterborne trade, changes in trading partners were a significant source of decline, but a demand shift was the major factor. Overland trade through gateways in California grew in step with the overall growth in U.S.-Mexico trade.

Seaports

California's ports are among the largest in the nation. In 2004, seaports in California processed nearly \$290 billion in goods, the vast majority of which (\$244 billion) was in the form of imported goods (Table 12). Imports through California seaports have grown rapidly since 2000, while exports have exhibited a net decline – although, notably, the major ports of Los Angeles and Long Beach have both increased their exports. The top three ports in California accounted for 92.5 percent of all goods moved through all of the state's seaports – 91.5 percent of imports and 99 percent of exports.

Table 12
Trade Flows Through California's Largest Seaports: 2004

U.S. Rank	Port	Value (\$ billions)			Change 2000-04 (%)		
		Total	Imports	Exports	Total	Imports	Exports
1	Los Angeles	148.5	130.7	17.8	45.9	53.6	6.4
3	Long Beach	92.0	74.8	17.2	-6.3	-8.0	2.1
10	Oakland	26.9	18.3	8.7	7.5	18.1	-9.7
29	Port Hueneme	6.5	6.4	0.1	42.3	48.3	-57.5
34	San Diego	4.8	4.7	0.1	1.3	5.6	-64.2
39	Richmond	3.6	3.4	0.2	322.2	407.4	0.0
46	El Segundo	1.9	1.9	0.0	28.2	28.7	-86.1
52	Carquinez Strait	1.3	1.3	0.0	357.3	745.8	-84.7
57	Martinez	0.9	0.8	0.1	195.3	383.0	-57.0
59	San Francisco	0.8	0.6	0.2	-88.3	-86.1	-92.7
	Total - all California ports	289.1	244.4	44.7	18.0	23.3	-4.4
	Total - all U.S. ports	948.7	718.8	230.0	28.7	33.0	16.8
	Share - California ports	30.5	34.0	19.4	-8.3	-7.3	-18.2
	Share - top 3 CA ports	28.2	31.1	19.0	-7.6	-7.5	-13.4

Sources: U.S. Census Bureau, Foreign Trade Division.

Notes: Share figures are in percentage terms. Changes in shares are in terms of percentage points.

A measure of the importance and growth of a seaport's productivity is the number of ocean shipping containers that pass through it. In 2004, California's major ports processed nearly 5.9 million loaded containers of various sizes, a number roughly equivalent to over 9.8 million twenty-foot-equivalent container units (TEUs) filled with goods for international shipment (Table 13). Including goods for domestic shipment and empty containers flowing through the port the total is a staggering 15 million TEUs processed in 2004. The Port of Los Angeles is the largest single container port in the United States, having processed over 4 million containers in 2004. Combined, California's ports handled 42 percent by container volume of all containers entering or departing U.S. shores, including 47 percent of all loaded import containers and 31 percent of all loaded export containers.

Table 13
Loaded Container Flows Through California's Primary Container Ports: 2004

Port	Container Volumes (Thousands of TEUs)			Change 2000-04 (%)		
	Total	Imports	Exports	Total	Imports	Exports
Los Angeles	4,875	3,846	1,029	51.0	58.3	28.8
Long Beach	3,764	2,951	813	17.5	22.9	1.3
Oakland	1,197	613	584	21.1	46.4	2.5
Total - California top 3	9,836	7,410	2,426	32.5	41.2	11.7
Total - U.S.	23,851	15,805	8,045	19.6	42.6	17.4
Share - California top 3	41.2	46.9	30.2	4.0	-0.5	-1.5

Source: Port Import Export Reporting Service (PIERS), reported by American Association of Port Authorities (AAPA).

Notes: Data in this table are for containers in international maritime activity only and exclude domestic container shipments. Share figures for container volumes are in percentage terms. Change in share is in terms of percentage points.

Ports in California have experienced rapid growth in the number of containers processed in recent years. From 2000 to 2004, the volume of containers passing through California's largest ports increased by 32.5 percent, with import container volume growing 41.2 percent. The number of export containers has grown somewhat less quickly, at 11.7 percent. Forecasts of growth in the number of containers passing through California's ports roughly indicate a tripling between 2003 and 2020.

Shift-share analysis may also be applied to specific seaports rather than to all California ports (Table 14). In the analysis of the changes in market share for California seaports, several points are noteworthy. California's largest port, Los Angeles, stands out among individual ports for achieving strong gains in import trade share. This increase in import share was, however, offset by a comparable decline in export share.

From Table 11, it is clear that California's seaports are losing share when measured in value terms. The single biggest factor is a reorientation of flows toward other ports, primarily on the East Coast. The lone exception is the Port of Los Angeles, which gained share over this period, primarily at the expense of its neighbor, the Port of Long Beach, and other West Coast ports. Changes in the commodity and country structure of U.S. trade further disadvantaged California's seaports during this period.

Table 14
Changes in California's Share of Waterborne Trade, by Value: 2000-2004

Port	Share Changes	Commodity Changes	Country Changes	Demand Changes
Imports				
Port of Los Angeles	1.6	-0.4	-0.4	2.4
Port of Long Beach	-3.5	-0.3	0.1	-3.4
Port of Oakland	-0.5	0.0	-0.2	-0.4
Other California ports	0.2	0.1	-0.2	0.3
Other West Coast ports	-1.6	-0.2	-1.0	-0.4
East Coast/Gulf ports	3.5	0.6	1.3	1.5
Exports				
Port of Los Angeles	-1.6	0.1	-0.1	-1.6
Port of Long Beach	-0.1	-0.3	0.1	0.1
Port of Oakland	-1.7	0.0	-0.5	-1.1
Other California ports	-0.3	0.0	-0.1	-0.2
Other West Coast ports	0.2	0.0	-0.9	1.2
East Coast/Gulf ports	3.2	-0.3	1.2	2.1

Sources: Census Bureau, Foreign Trade Division; authors' calculations.

Notes: Changes are in terms of percentage points. Totals may not add to figures in Table 11 due to rounding. For the same reason, total share change may not equal the sum of the decomposed share changes. Additionally, mail shipments, "low-value shipments," and any other shipments which are not attributed to specific geographies are not included in the analysis.

The recent growth in the share of waterborne trade at the East Coast and Gulf of Mexico ports suggests increased use of the Panama Canal, and perhaps even the Suez Canal, to ship goods directly to the eastern United States. Previously, these goods were transshipped by land. The shift to the East Coast and Gulf ports could also be a result of accelerating growth in trans-Atlantic trade.

Airports

In terms of the value of goods shipped through them, California's airports were among the most important in the nation in 2004. Los Angeles International Airport (LAX) and San Francisco International Airport (SFO) are the second and fourth most important gateways for moving U.S. airborne trade (Table 15). Handling, respectively, \$69 billion and \$55 billion in total trade, they are also among the most important gateways in California. As in the United States as a whole, in the state these airports are ranked second and fourth—behind the Port of Los Angeles, ranked number one, and the Port of Long Beach, ranked number three.

Whereas California seaports are primarily gateways for imports, the state's airports handle a more balanced mix of imports and exports. As a result, LAX and SFO were the number one and two export gateways in the state in 2004, processing approximately \$34 billion

and \$24 billion in exports, respectively. The majority of international trade processed by the Oakland airport is for export. It is, however, much smaller than trade through either LAX or SFO.

Table 15
Trade Flows Through California's Largest Airports: 2004

U.S. Rank	Airport	Value (\$ billions)			Change 2000-04 (%)		
		Total	Imports	Exports	Total	Imports	Exports
2	Los Angeles International	68.7	34.8	33.9	-11.1	-2.2	-18.7
4	San Francisco International	54.6	30.3	24.3	-38.5	-35.4	-41.9
19	Oakland International	4.1	0.0	4.1	-0.01	-39.4	1.1
	Total - all CA airports	128.7	65.9	62.7	-25.3	-21.5	-28.8
	Total - all U.S. airports	599.4	329.4	270.0	1.1	6.7	-5.0
	Share - California airports	21.5	20.0	23.2	-7.6	-7.2	-7.8
	Share - top 3 CA airports	21.3	19.8	23.1	-7.4	-7.0	-7.7

Sources: Census Bureau, Foreign Trade Division.

Notes: Share figures are in percentage terms. Changes in shares are in terms of percentage points.

Despite their obvious importance as trade gateways, each of California's three major airports experienced a decline in trade volume between 2000 and 2004, even while U.S. trade by air grew. The changes reported in Table 15 do not reflect the recent growth in trade flows through these airports, but instead reflect the fact that trade remains significantly below its peak in the year 2000. Exceptions are exports through Oakland International Airport (OAK), which grew slightly, and imports through Los Angeles International, which did decline, but negligibly. During this period, the share of California airports in total U.S. airborne trade fell by about 7.5 percentage points.

One-third to one-half of this decline in share was a result of changes in the commodity mix of U.S. airborne trade (Table 11). Commodities that are traditionally handled by these airports declined in significance as a share of U.S. trade, leading to a reduced relative and absolute use of California's airports. Changes in the countries involved in U.S. airborne trade also contributed to this decline. More important, however, were changes in demand: Shifts in the airports of choice among traders were responsible for approximately a 2.7 point decline in California's handling of imports and a 5.8 point decline in exports. These last figures reflect a significant change in preferences among shippers and carriers. Quite simply, trade is flowing around California whereas it used to flow through it.

The decline in trade through San Francisco International was the most significant, with share losses of 6.1 points for imports and 5.7 points for exports (Table 16). The reasons for the contraction at San Francisco seem to have been more or less equally distributed between reduced U.S. trade with individual countries and reduced demand for the airport overall. The concentration of share loss in the demand changes category suggests that San Francisco has become a less desirable gateway for exporters. Also notable is that the share decline in exports

through Los Angeles International is almost entirely explained by changes in airport use by exporters. Only Oakland International has failed to lose share in import or export trade; in fact, it shows a modest increase in export trade that is largely a result of increased demand, perhaps at the expense of San Francisco's airport.

Table 16
Changes in California's Share of Air Trade, by Value: 2000-2004

Airport	Share Changes	Commodity Changes	Country Changes	Demand Changes
Imports				
Los Angeles International	-0.9	-0.7	0.2	-0.3
San Francisco International	-6.1	-2.3	-1.4	-2.3
Oakland International	0.0	0.0	0.0	0.0
Rest of California	-0.2	-0.1	-0.1	-0.1
Rest of U.S.	7.3	3.0	1.4	2.9
Exports				
Los Angeles International	-2.2	0.0	0.0	-2.2
San Francisco International	-5.7	-1.8	-0.1	-3.9
Oakland International	0.1	-0.1	-0.1	0.3
Rest of California	-0.1	0.0	0.0	0.0
Rest of U.S.	7.6	1.8	-0.1	5.8

Sources: Census Bureau, Foreign Trade Division; authors' calculations.

Notes: Changes are in terms of percentage points. Totals may not add to figures in Table 11 due to rounding. For the same reason, total share change may not equal the sum of the decomposed share changes. Additionally, "Rest of U.S." does not include mail shipments and "low-value shipments," which are not attributed to specific geographies.

Overland Crossings

The leading land crossing in California is the Otay Mesa port of entry in San Diego County (Table 17). It handled \$22.8 billion of goods flowing between California and Mexico in 2004. Otay Mesa has grown rapidly in both absolute and relative terms. Calexico-East is another major land gateway, handling just over \$10 billion in trade in 2004. California also hosts a number of smaller crossings that feature a mix of cargo and passenger traffic moving by truck, train, or private car.

Table 17
Trade Flows Through California's Overland Crossings: 2000-2004

U.S. Rank	Land Crossing	Value (\$ billions)			Change 2000-04 (%)		
		Total	Imports	Exports	Total	Imports	Exports
7	Otay Mesa	22.8	13.8	9.0	16.3	21.6	9.1
17	Calexico-East	10.3	5.9	4.3	16.1	11.3	23.5
50	Tecate	1.0	0.5	0.5	8.9	10.2	7.4
155	San Ysidro	0.4	0.0	0.4	183.2	-78.6	186.6
	Total - all California crossings	34.1	20.3	13.9	16.1	18.0	13.4
	Total - all U.S.-Mex. crossings	223.9	130.2	93.7	8.4	15.2	0.1
	Share - California crossings	15.3	15.6	14.8	1.0	0.4	1.7

Sources: Census Bureau, Foreign Trade Division.

Notes: Share figures are in percentage terms. Changes in shares are in terms of percentage points. Data for the Calexico crossing are usually reported in combination with Calexico-East, and have been combined with Calexico-East in this document. Rankings are based on total value (imports and exports) not attributable to air or sea transport.

Trade through California's land gateways grew rapidly between 2000 and 2004. The phenomenon seems to be applicable to the nation. Trade through U.S.-Mexico land gateways grew everywhere—8 percent for the United States as a whole and 16 percent for California.

This shift-share decomposition places California's major land gateways in relief against total U.S. overland trade, including trade with Canada (Table 11). In the aggregate, U.S.-Mexico gateways took over a greater share of overland imports, but exports through U.S.-Canadian gateways grew more quickly. Even so, Otay Mesa and Calexico-East exhibit sizeable growth in share (Table 18). Otay Mesa increased its share of total U.S. imports and exports, even though imports through other California gateways did not grow. Although exports to Mexico decreased in importance relative to total overland trade, Otay Mesa and Calexico-East nonetheless increased their individual shares, suggesting strong growth or concentration of U.S.-Mexican trade in these locations.

Table 18
Changes in California's Share of Overland Trade, by Value: 2000-2004

Land Crossing	Share Changes	Commodity Changes	Country Changes	Demand Changes
Imports				
Otay Mesa	0.6	0.3	0.0	0.3
Calexico-East	-0.2	0.0	-0.1	-0.1
Tecate	0.0	0.0	0.0	0.1
Other California	0.0	0.0	0.0	0.0
Other Mexican Border	-0.4	-0.3	0.0	-0.2
Exports				
Otay Mesa	0.9	-0.5	0.0	1.4
Calexico-East	0.9	-0.4	0.0	1.3
Tecate	0.0	0.0	0.0	0.1
Other California	0.0	0.0	0.0	0.0
Other Mexican Border	-1.7	1.3	-0.1	-2.9

Sources: Census Bureau, Foreign Trade Division; authors' calculations.

Notes: Changes are in terms of percentage points. Totals may not sum due to rounding. The land category includes only border crossings with Mexico, leaving overland trade with Canada out of the analysis.

Final Observations

Californians engage with the international economy in ways beyond the scope of this report, in particular through goods and services imports and through investment abroad. Despite the importance of these interactions, data for them are more difficult to come by than the data presented here and therefore we do not discuss them. However, exports, foreign direct investment in California, and goods movement remain key markers of the state's international involvement.

In recent years, California's exports have largely mirrored growth trends exhibited by the rest of the United States in direction; however, California's export growth has generally been more muted since the end of the technology boom in 2001. From 2001 to 2003, the growth of California's exports lagged behind the rest of the nation. However, in 2004 California's exports rose 17 percent, compared to 12.4 percent for the rest of the United States. In 2005, California's exports lagged again, growing only 6.2 percent, while exports from the rest of the United States grew 11.2 percent. Among major export destinations for California goods and services in 2005, growth was particularly rapid in China, Germany, Israel, Italy, Brazil, and India.

California's largest export sector, computer and electronic products, actually fell in 2005, the only sector with more than \$2 billion worth of exports to do so. Transportation equipment moved into the second-largest slot with 13 percent growth in 2005, to \$13.3 billion.

Agriculture exporters in California experienced a boom year in 2004, bringing agricultural exports over the \$8 billion mark for the first time. Agricultural exports to the European Union, Canada, Mexico, China, and Hong Kong have grown substantially since 2001, averaging 13 percent per year. Of the top five markets, only Japan purchased fewer California agricultural goods by value in 2004 than in 2003. California's primary agricultural exports are almonds, wine and other grape products, cotton, dairy products, oranges, and rice.

California is the largest host state of FDI in the United States, with Europe by far the largest investor. Considering investment in only majority-owned affiliates, those owned by investors from the United Kingdom had the largest number of employees overall in 2003 (106,100). Affiliates owned by Japanese investors had the largest number of manufacturing employees (28,200) and owned the most PPE (\$20 billion) and commercial property (\$6.5 billion).

Although traffic through California's sea, air, and land gateways has grown in recent years, the share of total U.S. trade going through California's airports and seaports has declined since 2000. California's overland crossings with Mexico gained share during the same period, albeit slightly. In absolute terms, both ocean shipping and land shipping through California have experienced rapid growth in recent years. Growth in the value of air trade has been more moderate.

Appendix A. California's Exports to Selected Countries

Table A.1
Mexico

	2003	2004	2005	Change 2004-05
Top Five Sectors	(\$ billions)			(%)
Computer and electronic products	4.8	5.9	5.4	-8.8
Machinery, except electrical	1.8	2.0	2.1	3.9
Transportation equipment	0.7	1.1	1.2	7.5
Food and kindred products	0.7	0.8	1.1	30.4
Plastics and rubber products	0.8	0.9	1.0	10.0
Total, top 5	8.9	10.7	10.7	19.4
Total, all sectors	14.9	17.2	17.7	2.7

Japan

	2003	2004	2005	Change 2004-05
Top Five Sectors	(\$ billions)			(%)
Computer and electronic products	3.3	4.0	3.5	-12.8
Machinery, except electrical	1.5	2.1	2.1	-1.3
Transportation equipment	1.4	1.6	1.8	12.9
Food and kindred products	1.1	0.9	1.0	9.5
Chemicals	0.7	0.8	0.9	12.5
Total, top 5	8.1	9.4	9.2	14.3
Total, all sectors	11.8	13.3	13.5	1.3

Canada

	2003	2004	2005	Change 2004-05
Top Five Sectors	(\$ billions)			(%)
Computer and electronic products	4.0	4.5	4.7	4.7
Agricultural products	1.1	1.2	1.5	18.9
Transportation equipment	1.5	1.4	1.4	-3.6
Machinery, except electrical	0.5	0.7	0.8	15.6
Chemicals	0.6	0.6	0.7	1.6
Total, top 5	7.7	8.4	9.0	15.6
Total, all sectors	11.2	12.1	13.2	9.1

China

	2003	2004	2005	Change 2004-05
Top Five Sectors	(\$ billions)			(%)
Computer and electronic products	2.2	2.6	2.7	1.9
Transportation equipment	0.4	0.5	1.0	113.4
Machinery, except electrical	0.6	0.8	0.7	-10.6
Primary metal manufacturing	0.2	0.1	0.4	153.1
Chemicals	0.3	0.3	0.4	6.2
Total, top 5	3.7	4.4	5.2	41.8
Total, all sectors	5.5	6.8	7.9	14.7

South Korea

	2003	2004	2005	Change 2004-05
Top Five Sectors	(\$ billions)			(%)
Computer and electronic products	1.8	2.2	2.2	-2.2
Machinery, except electrical	0.7	1.2	1.5	26.8
Transportation equipment	0.4	0.5	0.5	-7.1
Food and kindred products	0.4	0.2	0.3	14.8
Agricultural products	0.3	0.3	0.3	4.4
Total, top 5	8.5	10.3	11.0	29.3
Total, all sectors	4.8	5.9	6.3	7.3

Source: WISER.

Notes: Countries are California's top five export markets in 2005. All sectors are ranked by 2005 value.

Appendix B. Notes on Data

Goods Exports

The U.S. Census Bureau's Foreign Trade Division provides data for state goods exports based on origin of movement. These data are then distributed by several resellers, including the World Institute for Strategic Economic Research, the source for this paper. These data are available from 1988 and are the most widely used data on state exports. In 1997, there was a change in industrial classification systems. Therefore, 1997 is used as a base year for growth data in our tables. When possible and relevant, we discuss longer or shorter trends.

The Census Bureau's series gives the transportation origin of the good – where it started its export journey, or its “origin of movement” – and was developed to meet the needs of transportation planners. Although not meant to represent actual production for export, the data come close in many cases. They perform less well for bulk commodities, such as agricultural products, and so this paper relies on data from the Agricultural Issues Center at the University of California, Davis, for more detailed estimates of California's agricultural exports.

Foreign Direct Investment

Foreign direct investment (FDI) in the United States is defined as ownership or control by one foreign person or entity of at least 10 percent of a U.S. business; the U.S. business is known as a foreign affiliate. The U.S. Bureau of Economic Analysis (BEA), the agency in charge of FDI statistics, does not report FDI at the state level, but instead reports data on the operations of foreign affiliates in each state, including information on employees; manufacturing employees; ownership of property, plant, and equipment (PPE); and ownership of commercial property.

Through 2001, these data reflect the operations of all foreign affiliates. Starting in 2002, however, state-level data on operations of foreign affiliates are limited to information on majority-owned foreign affiliates; that is, those with more than 50 percent foreign ownership. This break in the series precludes comparisons with previous years.

Gateways

Trade data for the sea, air, and land gateways and the associated shift-share calculations are from a special import and export data extract created by the Foreign Trade Division of the U.S. Census Bureau. These data reflect the port of final destination, or customs clearance. Additional data for seaports come from the American Association of Port Authorities, based on data from the Port Import Export Reporting Service. These data reflect the port of unloading, rather than the port of customs clearance. Goods can enter at one port but get cleared at another, and so two sets of port data are available.

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