Business Without Borders? The Globalization of the California Economy

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Foreword

Over the years, PPIC has published numerous reports on the globalization of California. The reports range from the effects of liberalizing U.S. trade policy on our state's economy to the role of immigrant entrepreneurs in Silicon Valley. In the broadest context, demographic change in California is a consequence of the globalization of our labor force. The fiscal demands on our K–12 system of education, on our county public health system, and on local government to contribute to improved homeland security can all be traced to the attractiveness of California in the global economy. To improve our understanding of where California fits in the global context, and especially in the context of the Pacific Rim, PPIC launched a series of projects in 2001 on the theme of Global California.

As part of this series, PPIC research fellow Howard Shatz has assembled an impressive array of data to show how the California economy compares with that of the rest of the nation when it comes to globalization. In *Business Without Borders? The Globalization of the California Economy*, Shatz looks at goods and services trade, foreign direct investment, and goods traffic through airports and seaports. He concludes that, in many respects, California's economy is not dramatically more global than the rest of the nation's. He observes, however, that California firms tend to be more active in those aspects of globalization that are growing fastest—for example, in the export of computers and electronic products and in the export of services in the legal, technical, and entertainment sectors. Also, California firms are more actively involved in production-sharing, a process by which multinational enterprise networks produce and assemble components in different locations—especially countries on the Pacific Rim. And far more products are exported through California's airports than is common in the rest of the nation—a sign that we ship more high-value, low-weight goods.

The pattern of export activity described by Shatz is consistent with the characterization of the California economy drawn some 50 years ago by Carey McWilliams—that entrepreneurs in California live on the "edge of novelty." Electronics, financial and legal services, and rapid delivery all characterize the growth economy of the 1980s and 1990s. It is too early to tell which products and services will next emerge to drive California's growth curve. But Shatz's profile of California's comparative advantages suggests that we have a solid base for growth and that California will again be one of the world's leading producers during the next phase of global economic expansion.

David W. Lyon
President and CEO
Public Policy Institute of California

Summary

The world has seen an explosion of international business since the end of World War II and especially in the last two decades. Goods and services trade, the establishment of foreign subsidiaries by companies, and purchases of foreign equities and bonds all have grown faster than world gross domestic product. Along with increased immigration, improvements in transportation and communications, and the harmonization of institutions, these cross-border transactions have come to be known as globalization.

Globalization is usually measured at the national level. Nations set border policies, collect tariffs, and regulate investment. But in a large country such as the United States, it is possible to ask about the globalization of states, and current California policy focuses on increasing California exports and attracting foreign companies to operate businesses here.

This study reports on California's interactions with the global economy. Merchandise exports have been the most visible sign of those interactions, but sales of goods overseas are not the only or even the most important way California interacts economically with the rest of the world. California firms set up operations abroad and foreign firms invest in California; California businesses and consumers buy goods from around the world; foreigners buy services from California—university education, tourism, and the right to show films; Californians buy services in return; and foreign shippers, airlines, and truckers crowd California's seaports, airports, and land borders to move people and products from and to the United States.

At the state level, foreign direct investment (FDI) and trade are the most relevant measures of the globalization of the economy. FDI includes investments by California companies in productive facilities or real estate throughout the world and investments by foreign companies in productive facilities or real estate in California. Trade represents

products and services made in California and purchased by foreigners or bought by Californians after production elsewhere in the world. State policy and California's business climate can directly affect outward direct investment, inward direct investment, exports, and imports.

Another measure of economic globalization relevant at the state level is gateway services—the port activities that enable international trade. At the national level, it matters little where imports enter or exports leave. However, port activities can have large effects on local economies. They bring benefits in the way of jobs and services and costs in the way of infrastructure demands, transportation congestion, and pollution.

Many discussions of economic globalization also include immigration and financial flows. Because immigration is the focus of other PPIC research, it is omitted here, and financial flows are perhaps better analyzed at the national level.

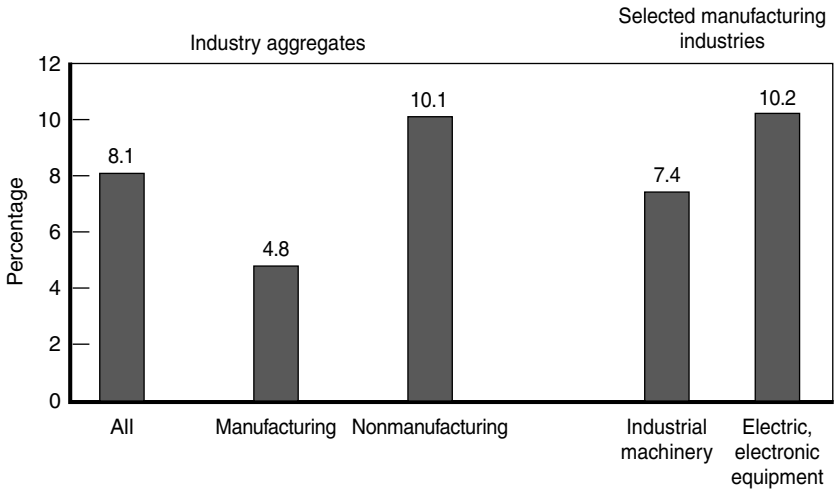
Measuring Globalization in California

California has less outward and inward foreign direct investment, more manufactured exports, and probably more services exports relative to the size of its economy than does the rest of the United States. Its gateway services are different from those provided in other states in that a much higher proportion of trade through California ports moves by air than by sea or land.

Outward Foreign Direct Investment

FDI, cross-border investment for the purpose of running a business, is carried out mostly by multinational enterprises. California outward FDI occurs when a California company opens or buys an establishment in a foreign country. In 1998, the latest year with available data, 8 percent of all U.S.-owned foreign affiliates that could be linked with a state were California-owned (Figure S.1). This is a lower proportion than California's overall share of the U.S. economy.

Although California's total outward FDI is low, outward direct investment by California firms is particularly strong in two more dynamic areas of FDI: investment in nonmanufacturing industries and investment in manufacturing industries that use production-sharing, which is the manufacture of different components and assembly in



SOURCE: U.S. Department of Commerce (2001a).

Figure S.1—California-Owned Foreign Affiliates as a Percentage of U.S.-Owned Foreign Affiliates, 1998

different locations under the control of one multinational enterprise network. This form of production is especially prominent in technology industries, such as industrial machinery and electric and electronic equipment. California outward FDI is also stronger in Asia, the site of much production-sharing, than is the outward FDI of the rest of the United States.

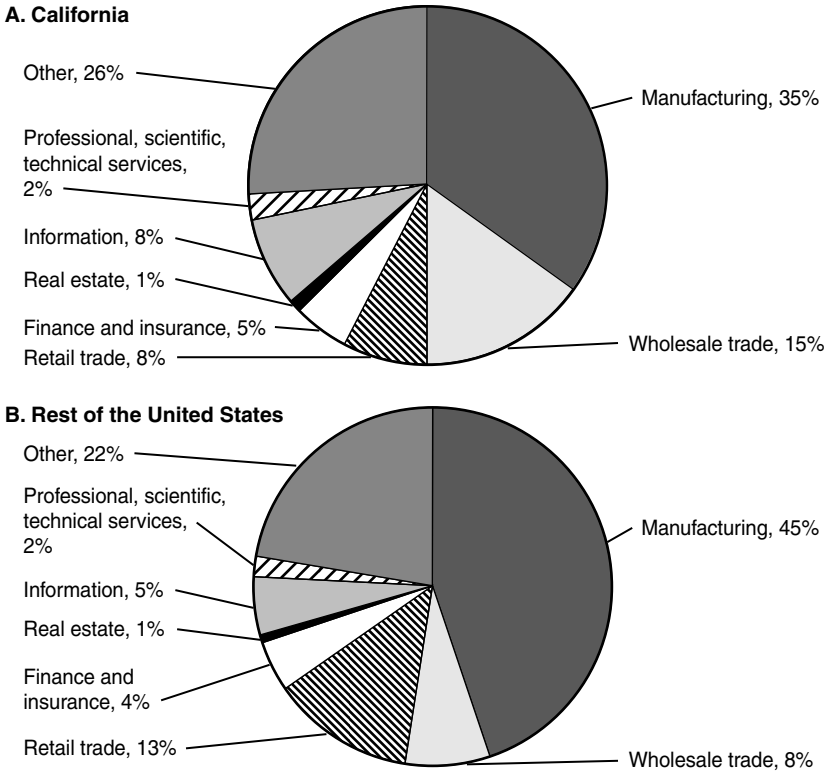
Inward Foreign Direct Investment

Inward FDI in California occurs when a foreign company opens or buys an establishment in California. As with outward FDI, inward FDI in California is low relative to the size of the economy, but it takes place in sectors that are the more recent centers of interest in the spread of multinationals.

Foreign affiliates in California owned $116 billion worth of property, plant, and equipment (PPE) in California in 1999—the highest level of PPE ownership by foreign affiliates in any state—and employed 639,000 workers—again, the highest level. However, that level of PPE ownership amounted to only 9.4 percent of total California

gross state product (GSP), one measure of the size of the economy, well below 11.8 percent for the rest of the United States. Employment in foreign firms totaled 4.6 percent of California employment, slightly below the 4.7 figure in the rest of the United States.

The industrial mix of California's inward FDI is quite different from that of the rest of the United States (Figure S.2). For example, California has a much lower share of foreign-affiliate manufacturing employment. Whereas California's overall share of manufacturing employment relative to total employment is slightly lower than in the rest of the United States (13.7 percent compared to 14.5 percent), its share of manufacturing



SOURCE: U.S. Department of Commerce (2001d).

Figure S.2—The Distribution of Employment in Foreign Affiliates, by Industry, 1999

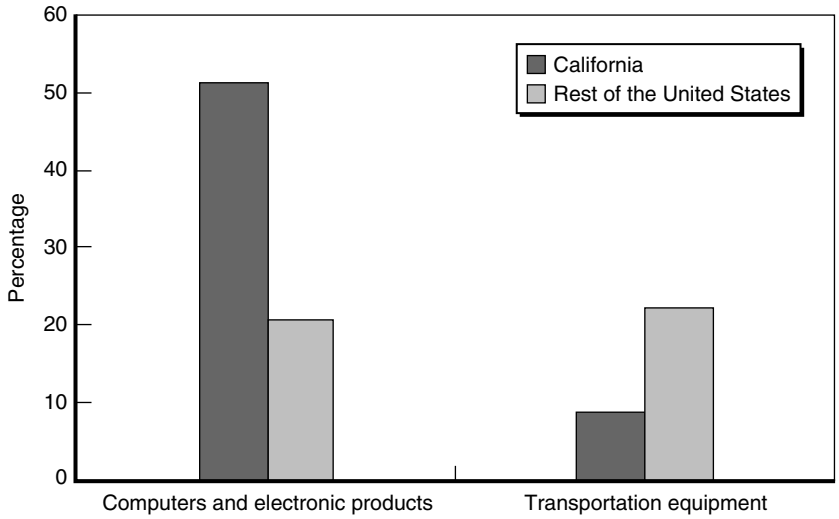
employment in foreign-invested firms is significantly lower (35 percent compared to 45 percent). However, California has a higher share of employment in wholesale trade; information industries; professional, scientific, and technical services (2.4 percent compared to 1.9 percent); and a group called other industries. Information industries include publishing, motion picture and sound recording, broadcasting and telecommunications, and information services and data processing. The category "other industries" includes agriculture, mining, utilities, construction, transportation and warehousing, and miscellaneous services.

Merchandise Trade

In contrast to FDI, California exports more manufactured goods than does the rest of the United States, relative to the size of the respective economies. California manufacturers also export a higher proportion of their output (28 percent, according to one recent data source) than do manufacturers in the rest of the United States (20 percent). In addition, California merchandise exports are heavily tilted toward high-technology industries (Figure S.3). Of the $98 billion worth of manufactured goods that started their export journey in California in 2001, the top industry for California—computers and electronic products—constituted 51 percent. In contrast, transportation equipment—the top industry for the rest of the United States—constituted only 22 percent of that region's manufactured exports. Finally, although California agriculture exports a high proportion of its output, between 16 and 19 percent, this proportion is about the same for agriculture in the rest of the United States.

Services Trade

Services exports include all purchases in California by foreign travelers; fees paid to California's airports and seaports by foreign airlines and shipping lines; royalties and license fees paid by foreigners to California companies, for example, for software; fees paid for the right to show Hollywood movies; and the purchases by foreigners of other services produced by California firms. Services imports are all of the above when done by Californians in payment to foreigners.



SOURCE: Massachusetts Institute for Social and Economic Research (2001, 2002).

Figure S.3—Industrial Mix of Manufactured Exports, 2001

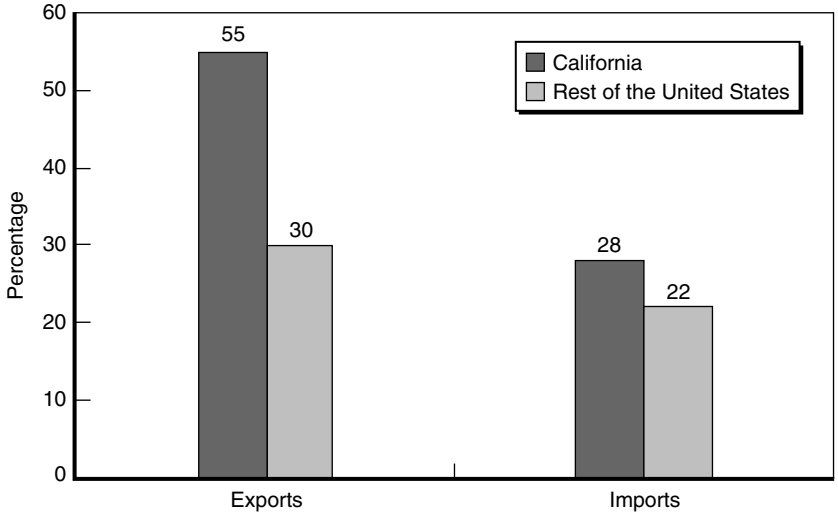
The rapid growth of services trade is a new phenomenon in the world economy. No direct measures of services trade by California exist, but estimates indicate that California's private economy generates a higher proportion of private services exports than does that of the rest of the United States. Specifically, private services exports as a percentage of the private California economy measured 3.5 percent in 1998 and 3.3 percent in 1999, compared to 3.1 percent in both years for the rest of the United States. By this estimate, California services exports were higher than the total exports from California's second- through seventh-leading goods-exporting industries.

Ports

The final measure of the globalization of the state's economy is port activity, which records merchandise exports and imports by U.S. and foreign companies through California trade gateways. Benefits to hosting ports include the salaries and fees that they generate, as well as the business they attract, including logistics and transport firms and

certain manufacturers. Costs include traffic congestion and environmental impacts, such as ship and truck pollution.

Although California's two biggest ports in terms of value of merchandise handled are the seaports of Los Angeles and Long Beach, the state's two biggest export gateways in terms of value of exports handled are San Francisco International Airport and Los Angeles International Airport. A much higher proportion of trade flows through California gateways by air, rather than by sea or land, than in the rest of the United States (Figure S.4). In addition, a much higher proportion of Asia trade flows through California ports than through ports in the rest of the United States.



SOURCE: Massachusetts Institute for Social and Economic Research (2001, 2002).

Figure S.4—Air Trade Through California Ports and Other U.S. Ports, 2001

Implications of California's Pattern of Globalization

The level of globalization of the California economy varies according to the measure. California's economy has lower levels of both inward and outward FDI relative to its size than does the economy of the rest of the United States. In contrast, it has a higher proportion of goods

exports and a higher proportion of services exports. Californians purchase imports as intermediate inputs and as final-use products in about the same proportions as businesses and people in the rest of the United States. Finally, California services a higher proportion of trade by air than does the rest of the United States.

Although the level of globalization differs depending on the measure used, there is a certain consistency to California's pattern of globalization. California's economy is most globalized in the aspects of the international economy that are at the leading edge of trends in globalization. The world is moving toward more production-sharing and California is part of this movement with its outward FDI in Asia and its vast goods exports in the computer industries. The world is moving toward greater trade in services, and California is part of this movement with its high level of services exports. Goods are increasingly moved by airplane rather than ship, and California is part of this trend with its ports serving a higher proportion of air trade relative to total trade than ports in the rest of the country.

Current state policy focuses on increasing merchandise exports and inward direct investment to strengthen the California economy and create jobs. Yet the economy depends on other aspects of globalization as well, including outward FDI, merchandise imports, and services trade. The state might broaden its policy to consider how these other aspects of the global economy can be used to help the state economy. With the growth of production networks, for example, one avenue might include helping California firms identify appropriate partners and suppliers abroad in addition to helping foreign firms find appropriate partners in California.

State policymakers also might consider whether they have a role in port planning and infrastructure provision. Ports bring both benefits and costs to California's economy, and even smaller ports affect areas beyond their immediate location, yet much port planning takes place at the local level. Furthermore, although the ports in general are self-financing, the state might consider whether state assistance makes economic sense.

The state can also refine its role in export promotion. Merchandise export figures used for policy planning actually are not meant to

represent production in California for export. Therefore, the state might consider other means, such as periodic surveys, to better understand both the level and destination of California goods trade.

Finally, increased international economic exchange likely has contributed to widening income inequality, although the extent to which it has done so is a source of continuing debate. The effects of trade cannot easily be separated from the effects of other economic trends, in particular technical change that favors employment of high-skilled workers. However, the policy prescriptions for mitigating widening income gaps are the same in the cases of both trade-induced change and technology-induced change. These are to improve the educational opportunities and the education of the population and to maintain a social safety net for workers displaced by economic change.

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1. Introduction

The world has seen an explosion of cross-border economic activity since the end of World War II and especially in the last 20 years. Goods and services trade, the establishment of foreign subsidiaries by companies, and the purchase of foreign equities and bonds have all grown faster than world gross domestic product. Along with increased immigration, the exchange of ideas through improvements in transportation and communications, the proliferation and deepening of trade treaties, and the harmonization of institutions, these cross-border transactions have come to be known as globalization.

Globalization is usually measured at the national level. Nations set border policies, collect tariffs, and regulate investment. But in a large country such as the United States, it is possible to ask about the globalization of subnational units, such as states and metropolitan areas, especially since most have their own programs dealing with the global economy. In fact, current California policy focuses on increasing California exports and attracting foreign companies to operate businesses here.

This report looks at California's interactions with the global economy. Merchandise exports have been the most visible sign of those interactions, but sales of goods overseas are not the only way the state interacts economically with the rest of the world and are not even necessarily the most important way. California firms invest across the globe and foreign firms invest in California. California businesses and consumers buy goods and services from around the world and foreigners buy services from California—from university education to tourism to the right to show films. Foreign shippers, airlines, and truckers crowd California's seaports, airports, and land border crossings to move people and products from and to the United States.

On some dimensions, the level of globalization in California is low or only average compared to that of the rest of the United States. On

others, it is high—California has long been the largest exporting state, although Texas exports overtook California exports during 2002. A common element among the different measures of globalization, however, is that California's economy lives on the leading edge of globalization, much as California society lives on the leading edge of social and cultural trends. The California economy is highly active in newer forms of globalization. These include the production of services exports—a form of international trade that has been expanding rapidly—and a strong use of air rather than sea as a mode of providing international transport services. They also include involvement in international production-sharing—carving up the manufacturing process into different stages that take place at different locations around the world—a phenomenon that has grown rapidly during the past two decades.

Defining Globalization at the State Level

Most discussions of globalization focus on three general aggregates: foreign direct investment (FDI), trade, and finance.[1] This report focuses on the globalization of the California economy along the following dimensions:

- Establishment by California firms of subsidiaries in foreign countries (outward FDI).
- Establishment by foreign firms of subsidiaries in California (inward FDI).
- The sale of goods by Californians to foreign residents and the purchase of goods by Californians from foreign residents (merchandise exports and imports).
- The sale to foreigners and purchase from foreigners of services as diverse as university education and movie rights (services exports and imports).
- The transport and trade facilitation activity at California's airports, seaports, and land borders (port services).

[1]Appendix A gives a sample of alternative definitions.

Defining globalization in this manner contrasts with the standard focus of state policies around the United States—the promotion of merchandise exports and the attraction of inward FDI. The wider view is justified because along with exports and inward FDI, these other forms of globalization all affect the standard of living of Californians. And they all are either influenced by the varied business climates of the state and its industrial structure or directly influenced by state and local policies.[2]

A number of other measures are omitted for one of three reasons—because their link to state policy and their effect on the state's economy are more tenuous than the above measures, because of data limitations, or because they are discussed in other reports by the Public Policy Institute of California. For example, international financial flows are difficult to analyze at the state level because in most cases they are not produced in a specific place but instead are aggregations of capital from around the country or world. The role of international finance in the state economy is not negligible. California has a number of private portfolio management institutions that invest internationally, the California Public Employees' Retirement System (CalPERS) and the California State Teachers' Retirement System (CalSTRS) both make foreign portfolio investments, and immigrants send remittances to their families in their home countries. However, these activities have less visible effects on the economy than do FDI, trade, or ports.

Another aspect of globalization that has attracted attention is immigration and labor flows across borders. Because the Public Policy Institute of California has analyzed immigration issues elsewhere, this report will not address them.[3] However, it is worth mentioning that California is a remarkably immigrant-rich state. According to data from the 1998 Current Population Survey, 24 percent of all residents of California were foreign-born, compared to less than 8 percent for the rest of the United States. In addition, the overwhelming number of immigrants in California came from Mexico. About 10 percent of the

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[2]For a discussion of California's numerous business climates, see Dardia and Luk (1999).

[3]See Johnson (1996), Reyes (1997), Johnson et al. (1999), Hill and Johnson (2002), Grogger and Trejo (2002), and Reyes, Johnson, and Van Swearingen (2001).

state's nonnative population was born in Mexico, compared to less than 2 percent for the rest of the United States.[4]

A final aspect of globalization that will not be treated here is the growth of international contracting relationships—an alternative to FDI as a means for firms to operate abroad. In FDI, a parent firm owns the foreign facility in which it carries out production, marketing, or other activities. In contracting, the parent firm hires another firm to carry out these tasks. Contracting is very prominent in apparel production and has become important among high-technology firms. Unfortunately, state-level international contracting data are not easily accessible.

In contrast to these omitted measures, a dimension not normally included in discussions of globalization but relevant at the state level is gateway services—the ports and the role they play as a conduit for international trade. At the national level, it matters little where imports enter or exports leave. However, exporters and importers have a large number of ports to choose from in the United States, and port activities can have large effects on local economies. This report analyzes the size and nature of the flow of goods through California ports as opposed to ports in other states.

Why Understand Globalization?

Globalization, however defined, has both beneficial and negative effects at the national and local levels. The positive effects include economic growth and the alleviation of poverty.[5] Many mechanisms combine to bring about these results, including the possibility for businesses to lower average production costs by producing for larger markets, the ability of workers and investors to devote their efforts to

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[4]1998 data are presented to stay consistent with the rest of the data in this chapter. According to the more accurate counts of the 2000 Census, 26 percent of California's population in 2000 was foreign-born, whereas that figure was 9 percent for the rest of the United States. California had 28.5 percent of all immigrants, but only 10 percent of all native-born U.S. residents. The source for the 1998 data is the U.S. government's DataFERRETT data retrieval system, available at http://ferret.bls.census.gov. The source for the 2000 data is the U.S. Census Bureau, http://www.census.gov/Press-Release/www/2002/dp_comptables.html.

[5]On growth, see Frankel and Romer (1999) and Rodrik (1997). On poverty, see Dollar and Kraay (2001).

more profitable activities made possible by worldwide opportunities and markets, the introduction of new technologies through imported capital goods, and the exchange of ideas. Ports bring benefits in the way of services to exporters and importers, jobs at the ports themselves, and jobs at transportation and logistics firms.

The negative effects include increased income inequality in economically advanced countries such as the United States and deindustrialization in the sense of raising the overall share of nonmanufacturing activity in the economy.[6] These come about through the increased availability of goods made by lower-skill labor in poorer countries, such as China, and the ability of businesses to move their production facilities abroad, through either FDI or contracting. Ports bring costs in terms of infrastructure demands, transportation congestion, and pollution.

All of these effects—both positive and negative—bring about changes in industrial structure. Regions and nations specialize in certain activities and leave other activities to other countries. For example, the United States has become the worldwide innovator in high-technology items whereas the U.S. shoe industry has all but disappeared.

Because globalization can have such widespread effects, there is room for policy to enhance the benefits and mitigate the costs. California implements its international economic policy through a number of different avenues, as shown in Table 1.1. Several recent studies have explored developing a state international trade policy, among them Vucinich (1993), Kroll et al. (1998), Collier (1999), and Koehler (1999). Appendix B summarizes their main findings.[7]

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[6]On increased income inequality, see A. T. Kearney and *Foreign Policy* (2001), Sachs and Shatz (1994), and Wood (1994). On deindustrialization, see Sachs and Shatz (1994), Wood (1994), and Saeger (1997). Another possible effect is an erosion of the bargaining power of lower-skilled and industrial workers (Rodrik, 1997).

[7]There are also continuing efforts to understand globalization at the substate level, for example, through a project headed by Gregory F. Treverton at the Pacific Council on International Policy that attempts to map the local implications of the global economy in five western city-regions: Seattle, San Diego–Baja California, Silicon Valley, the Wasatch Front in Utah, and Los Angeles. So far the project has resulted in two publications, Feinberg (2001) and Fry and McCarlie (2002).

Table 1.1

State Involvement in the International Economy

The Executive Branch
- **Technology, Trade, and Commerce Agency**
- International Trade and Investment Division
  - Office of Export Development
  - Office of Business Investment (formerly Office of Foreign Investment)
  - Overseas Offices (Argentina, China, Germany, Hong Kong, Israel, Japan, Korea, Mexico, Singapore, South Africa, Taiwan, United Kingdom)
  - California Export Finance Office
  - California World Trade Commission
- Division of Tourism
  - Tourism Development Representatives Abroad (Australia, Brazil, Germany, Japan, Mexico, United Kingdom)
  - California Tourism Commission
- **California Department of Food and Agriculture**
- California Agricultural Export Program
- **California Energy Commission**
- Energy Technology Export Program
- **California Environmental Protection Agency and Technology, Trade and Commerce Agency**
- California Environmental Technology Partnership
- **California Secretary of Foreign Affairs**

The Legislative Branch
- **California Senate**
- Committee on Banking, Commerce and International Trade
  - Subcommittee on the Americas
  - Subcommittee on Asia Trade and Commerce
  - Subcommittee on California-European Trade Development
- Select Committee on Border Issues
- Select Committee on International Trade Policy and State Legislation
- Senate Office of International Relations
- **California Assembly**
- Committee on Jobs, Economic Development, and the Economy
  - Subcommittee on International Trade
- Committee on Utilities and Commerce
- Speaker's Office of International Affairs and Protocol
- **California Senate and Assembly**
- Latino Legislative Caucus

Other State Involvement
- **California Community Colleges**
- California's Centers for International Trade Development (14)
- California-Mexico Trade Assistance Centers (18)
- **Technology, Trade and Commerce Agency, U.S. Small Business Administration, and California Community Colleges**
- Small Business Development Centers (30)
- **California Secretary of State**
- International Business Relations Program

Table 1.1 (continued)

SOURCES: State and agency web sites and staff members.

NOTES: The list does not include nonprofit efforts, such as the four World Trade Centers, or nonstate governmental agencies, such as the ports, or local efforts. The table is current as of December 1, 2002. Changes may have occurred because of California's budget deficit.

This report has a different focus. Rather than working out a trade policy for the state, it contributes context for policy by more fully surveying the globalization landscape in California. This survey can give perspective on California policy options but cannot conclusively lead to a comprehensive policy.

In developing a state international trade policy, it is also important to keep in mind that California's room for policy maneuver is limited in two ways. First, most trade policy, in particular trade barriers and trade agreements, is set at the national level. California can contribute to national policy through its Congressional delegation but cannot use these two instruments in most cases.[8] Second, many aspects of globalization are driven not by policy but by technological and other trends. For example, governments have lowered tariffs worldwide over the past 50 years, but changes in transportation and communications technology have also brought about increasing trade, as has the rising income of many nations.

To describe the level of globalization within the California economy, the report calculates certain measures and then compares them to those of the rest of the United States. When possible, it also compares them to a group of 11 East Coast states along with the District of Columbia.[9] The East Coast comparisons are used because California has geographic

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[8]Haveman (2001) reports that regarding national policies, state officials should encourage federal officials to focus on negotiating decreased trade barriers with Asian countries.

[9]The idea of an "Eastcoastia" appears in Lyon (1995). However, this report includes Rhode Island and South Carolina, which Lyon excludes. States included in the East Coast comparisons in this report are Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, District of Columbia, Virginia, North Carolina, and South Carolina.

characteristics favorable to international trade—it has a long coastline with good ports and is closer to a major economic center (Asia) than is much of the rest of the United States. Many states, such as Idaho, Arkansas, or West Virginia, do not share these characteristics and so their globalization profile likely will be much different. However, the East Coast does share these characteristics. California stretches from a longitude of 42 degrees north to less than 33 degrees north, and the East Coast from Massachusetts to South Carolina also stretches from a bit more than 42 degrees to a bit less than 33 degrees (DK Publishing, 1999). Although the East Coast region is, in general, wider than California, it also has a long coastline with good ports and is close to a major economic center (Europe).

A First Cut at Measuring Globalization in California

Given these possibilities for measuring California's economic globalization, how does the state measure up? Tables 1.2 and 1.3 give a brief comparison of the globalization of California's economy to that in the rest of the United States, including data on California's gross state product (GSP). All figures are for 1998, as that is the only year for which all figures are available. Later chapters will give more complete and recent information as well as trends in some cases.

This discussion will start with FDI, because that is less well analyzed at the state level yet is more emblematic of what people think about when they discuss globalization. FDI is transborder investment for the purpose of controlling a business. Typically, it is defined by a parent-subsidiary or parent-branch relationship in which the parent is in the home country and the subsidiary or branch is in the foreign country and is at least 10 percent owned by the parent. Outward FDI is investment from the home country, from the home country's point of view, whereas inward FDI is investment into a host country, from the host country's point of view. When Californians speak of a California company setting up or buying a plant in Mexico, they are speaking of outward FDI. When Californians speak of a Japanese company setting up or buying a business in California, they are speaking of inward FDI.

Table 1.2

The Globalization of the California Economy, 1998: Foreign Direct Investment

A. California-Origin Outward Foreign Direct Investment

	Total	Manufacturing	Nonmanufacturing
No. of affiliates	1,774	386	1,388
Share of U.S. total (%)	8.1	4.8	10.1
California GSP share (%)	12.9	11.1	13.2

B. Inward Foreign Direct Investment

	Employees in Foreign-Owned Firms		Property, Plant, and Equipment Owned by Foreign-Owned Firms	
	No. (1000s)	% of All Employees	Value ($ billions)	% of GSP
California	603.2	4.4	$103.7	9.2
Rest of the United States	5,029.8	4.5	$881.2	11.6

SOURCES: U.S. Department of Commerce (2000a, 2001a).

NOTE: Share of U.S. total given in Panel A shows California-origin affiliates as a percentage of all U.S. affiliates for which a state of origin can be identified.

Table 1.3

The Globalization of the California Economy, 1998: Trade

A. Merchandise Exports, by Value and as a Percentage of GSP

	California	Rest of the United States
Value ($ billions)	105.0	575.5
Percentage of GSP	9.3	7.5

B. Merchandise Trade Through California Customs Districts: Values, Share of U.S. Totals, and Rank Among Customs Districts

	Exports ($ billions)	Share (%)	Rank	Imports ($ billions)	Share (%)	Rank
Los Angeles	63.8	9.4	3	117.8	12.9	1
San Francisco	42.7	6.3	5	55.7	6.1	4
San Diego	9.8	1.4	19	16.5	1.8	17

SOURCES: Massachusetts Insitute for Social and Economic Research (2001, 2002).

State-level outward direct investment data are almost never released by the Bureau of Economic Analysis of the U.S. Department of Commerce. However, the bureau has provided a special extract giving the number of foreign affiliates owned by California firms, and these data are presented here for the first time (Table 1.2). The chapter on outward FDI will suggest ways to move from number of affiliates to more important variables, such as value of output and number of employees.

In 1998, 1,774 foreign affiliates listed a California company as their parent.[10] This number represented approximately 8.1 percent of all U.S.-owned foreign affiliates for which a state of origin could be identified. The ratio amounted to 4.8 percent for manufacturing affiliates and 10.1 percent for nonmanufacturing affiliates. In all three cases—total foreign affiliates, manufacturing affiliates, and nonmanufacturing affiliates—the California share of foreign affiliates was lower than the California share of the U.S. economy. This means that California's level of globalization, as measured by outward direct investment, was below that of the United States as a whole.

Inward direct investment statistics present similar results when compared to the size of the economy. By two prominent measures, California leads the nation in the level of inward FDI. In 1998, the number of California employees who worked for foreign-owned firms totaled 603,200, the largest for any state. In addition, the gross property, plant, and equipment owned by foreign firms in California totaled $103.7 billion, again the most of any state. These numbers seem large, but they *should* be large, as California is the largest economy among the 50 states, the District of Columbia, and Puerto Rico. Yet when compared to the size of the state's economy, FDI in California is actually at or below the average of the United States as a whole. Out of all employees in California in 1998, a bit more than 4.4 percent worked for foreign firms. In the rest of the United States, that share was almost 4.5 percent. Likewise, foreign-owned gross property, plant, and equipment amounted to 9.2 percent of the value of the California economy, as

[10]The counts for California and rest-of-U.S. affiliates excluded affiliates with less than $3 million in assets, sales, and net income.

measured by gross state product. But for the rest of the United States the figure was 11.6 percent.

As with inward FDI, California has a very high level of merchandise exports (Table 1.3).[11] In 1998, merchandise exports from California totaled almost $105 billion, or more than 9 percent of California GSP. Exports were only 7.5 percent of GSP for the rest of the United States, so on this dimension California is more globalized than is the rest of the United States. Similar official figures for imports terminating in California are not available, but estimates are possible. If 1998 California imports relative to GSP resembled those for the United States as a whole, the state would have purchased about $121 billion worth of goods from other countries, some $16 billion more than the value of exports California sold to other countries.[12] Likewise, there are no official statistics on services exports or imports by state. However, an estimate based on the structure of the California economy and other data indicates that California had private services exports of $34.6 billion in 1998, about 3.5 percent of California private GSP. Services exports from the rest of the United States, by this estimate, were 3.1 percent of private GSP, well below California's level.

One final measure of the globalization of the California economy is the activity at the state's airports, seaports, and land border crossings, some of the busiest in the world. California and Texas serve as the main gateways to Mexico, and California and Washington serve as the main gateways to Asia. Both foreign regions trade a great deal with the United States.

California's leading ports in terms of total trade are the seaports of Long Beach and Los Angeles, which in 1998 were the sixth- and eighth-busiest ports in the world in terms of shipping container traffic. However, California's leading export gateways are its airports, at least in

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[11]The state export data have well-known problems, and the merchandise trade chapter will discuss these problems more fully. For now, they are adequate to represent California exports versus exports from the rest of the country.

[12]Exports are measured on the basis of the 1987 Standard Industrial Classification and have been increased through an estimate that divided exports with no designated state origin among the states (Massachusetts Institute for Social and Economic Research, 2001, 2002). Imports are imports for consumption measured on a CIF (cost, insurance, freight) basis.

dollar terms.[13] In 1998, Los Angeles International Airport handled almost 5 percent of U.S. merchandise exports and was the fourth-busiest export port in the nation. San Francisco International was the fifth, handling about 4.5 percent of the nation's exports.

Data from customs districts provide another way to understand California's interactions with the international economy. U.S. ports are grouped into customs districts, and California has three out of 47 such districts: Los Angeles, San Francisco, and San Diego. Of these, Los Angeles was number three in exports and number one in imports in 1998, and San Francisco was number five in exports and number four in imports. San Diego was 19th in exports and 17th in imports. Almost 20 percent of U.S. merchandise trade passed through California customs districts in 1998, and that portion has grown since then.[14]

This brief description of economic globalization suggests three patterns. Relative to the size of its economy, California lags the rest of the nation in FDI, leads the rest of the nation in merchandise and services exports, and leads the rest of the nation in port activity. In short, the level of globalization in California cannot be characterized as only high or only low. However, as succeeding chapters will show, the globalization of the California economy takes place largely in the newest forms of globalization—such as services trade and trade by air—rather than older forms, such as direct investment in manufacturing affiliates or trade in commodities.

The rest of the report proceeds as follows. Chapter 2 reports more fully on outward FDI and shows that it is most prominent in two of the newest forms of FDI—investment in nonmanufacturing industries and in those manufacturing industries that use production-sharing extensively. Chapter 3 focuses on FDI in California and shows that although foreign investors do not favor California as a manufacturing

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[13]See O'Connell (2001a, 2001b) and Shatz (2001) for discussions.

[14]Rankings are based on general imports and total exports as opposed to imports for consumption and domestic exports.

location, they do favor it for wholesale trade, information industries, and professional, scientific, and technical services.[15]

Chapter 4 then explores California merchandise exports and imports. It finds that California manufacturers export more of their output than do manufacturers from the rest of the United States. Furthermore, California exports are extremely concentrated in high-technology industries. Chapter 5 discusses services trade. Estimates indicate that California sells more services exports, relative to the size of its economy, than does the rest of the United States. Chapter 6 explores trade through the ports of California. Although the seaports of Los Angeles and Long Beach handle the most trade, the airports of Los Angeles and San Francisco handle the most exports by value. Chapter 7 concludes the report and discusses implications of the findings for California policy. Appendices report how other authors have viewed globalization, what previous reports have said about California international economy policy, and data sources. A separate, more detailed data appendix is available upon request from the author.[16]

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[15]Information industries include publishing, motion picture and sound recording industries, broadcasting and telecommunications, and information services and data processing.

[16]Miloslavsky and Shatz (2003).

2. Outward Foreign Direct Investment by California Companies

One of the most prominent features of recent globalization has been the spread of multinational enterprises. In 1960, the value of all multinational enterprise investment—the stock of FDI—totaled about 6 percent of world gross domestic product. By 2000, this figure was more than 20 percent.[1] Changes in technology, shipping costs, and the laws of many countries have allowed multinationals to establish subsidiaries in new locations and to set up new production-sharing relationships in which ideas and blueprints are generated in one country, components are made in another country, and final goods are assembled in a third country. Because of the important role multinationals have played in the expansion of the international economy, this report will start with an account of FDI by California firms.

Outward FDI has a number of effects on the economy. It can lower production costs, increase firm productivity, and increase the ability to sell to foreign markets, all three of which can contribute to firm growth. It can also provide a listening post in foreign markets regarding market conditions and serve as an avenue for technology transfer. And it can increase trade because a great deal of world trade flows through multinational networks. In some cases, though, by allowing firms to transfer tasks abroad, it can also decrease firm employment in the home country and reduce the bargaining power of workers in the home country.

This chapter will start with a brief profile of outward FDI by California firms. It will then focus on three issues: (1) the level of

[1]United Nations Conference on Trade and Development (2002).

California's outward FDI, (2) the industrial distribution of California outward FDI, and (3) suggestions of the importance of production-sharing in California outward FDI.

A Profile of Outward FDI by California Firms

FDI is usually defined as investment across borders in an operating establishment. It differs from portfolio investment, or investment in foreign equities and bonds, in that direct investment is made for the purpose of controlling the foreign establishment and producing a product or service. Investors are known as parent companies and are individuals, trusts, or multinational enterprises, whereas the objects of their investment are known as foreign affiliates and can be subsidiaries, branches, or real estate holdings.[2]

In 1998, the latest year for available data, California firms owned 1,774 nonbank foreign affiliates, or about 8.1 percent of the 21,806 affiliates that could be linked with a home state. An additional 1,937 affiliates could not be linked with a home state (Table 2.1).[3] Although a popular image of FDI is one in which foreign affiliates are manufacturing plants, California and the United States as a whole actually have many more investments in nonmanufacturing industries. This is especially true of California. The state's firms owned only 4.8 percent of all U.S. foreign manufacturing affiliates and 10.1 percent of all U.S. foreign nonmanufacturing affiliates.

The U.S. data on FDI usually divide that investment into 11 industry groups and three aggregates: all industries, manufacturing industries, and nonmanufacturing industries (Table 2.1). California firms owned more than 10 percent of all U.S. affiliates in electric and electronic equipment—a manufacturing sector—and in four

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[2]This definition leaves out a number of other types of cross-border business alliances, such as contracting arrangements, franchising, and intellectual-property arrangements involving royalties and license fees. Royalties and license fees are discussed in the chapter on services trade. Contracting and franchising are omitted from this report because of a lack of data. However, they are certainly part of California's globalization story, especially since a great deal of worldwide apparel production takes place through contracting networks rather than through direct-investment networks.

[3]These totals are for nonbank foreign affiliates that have more than $3 million worth of assets, sales, or net income.

Table 2.1

California Foreign Direct Investment, by Industry

Industry	California Affiliates		Rest of U.S. Affiliates
	% of U.S. Affiliates	Share by Industry (%)	Share by Industry (%)
All industries	8.1	100.0	100.0
Manufacturing	4.8	21.8	38.1
Food and kindred products	0.9	0.4	4.0
Chemicals and allied products	4.5	5.1	9.5
Primary and fabricated metals	1.2	0.5	3.2
Industrial machinery and equipment	7.4	4.2	4.7
Electric and electronic equipment	10.2	4.8	3.8
Transportation equipment	0.9	0.3	2.8
Other manufacturing	5.3	6.5	10.2
Nonmanufacturing	10.1	78.2	61.9
Petroleum	10.4	9.7	7.4
Wholesale trade	11.6	29.7	20.0
Finance, insurance, and real estate except banking	5.2	9.8	15.7
Services	11.3	17.1	11.8
Other industries	13.2	12.0	7.0

SOURCE: U.S. Department of Commerce (2001a).

nonmanufacturing sectors—petroleum (which includes some manufacturing), wholesale trade, services, and "other industries" (which includes agriculture, mining, construction, transportation, communications, utilities, and retail trade).

The final two columns of Table 2.1 compare the industry distribution of California affiliates and affiliates owned by firms from the rest of the United States. The California concentration on nonmanufacturing industries is even more apparent here. Although about 62 percent of all affiliates owned by firms in the rest of the United States are in nonmanufacturing industries, slightly more than 78 percent of all California affiliates are in those industries. Wholesale trade is by far the most dominant industry for California affiliates, weighing in at almost one-third of all affiliates, with the services sector next.

Not only is California different from the rest of the United States in the industrial structure of its outward FDIs, it is different in the

destinations of those investments (Table 2.2). The two regions in which California investment differs most from that of the rest of the United States are Latin America and Asia. Although California firms own 8.1 percent of all U.S. affiliates, they own only 6.1 percent in Latin America but 9.8 percent in Asia. Although firms from the rest of the United States locate almost 17 percent of their affiliates in Latin America and 22 percent in Asia, California firms locate 12 percent of their affiliates in

Table 2.2

California Foreign Direct Investment by Region

	California Affiliates		Rest of U.S. Affiliates
	% of U.S. Affiliates	Share by Region (%)	Share by Region (%)
All industries			
All countries	8.1	100.0	100.0
Canada	7.5	7.0	7.6
Europe	8.1	48.4	48.9
Latin America	6.1	12.2	16.7
Africa	8.2	2.7	2.7
Middle East	10.5	2.1	1.6
Asia Pacific	9.8	27.1	22.1
Manufacturing			
All countries	4.8	100.0	100.0
Canada	3.6	6.0	8.1
Europe	4.8	47.7	48.3
Latin America	3.6	12.7	17.3
Africa	1.1	0.5	2.3
Middle East	5.3	1.3	1.2
Asia Pacific	6.6	31.9	22.8
Nonmanufacturing			
All countries	10.1	100.0	100.0
Canada	10.0	7.3	7.4
Europe	9.9	48.6	49.3
Latin America	7.7	12.0	16.2
Africa	11.4	3.3	2.9
Middle East	12.4	2.3	1.8
Asia Pacific	11.8	25.8	21.6

SOURCE: U.S. Department of Commerce (2001a).

NOTE: Numbers may not sum to 100 percent because of rounding.

Latin America and 27 percent in Asia.[4] These differences are particularly striking regarding manufacturing affiliates. Firms from the rest of the United States have located 23 percent of their affiliates in Asia, but firms from California have located 32 percent of their affiliates there.

These differences show up, although somewhat less strongly, in the individual country pattern of investment (Table 2.3). There is significant overlap among the top-ten destination countries—the United Kingdom is the top destination for each. However, Hong Kong and Singapore make California's top ten, and Mexico makes the top ten for the rest of the United States.

It may seem surprising that Mexico does not appear in California's top ten of affiliate counts. In part, this stems from California's geography. Adjacency and distance are two (although not the only) determinants of FDI. The Mexico-Texas border is far longer than the

Table 2.3

Top Country Locations for Affiliates, California and the Rest of the United States, as a Percentage of Total Affiliates

California	Share (%)	Rest of the United States	Share (%)
United Kingdom	10.4	United Kingdom	10.3
Canada	7.0	Canada	7.6
France	6.2	Germany	6.1
Germany	5.6	France	5.4
Netherlands	5.2	Netherlands	4.9
Japan	4.5	Japan	4.1
Australia	4.1	Australia	3.9
Hong Kong	3.4	Mexico	3.8
Singapore	3.0	Italy	3.5
Italy	2.9	Belgium	2.7

SOURCE: U.S. Department of Commerce (2001a).

NOTES: Despite the differences, the two series are highly correlated. For a sample of 57 countries, the shares have a correlation coefficient of 0.98, significant at better than 0.001.

[4]Other regions in which California is strong are Africa and the Middle East, particularly in nonmanufacturing.

California-Mexico border, and that increases the likelihood of investment to Mexico from Texas firms. Additionally, the main trade routes between the United States and Mexico run through Texas, and so companies that want to carry out production-sharing—with frequent trade—are more likely to be located near those main trade routes. The top three customs districts through which U.S.-Mexico trade flowed in 2002 were Laredo, Texas, El Paso, Texas, and San Diego, California, in that order. The Laredo district accounted for slightly more than 48 percent of U.S.-Mexico trade and the El Paso district accounted for 17 percent, whereas the San Diego district accounted for a bit less than 13 percent.[5] Finally, Mexico City, the economic center of Mexico, is far closer to Texas and many points in the southern United States than it is to California—934 miles to Dallas and 1,556 miles to Los Angeles.

The geographic pattern of outward FDI mirrors the geographic pattern of California exports, as will be seen in Chapter 4. California exports relatively more to Asia and relatively less to Latin America than does the rest of the United States. This pattern suggests that geography plays an important role in the location of a state's international activity. The main trade routes to Asia are shorter from California than from the rest of the United States, and the main trade routes to Latin America are shorter from much of the rest of the United States than from California.

The Low Level of Outward Direct Investment

Although California firms are certainly active in some countries and regions, on the whole California has a low level of FDI relative to the size of the economy. Table 2.4 shows two indicators of potential investment—the amount of economic activity in the state and the number of parent companies in the state.

Economic activity, reflected in the table by GSP, should relate to outward FDI in that more business activity in the state would lead to companies that are able and willing to invest abroad. California's GSP relative to total U.S. GSP measured 12.9 percent in 1998, but the number of foreign affiliates owned by California firms measured only 8.1 percent of the U.S. total. However, different industries have different

[5]See Chapter 6 for a more detailed discussion of customs districts.

Table 2.4

Sources and Results of California Direct Investment as a Percentage of U.S. Totals

Industry	Potential Parents and Parents: GSP	Potential Parents and Parents: Parents	Affiliates
All industries	12.9	10.3	8.1
Manufacturing	11.1	9.8	4.8
Food and kindred products	11.0	2.0	0.9
Chemicals and allied products	5.4	8.8	4.5
Primary and fabricated metals	6.5	1.2	1.2
Industrial machinery and equipment	15.3	14.0	7.4
Electric and electronic equipment	17.5	21.4	10.2
Transportation equipment	7.9	5.2	0.9
Other manufacturing	11.2	8.2	5.3
Nonmanufacturing	13.2	11.0	10.1
Petroleum	11.8	7.8	10.4
Wholesale trade	12.8	11.3	11.6
Finance, insurance, and real estate except banking	15.9	10.6	5.2
Services	14.4	12.6	11.3
Other industries	12.1	11.0	13.2

SOURCES: For GSP, U.S. Department of Commerce (2001c); for parents, U.S. Department of Commerce (2001b); and for affiliates, U.S. Department of Commerce (2001a).

propensities to engage in FDI, and so the table also shows the share of GSP by industry. In every industry except one, California's share of U.S. foreign affiliates was lower than its share of GSP. The exception was "other industries," the grab-bag that includes agriculture, mining, construction, transportation, communications, utilities, and retail trade.

One reason for low outward FDI by California firms may be the age structure of California's headquarters establishments. If large California firms are younger than large firms from other states, they will have had less time to invest abroad. In addition, California firms may find advantages to keeping their business activity in the state, given the nature of that activity. In 1992, California companies had about as many establishments—a one-location business unit of a company—in state as did companies from other states. However, they had far fewer out-of-

state (but within-U.S.) establishments than did companies from other states (U.S. Census Bureau, 1997).

Another suggestion is given by the second column of Table 2.4, which shows California's share of the nation's parent companies. In 1998, that share was 10.3 percent, lower than the state's share of national product.[6] This pattern applies to nearly every industry except for chemicals and electric and electronic equipment. Headquarters firms make the decision to invest abroad, and it appears that California simply has fewer headquarters firms relative to its size. An analysis by the Bureau of Economic Analysis for 1991 (U.S. Department of Commerce, 1993a) revealed that slightly less than 11 percent of all parent companies in the United States were located in California, when California GSP totaled 13.8 percent of U.S. product. In contrast, New York hosted the most parent companies—315—or 14.7 percent of all parent companies, compared to a share of U.S. GSP of only 8.6 percent. Other top states with far more parent companies than their share of GSP included Illinois, New Jersey, Ohio, Pennsylvania, and Connecticut.

The Economic Census of the United States reported in 1997 that California hosted only 11.3 percent of all corporate, subsidiary, and regional managing offices in the United States (U.S. Census Bureau, 2000a). That same year, the state accounted for 12.7 percent of all U.S. GSP and 12.8 percent of all private U.S. GSP.

In 1998, the year of the FDI data in this chapter, California firms constituted only 11.2 percent of the 1998 Fortune 500—companies most likely to make direct investments. Moreover, this count was slightly skewed toward that list's smaller firms; California firms constituted 10 percent of the top 200 but 12.5 percent of the bottom 200. As in the 1991 parent-company list, New York outpaced California with 11.8 percent of all Fortune 500 companies, including 14.5 percent

[6]These data should be interpreted cautiously. Only about 60 percent of parent companies reported a headquarters state. This varied by industry. Only 45.8 percent of headquarters companies in primary and fabricated metals reported their state, and 76.3 percent of transportation equipment headquarters companies reported their state. However, the 10.3 percent figure is consistent with a separate tabulation done by the Bureau of Economic Analysis for 1991 (U.S. Department of Commerce, 1993a), in which California was home to about 11 percent of all U.S. parent companies.

in the top 200 and 10 percent in the bottom 200, a pattern opposite that of California's. Using a different system, the 1998 Forbes 500 shows a similar pattern. California firms constituted 11.8 percent of these companies, whereas New York firms constituted 12 percent, despite New York's much smaller economy. Once again, California companies were skewed toward the smaller firms within the group, with New York firms skewed toward the larger firms.

California's Focus on Nonmanufacturing

Although a popular image of FDI is one in which domestic companies set up manufacturing plants in low-wage countries, California's outward direct investment activities belie that image. More than three-quarters of all California affiliates are in nonmanufacturing industries, and of these nonmanufacturing affiliates, almost 38 percent are in wholesale trade. In general, affiliates in wholesale trade do not carry out production. Instead, they import goods—often from the United States but sometimes from elsewhere—and sell them in their host country market or export them to third markets.[7] Estimates of the actual business activity of California wholesale affiliates indicate that they are intensive importers from the United States and thus serve as one avenue for increasing U.S. exports. Although they constitute about 30 percent of all California affiliates, they buy 46 percent of all U.S. exports to California affiliates and sell only 10 percent of all goods and services imported by the United States from California affiliates.[8]

The other nonmanufacturing group in which California investors excel is the "other industries" grab-bag, which includes agriculture, mining, construction, transportation, communications, utilities, and retail trade. California firms own 13.2 percent of all U.S. affiliates in these industries. Although the specific industries in which the affiliates operate are not identified, parent data give some indication. Of the parent companies identified as California companies and identified as

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[7]Hanson, Mataloni, and Slaughter (2001) give an account of wholesale affiliate investment by U.S. companies.

[8]These estimates are explained in a comprehensive data appendix available on request from the author (Miloslavsky and Shatz, 2003).

operating in the "other industries" group, 25 percent are in transportation, 25 percent are in retail trade, and 20 percent are in construction.

The top region for these California-owned affiliates is the Asia Pacific region, which has 35 percent of all California-owned "other industries" affiliates. In contrast, the top region for the rest of the United States is Europe. The top locations for both California and rest-of-U.S. investors are Canada, the United Kingdom, and Australia, in that order, but the next three for California investors are Indonesia, France, and Chile. For the rest of the United States, Mexico, Netherlands, and Germany round out the top six.

Production-Sharing and the Asia Pacific Region

Another hallmark of California outward FDI is its focus on Asia and on production-sharing. Production-sharing is a relatively new phenomenon, in which different parts of the production process are allocated to different countries. It has been spurred by transportation and communication cost decreases and by advances in technology that allow for the coordination of firm activities across large distances. It can take place either through contracting relationships, in which case trade in intermediate goods is an appropriate measure, or through multinationals, in which case trade within multinational business groups is an appropriate measure. Much of this activity has taken place in Asia and in technology industries, although for the United States it has also taken place in Mexico and Canada.

The data available for California direct investment provide evidence that California firms are more likely to engage in production-sharing (Table 2.5). California's portion of manufacturing direct investment in Asia is much higher than its portion overall. Although California companies control 4.8 percent of all U.S. manufacturing affiliates, they control 6.6 percent of all U.S. manufacturing affiliates in Asia. The top panel of Table 2.5 also shows estimates of sales and employees of California affiliates, U.S. exports to California affiliates, and U.S. imports from California affiliates, all as a percentage of the same measures for all U.S. affiliates. The trade figures are particularly revealing. Although only 3.7 percent of U.S. exports to manufacturing affiliates go to

Table 2.5

Indications of Production-Sharing

A. California Manufacturing Investment in Asia as a Percentage of U.S. Totals

	Affiliates	Sales by Affiliates	Affiliate Employees	U.S. Exports to Affiliates	U.S. Imports from Affiliates
All countries	4.8	3.7	4.3	3.7	3.7
Asia Pacific	6.6	6.3	7.6	10.4	12.8

B. California Manufacturing Investment in Technology Industries as a Percentage of U.S. Totals

Industry	Affiliates	Sales by Affiliates	Affiliate Employees	U.S. Exports to Affiliates	U.S. Imports from Affiliates
All manufacturing	4.8	5.2	5.1	4.9	5.9
Industrial machinery and equipment	7.4	9.4	8.7	8.6	11.5
Electric and electronic equipment	10.2	13.0	10.6	12.4	14.6

SOURCES: For affiliates, U.S. Department of Commerce (2001a); for operating variables, estimates are based on the average sales, employees, exports, and imports per affiliate for all U.S. affiliates and these averages are used to compute totals for California affiliates (Miloslavsky and Shatz, 2003).

NOTES: "Sales" is sales by foreign affiliates. "Employees" is number of workers in foreign affiliates. "Exports" is U.S. exports to foreign affiliates. "Imports" is U.S. imports from foreign affiliates.

California manufacturing affiliates in general, this figure is more than 10 percent in the Asia region. Likewise, almost 13 percent of all U.S. imports from manufacturing affiliates in Asia come from California manufacturing affiliates. This means that California affiliates in Asia have disproportionately high levels of trade with the United States.

The same is true of California affiliates in two technology-intensive industries—industrial machinery and equipment and electric and electronic equipment—as shown in the lower panel of Table 2.5. For example, California firms owned 10.2 percent of all U.S. affiliates in the electric and electronic equipment group. However, these California affiliates bought 12.4 percent of all U.S. exports to U.S. affiliates in that

industry group, and they sold 14.6 percent of all U.S. imports from affiliates in that group.

This high trade intensity in locations where technology production-sharing takes place is even more apparent on an individual-country basis. Table 2.6 shows the top ten countries for California affiliates when ranked by California's share of all U.S. affiliates. Five are in Asia, one is in Central America, one is in Africa, one is in Europe, and two are in the Middle East.

Certainly, investment in some of those countries has little to do with production-sharing. California investment in Indonesia is concentrated in petroleum and the "other industries" group; in Honduras, it is in food and the "other industries" group; in Nigeria, it is in petroleum; in the United Arab Emirates and Saudi Arabia, it is in a variety of nonmanufacturing sectors.

In contrast, investment in Malaysia, Ireland, Singapore, and Hong Kong has a remarkably similar profile. California affiliates are prominent in both the electric equipment and machinery industries and in all but Malaysia in wholesale trade. Given its strength in natural resources, the

Table 2.6

California Outward Direct Investment as a Percentage of U.S. Total, by Country

Country	Affiliates	Sales by Affiliates	Affiliate Employees	U.S. Exports to Affiliates	U.S. Imports from Affiliates
Indonesia	18.6	22.3	19.0	18.9	23.2
Malaysia	14.3	23.9	26.8	32.4	34.3
Honduras	13.2	13.6	18.2	8.1	17.2
Nigeria	12.5	13.4	9.5	13.5	14.3
Ireland	12.4	12.6	14.5	15.2	10.0
Philippines	12.0	14.9	15.0	19.1	19.3
Singapore	11.4	12.5	14.4	15.5	16.8
U.A.E.	11.3	10.0	12.0	11.0	15.4
Hong Kong	11.1	13.2	13.6	15.0	16.0
Saudi Arabia	10.7	13.3	11.3	13.6	7.2

SOURCES: For affiliates, U.S. Department of Commerce, (2001a); for operating variables, sources and estimation methods are described in Miloslavsky and Shatz (2003).

Philippines has a slightly different profile, with high California investment in electric equipment and in the "other industries" group.

For these five countries, the sizable investment in the technology industries (and in wholesale in some cases) has resulted in very high two-way trade. More than 32 percent of all U.S. exports to U.S. affiliates in Malaysia went to California affiliates, and more than 34 percent of all U.S. imports from affiliates in Malaysia came from California affiliates. California affiliates are responsible for almost 20 percent of affiliate trade between the United States and the Philippines and more than 15 percent between the United States and both Singapore and Hong Kong. In contrast, California affiliates constitute just 11 percent of all U.S. affiliates in the two city-states.

Conclusions

California outward investment is quite low compared to the size of the California economy. The cause may relate to the size and age of California firms or to the quantity of headquarters in the state. However, in at least two ways, California outward direct investment is at the forefront of trends in globalization.

One is through active investment in nonmanufacturing industries. Only in the last two decades have many countries opened their economies to foreign investment in many types of nonmanufacturing industries. In 1983, only 4.6 percent of all sales by U.S. foreign affiliates were from wholesale affiliates. By 1998, this figure had risen to 18 percent.[9] California outward direct investment has certainly been part of this.

The other is through the use of FDI to establish production-sharing relationships. Only recently have firms started carving their production processes among plants in numerous countries, especially in technology industries. This is one reason for the rapid expansion of world trade. California investments, especially in Asia, fit this pattern.

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[9]Total foreign affiliate sales in 1983 were $886 billion, of which $41 billion were by wholesale affiliates. In 1998, total foreign affiliate sales were $2.4 trillion, of which $426 billion were by wholesale affiliates.

3. Inward Foreign Direct Investment in California

In 1999—the latest year with comprehensive data—foreign-owned companies owned $115.6 billion worth of property, plant, and equipment (PPE) in California and employed almost 639,000 workers. On both measures, California ranked first in the nation. It is not remarkable that California should rank first—it is the largest state in both population and GSP. Were it a country, it would have been the world's fifth-richest in 2000. A more relevant issue regarding FDI in California is its level relative to the size of the California economy. On this basis, California inward FDI is more modest. Relative to the size of its economy and the level of its total employment and manufacturing employment, California lags the rest of the United States in terms of PPE owned by foreign affiliates, plant and equipment owned by foreign affiliates, employment in foreign affiliates, and manufacturing employment in foreign affiliates. It lags the East Coast in terms of plant and equipment, employment, and manufacturing employment.

Inward FDI has a number of effects on an economy. It can introduce new capital, production techniques, and management methods. By increasing demand for labor, it can raise wages and under certain conditions increase employment. It can also supply inputs that might otherwise have been purchased from abroad, although it also can increase imports because foreign affiliates have a high propensity to import from their home country. FDI can have regional and industrial-structure effects as well; for example, foreigners have been the backbone of a renewed auto industry in the southern United States. Finally, it increases competition in both product markets and labor markets, sometimes leading to troubles for domestic firms and at times leading to fears of foreign domination of particular sectors.

After discussing the current level of FDI in California in comparative perspective, this chapter will focus on four key questions: (1) How has overall FDI in California evolved? (2) Who are the major investors? (3) In which sectors do they invest? (4) Do jobs in foreign affiliates pay well? A final section will summarize and discuss what the pattern of inward FDI suggests about the California economy.

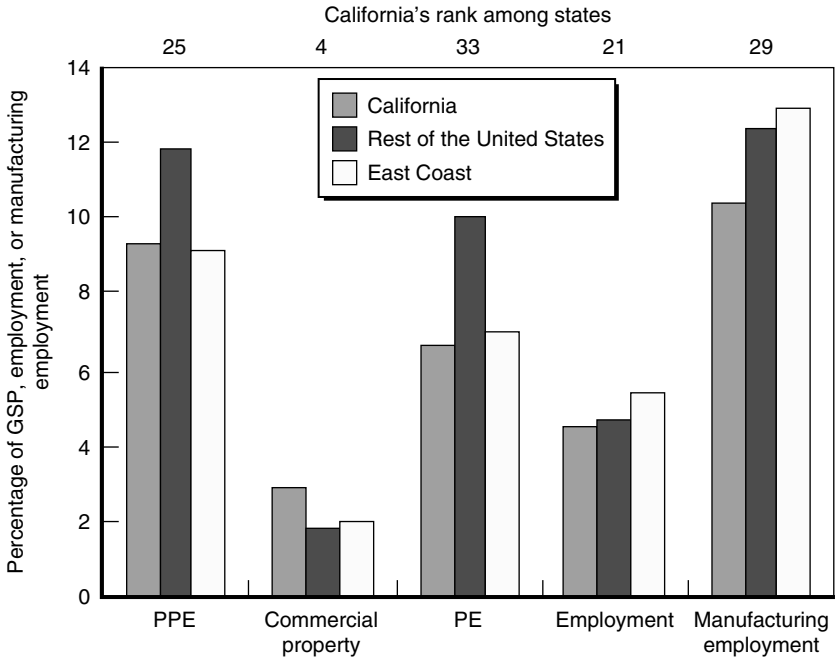
FDI in California, the Rest of the United States, and the East Coast

Discussions of FDI by state focus on the operations of foreign affiliates, including gross PPE owned by affiliates, commercial property owned by affiliates, plant and equipment owned by foreign affiliates (PPE minus commercial property), and employment and manufacturing employment in affiliates.[1] These values change through new investment (known as greenfield), expansion of existing investment, acquisitions of existing domestic companies, or the creation of joint ventures, although, unfortunately, the data are not produced with that level of detail.

Figure 3.1 shows 1999 FDI in the California, rest-of-U.S., and East Coast economies relative to a measure of the size of each economy. PPE, commercial property, and plant and equipment are all relative to GSP; employment in foreign affiliates is measured relative to total state or region employment; and manufacturing employment is measured relative to total state or region manufacturing employment. The figure also shows California's rank for each measure among the 50 states, the District of Columbia, and Puerto Rico. In each case, except that of commercial property, California lags the rest of the United States in inward FDI relative to the size of the economy, and it lags the East Coast in three of the measures.

Although the level of PPE owned by foreign companies in California is the highest in the nation, relative to the size of the state economy it is in the middle—California ranked 25 in 1999. California's 9.4 percent

[1]Technically, FDI is a capital flow that includes equity investment by a parent company in its foreign affiliates, loans from the parent to affiliates, and retained earnings that the foreign affiliate has not yet forwarded to its parent. Data released by the Bureau of Economic Analysis pertaining to FDI in states include not the capital flow but operational variables.



SOURCES: For foreign affiliate operations, U.S. Department of Commerce (2001d); for GSP, U.S. Department of Commerce (2001c); for employment, U.S. Bureau of Labor Statistics (2001a, 2001b).
NOTE: PE is plant and equipment owned by foreign affiliates.

Figure 3.1—Inward Foreign Direct Investment Relative to the Size of the Economy, 1999

was well below that of the rest of the United States—11.8 percent—although slightly above that of the East Coast. Furthermore, much of the $115.6 billion worth of PPE was in the form of commercial property, so that California lagged both the rest of the United States and the East Coast in plant and equipment.

Foreign-owned commercial property measured about 2.8 percent of state GSP, placing California number four in the nation. In contrast, the value of foreign-owned plant and equipment was only 6.6 percent of the value of California GSP, compared to almost 10 percent for the rest of the nation. This ranked California 33 among the states.

Foreign commercial property ownership is higher in California for two possible reasons. It might be due to speculative investment by

foreigners expecting real estate appreciation or it might be a function of higher land prices. There is evidence for both. Foreign ownership of commercial property in the real estate industry accounts for 57 percent of all foreign-owned commercial property in California, a figure higher than that of all but five other states, suggesting investment. However, the share of commercial property in PPE is higher for seven of eight foreign-invested industries in California than it is on average among all other states, suggesting higher land prices in California.

Employment in foreign-owned firms in California measured 4.6 percent of total California employment, a rank of 21 among all states, whereas manufacturing employment relative to state manufacturing employment measured 10.4 percent, a rank of 29 among all states. These figures are both lower than comparable figures for the rest of the United States and far lower than comparable figures for the East Coast. In the east, employment in foreign firms was 5.4 percent of all employment, whereas manufacturing employment in foreign firms was 13 percent of all manufacturing employment.

In one way, California's low rankings parallel the international pattern of inward FDI among 25 developed economies. Larger economies often have lower levels of inward FDI relative to their size.[2] For example, New Zealand, the third-smallest developed economy (ahead of Iceland and Gibraltar), had the second-highest ratio of direct investment stock to GDP in 1998. The United States, the largest economy, had the 21st-highest ratio.[3] The same pattern may well apply to states or provinces within a national economy.

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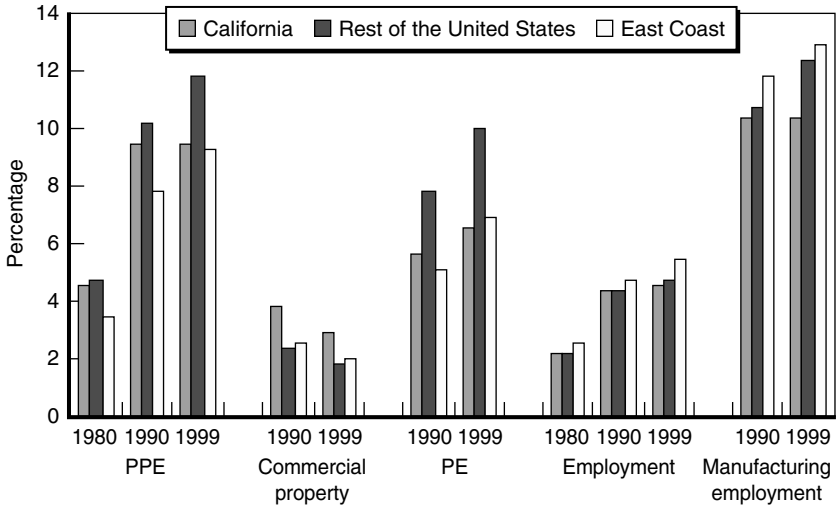
[2]A simple bivariate regression of the ratio of inward direct investment stock to gross domestic product (GDP) on the log of GDP gives a coefficient of –0.04, significant at the 0.05 level (t-statistic of 2.64). This means that for every 1 percent increase in GDP, the ratio of direct investment stock to GDP falls by 4 percentage points.

[3]Data on inward direct investment stocks are from United Nations Conference on Trade and Development (various years). Data on GDP by country are from World Bank (2001). Certainly, the inverse relationship between size and FDI does not hold for all countries—the United Kingdom, one of the largest countries, has a high level of direct investment, whereas Iceland, one of the smallest countries, has a very low level of direct investment.

The Evolution of Foreign Enterprise in California

Three patterns hold for the evolution of the different measures of FDI in California compared to elsewhere in the United States when measured relative to the size of the respective economy (Figure 3.2). First, the operations of foreign affiliates in California have grown dramatically since 1980 but not much (if at all) since 1990, relative to the size of the California economy. Second, except for commercial property ownership, California has proportionately lower levels of foreign-affiliate operations than do the rest of the United States and the East Coast. Third, whereas relative levels stagnated in California between 1990 and 1999, they continued to grow in both the rest of the United States and the East Coast.[4]



SOURCES: For foreign affiliate operations, U.S. Department of Commerce (1983, 1993b, 2001d); for GSP, U.S. Department of Commerce (2001c); for employment, U.S. Bureau of Labor Statistics (2001a, 2001b).

Figure 3.2—Inward Foreign Direct Investment Through Time

[4]To compare FDI in the three regions, PPE, commercial property, and plant and equipment are again normalized by GSP, employment is normalized by total employment, and manufacturing employment is normalized by total manufacturing employment.

As an example of all three patterns, the value of PPE owned by foreign affiliates in California more than doubled between 1980 and 1990 relative to California's economy but actually fell slightly between 1990 and 1999 (from 9.5 percent to 9.4 percent). It more than doubled for the rest of the United States and for the East Coast between 1980 and 1990 as well, but then kept growing. California ranked 18 among states in 1980 but had fallen to 25 by 1999. Note that the actual *values* of PPE grew in all three regions through 1999, but the value relative to size of the economy did not keep pace in California.

Overall employment in foreign affiliates has remained much steadier over time in California than has the value of PPE. It grew dramatically between 1980 and 1990, relative to the total number of workers in California, and then rose again by 1999. However, growth in the rest of the United States was faster from 1990 to 1999, so California's ranking fell from 17 to 21.

These workers generally are not and have not been in manufacturing. In 1990, California ranked 20 in terms of manufacturing employment in foreign affiliates and had about the same relative amount as the rest of the United States. By 1999, however, California's ranking fell to 29 and its relative manufacturing employment was dramatically lower than that of the rest of the United States. It is not just the ranking that fell. Manufacturing employment in foreign affiliates in California fell from 215,000 to 199,000, whereas in the rest of the United States it actually rose, from 1.8 million to more than 2.0 million.

Sources of Foreign Investment

Throughout the United States, including California, Europe is the largest investing region. In fact, Europe has been the leading investing region in the rest of the United States for each of the five measures for every year for which data are available. California inward FDI has a slightly more Asian tilt, however. Europe has led in plant and equipment, employment, and manufacturing employment for every year, whereas the Asia Pacific region has led in commercial property for every year for which data have been available. Only in PPE has there been a reversal. In California, Europe led from 1977 through 1991, the Asia

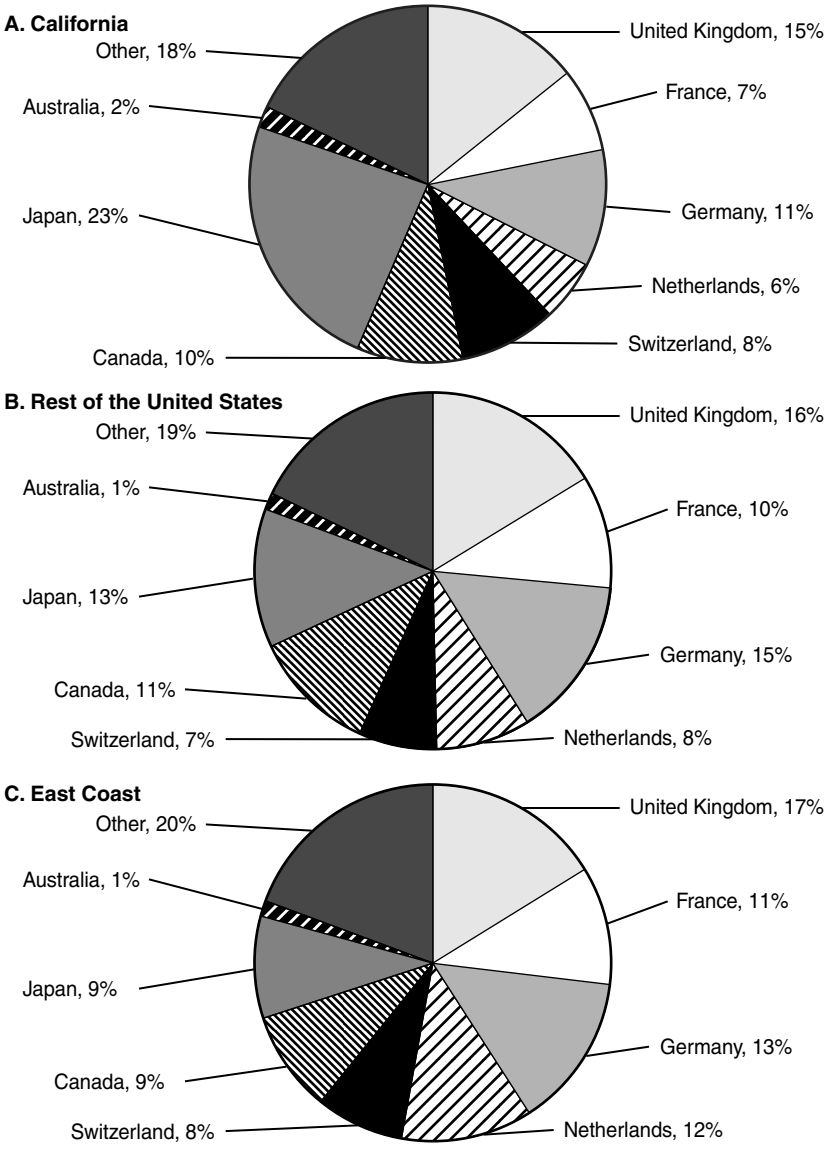
Pacific region led from 1991 through 1997, and then Europe took over as lead investor in 1998, coterminous with Japan's long, slow economic decline.

On a country basis, Japan is the lead investor and emerged as the top investor in California during the country's boom years of the 1980s. Its position eroded during the 1990s, with investors from Australia, France, Germany, and the Netherlands gaining ground, although it has retained its spot as the leading source of direct investment in the state. Japanese affiliates not only own the most PPE in California, they employ the most workers. In the rest of the country, in contrast, United Kingdom investors are the leaders.

Figure 3.3 shows the distribution of employment in foreign-invested firms by country in 1999 in California, the rest of the United States, and the East Coast.[5] Comparing just California and the East Coast, Japan is far more dominant in California (23 percent in California versus only 9 percent in the East Coast), whereas the four major European investors (United Kingdom, Germany, France, and the Netherlands) are far more dominant in the East Coast (38 percent in California versus 53 percent in the East Coast). This pattern suggests that, as in outward FDI, geography matters a great deal. Japan is closer to California than to the East Coast and has higher levels of investment in California. Europe is closer to the East Coast than California and accordingly has higher levels of investment in the East Coast.

Japan's dominance in California was clearest in the 1990s. In terms of employment, the role of top foreign employer in California rotated among direct investors from the United Kingdom, Germany, and Japan throughout the late 1970s and all of the 1980s, with subsidiaries and branches from Japan never employing more than 22 percent of all workers in foreign-owned firms. In 1990, Japan became the top foreign employer and stayed there, peaking at almost 29 percent of all workers in foreign-owned firms in 1997. In the rest of the United States, affiliates

[5]The figure omits Bermuda, which is actually the eighth-largest source of investment in California. Much of that investment may stem from American companies reincorporating in Bermuda to lessen their U.S. tax liabilities.



SOURCE: U.S. Department of Commerce (2001d).

NOTES: Charts show the distribution of employment by foreign affiliates in California, the rest of the United States, and the East Coast. Numbers may not sum to 100 percent because of rounding.

Figure 3.3—Top Source Countries for Inward Foreign Direct Investment, 1999

owned by firms in the United Kingdom have employed the largest share of workers among all foreign affiliates for at least two decades except 1987, when Canadian affiliates were the top employers. United Kingdom dominance has decreased in the rest of the United States, but the employment share in U.K. firms remains almost 2 percentage points ahead of employment in firms from the next most dominant country, Germany.

Japan's increase in foreign-owned PPE in California was even more dramatic than its increase in employment. Until 1987, Canada and the Netherlands vied for top spot among countries with the highest ownership of PPE in California.[6] This ranking was similar to that in the rest of the United States, although in some years the United Kingdom held the top place in the rest of the United States as well. By 1990, however, Japan led all investing countries in California, holding more than 30 percent of all foreign-owned PPE, more than twice as much as firms from the next-biggest investor, the United Kingdom. In the rest of the United States, in contrast, Canadian firms led investment in 1990, the United Kingdom took over 1991 through 1996, Japanese firms emerged on top in the rest of the United States only in 1997, and then relinquished the top spot in 1999 back to firms from the United Kingdom.

Japan's rise in ownership of PPE in California was driven more by investments in plant and equipment than in commercial property, although both increased through the mid-1990s and have subsequently fallen. In 1990, Japanese ownership of commercial property as a share of total Japanese PPE in California was more than 60 percent, but by 1999, that figure had fallen to 35 percent. Japanese investors' shares of total PPE has declined steeply since mid-decade. As late as 1996, Japanese companies owned almost 39 percent of all property, plant, and equipment owned by all foreign affiliates in California. That figure had fallen to only 28 percent by 1999.

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[6]Data on the Netherlands are suppressed for this year to avoid revealing the identity of the investing company. It is possible that the Netherlands was the largest investing country. In addition, all data by country is by "ultimate beneficial owner," meaning the investing firm might be from a third country but be owned by a firm from the identified country.

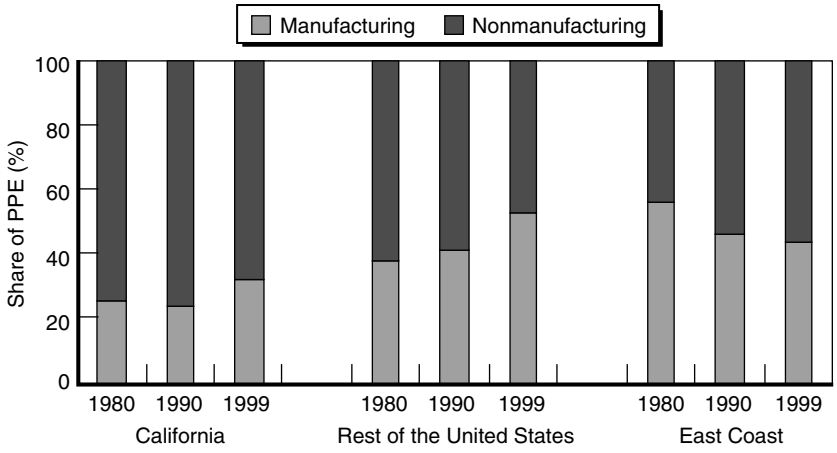
Sectors of Foreign Investment

The most prominent pattern regarding California's share of U.S. inward FDI by industry is the steady decline of its share of total manufacturing FDI in the United States, despite the rise of its share of overall U.S. manufacturing value added, foreign and domestic combined. In 1980, California produced 10 percent of all U.S. value added in manufacturing. By 1990, that figure has risen slightly to 10.3 percent, and in 1999, it reached 11.9 percent. Total manufacturing employment in California relative to the United States during that period rose and then fell, but not sharply. In 1980, 9.9 percent of all manufacturing workers in the United States were in California; in 1990, 10.8 percent were in California; and in 1999, that figure was 10.4 percent. In contrast, employment in foreign manufacturing affiliates in California steadily declined. It amounted to 10.9 percent of employment in all foreign manufacturing affiliates in the United States in 1980, then fell to 9.8 percent in 1990 and 8.6 percent in 1999.

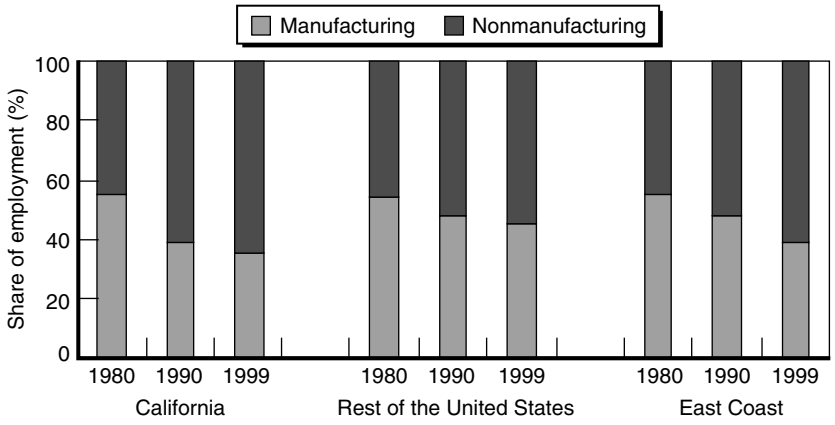
This decline in manufacturing is reflected in the way foreign investors divide their investments among sectors. Figure 3.4 shows the breakdown between manufacturing and nonmanufacturing PPE and employment in foreign affiliates for California, the rest of the United States, and the East Coast. In California in 1980, foreign manufacturing affiliates owned 25 percent of all PPE owned by foreign affiliates. By 1999, they owned 33 percent. In the rest of the United States, those proportions rose from 38 percent to 53 percent. In the East Coast states, they fell from 56 percent to 44 percent but remained well above the share for California.

Foreign manufacturing affiliates throughout the United States have become more capital intensive. For California and the rest of the United States, the increased capital intensity is seen in the relative increase of manufacturing property, plant, and equipment and the relative decline of employment in manufacturing affiliates in both California and the rest of the United States. For the East Coast, the increased capital intensity is reflected in the relative decline of manufacturing employment that was more rapid than the relative decline of manufacturing PPE. The relative decline in manufacturing employment was particularly dramatic in

A. Investment



B. Employment



SOURCES: U.S. Department of Commerce (1983, 1993b, 2001d).

Figure 3.4—Manufacturing and Nonmanufacturing Investment and Employment

California. In 1980, foreign manufacturing affiliates employed 55 percent of all people who worked in foreign affiliates in California. By 1999, they employed only 35 percent, a drop of 20 percentage points. In the rest of the United States, in contrast, that figure dropped by only 9 percentage points from about the same level, to 45 percent. Whereas the

East Coast's share fell as well, it started at about the same point as California but retained a higher share of manufacturing workers.

Californians employed by foreign companies in nonmanufacturing industries are more concentrated in wholesale trade, information industries, and professional, scientific, and technical services than such employees in the rest of the United States (Figure 3.5).[7] They are also in a group dubbed "other industries," which includes agriculture, mining, utilities, construction, and services. Within this other industries group, they were overwhelmingly in the subcategories "administration, support, and waste management," "accommodation and food service," and "transportation and warehousing" in 1999.

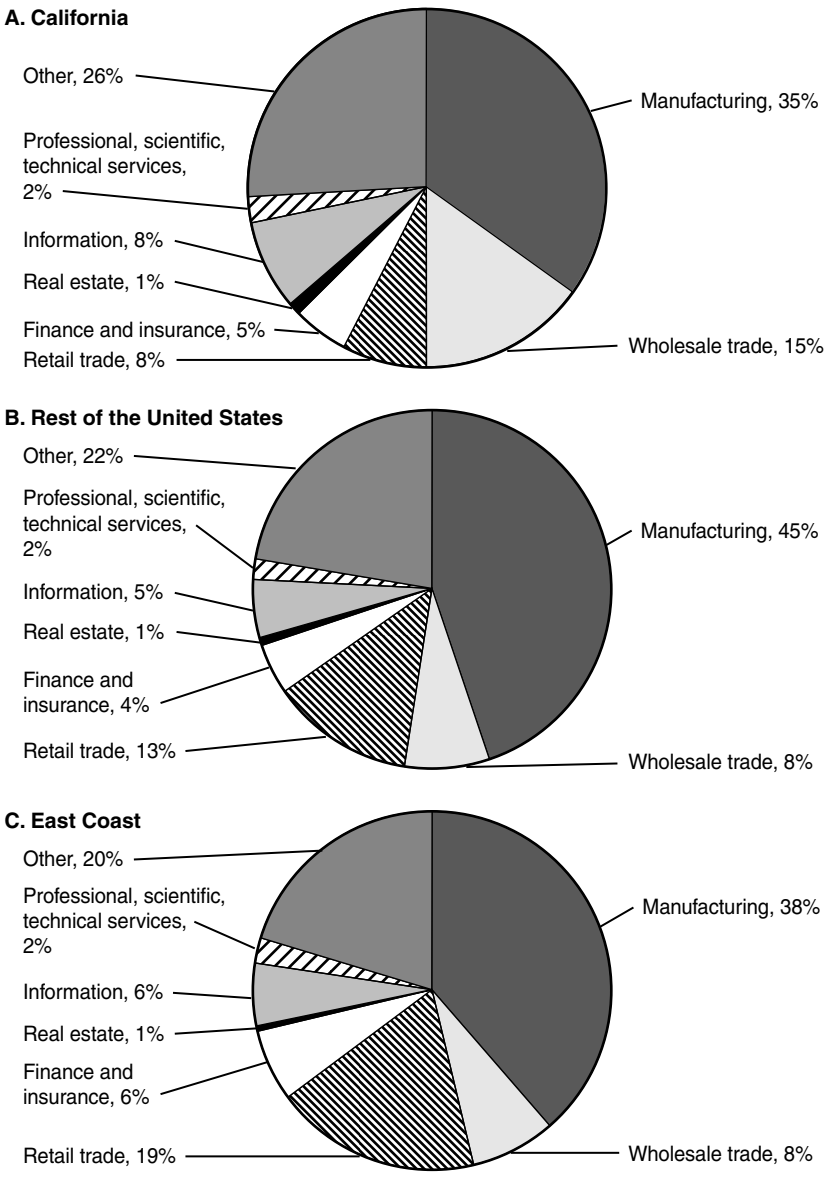
The coastal regions have much in common with each other, notably, the relatively smaller share of manufacturing employment. California's share is the smallest of the three regions. Note that although all regions appear to have 2 percent of their foreign-affiliate employment in professional services, California actually has 2.4 percent, the East Coast also has 2.4 percent, and the rest of the United States has 1.9 percent.

Are Foreign-Affiliate Jobs High-Paying Jobs?

Published data do not exist that can show whether foreign affiliates in California pay higher wages and benefits than do U.S.-owned establishments in California. However, compared to the rest of the United States, California has a slightly higher proportion of foreign-affiliate employment in the industries in which foreign firms pay less on average than U.S. firms.

In the United States, foreign affiliates as a group pay higher wages and compensation than U.S.-owned establishments, as shown in the "All industries" row of Table 3.1. This is in large part due to industry mix—the share of foreign-owned activity is tilted more toward manufacturing and wholesale trade than is U.S.-owned activity, and both of those

[7]Information industries include publishing, motion picture and sound recording industries, broadcasting and telecommunications, and information services and data processing.



SOURCE: U.S. Department of Commerce (2001d).

Figure 3.5—The Distribution of Employment in Foreign Affiliates by Industry, 1999

Table 3.1

Wages and Compensation in Foreign- and U.S.-Owned Establishments, 1999

	Foreign-Owned		U.S.-Owned	
Industry	Average Wage ($)	Average Compensation ($)	Average Wage ($)	Average Compensation ($)
All industries	39,264	48,300	32,967	39,956
Manufacturing	43,593	54,809	41,716	49,133
Wholesale trade	48,704	58,056	45,165	52,458
Retail	18,407	22,787	21,596	25,707
Finance and insurance	88,703	105,311	53,197	63,836
Real estate	44,330	50,766	31,327	37,777
Information	47,384	58,802	53,243	62,851
Professional, scientific, and technical services	56,647	67,234	53,716	65,316
Other industries	25,397	30,576	32,967	39,956

SOURCES: For wages, compensation, and employment in foreign-owned establishments, U.S. Department of Commerce (2001d); for overall U.S. wage and employment, U.S. Bureau of Labor Statistics (2001c); and for overall compensation, U.S. Department of Commerce (2001c).

NOTES: Averages are computed as aggregate wages and compensation divided by aggregate employment. Wage, compensation, and employment data for U.S.-owned firms are the difference of overall U.S. wage, compensation, and employment data and foreign-affiliate wage, compensation, and employment data.

sectors pay higher wages and compensation than are paid in the overall U.S. economy.[8] Occupational mix might also influence these results.

Along with paying higher wages and compensation in the aggregate, foreign-owned companies pay higher wages and compensation in five of eight broad sectors. Of these five sectors, California has a higher share of foreign-affiliate employment than the rest of the United States in four.[9] Only in manufacturing does California have a lower share. Of the three sectors in which foreign-affiliate compensation is lower than U.S.-owned company compensation, California has a higher share of foreign-affiliate employment in two.[10]

[8]Graham and Krugman (1991) explore the industry-mix issue.

[9]These four are wholesale trade, finance and insurance, real estate, and professional, scientific, and technical services.

[10]These two are information industries and the other industries group.

Combining shares of employment and levels of average compensation, 58 percent of all employment in California-based foreign affiliates is in the five industries that pay higher wages and compensation than their U.S.-owned counterparts, whereas 42 percent is in industries that pay lower wages and compensation. In the rest of the United States, however, a slightly higher proportion of foreign-affiliate employment is in the higher-paying industries. Almost 60 percent is in the five higher-paying industries, with 40 percent in the three lower-paying industries. These numbers suggest that jobs in foreign affiliates in California pay well, but California does not fare better than the rest of the United States in this respect. If anything, it has slightly higher employment in the less-well-paying sectors of foreign investment.

Conclusion

California is the leading state in the level of inward FDI in the United States but is only about average—or less—when this level is matched with the size of the state's economy. It stands apart from the rest of the United States with heavy investment by Japanese firms, higher levels of investment in nonmanufacturing industries, and the prominence of investment in commercial property. Employees in California foreign affiliates may earn higher wages than their counterparts in U.S.-owned affiliates, but it is impossible to determine whether this is the result of industry mix, occupational mix, higher productivity, or more generous compensation policies.

These patterns hold a number of implications for the state. Foreign investors are less encumbered than domestic investors in their choice of locations and so can serve as a signal to how investors view a regional economy.[11] California is not a state in which foreigners choose to manufacture. Instead, the state provides a base for wholesaling and distribution; publishing, broadcasting, movie-making, and data processing; professional, scientific, and technical services; and hotels, restaurants, administration, and transportation and warehousing.

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[11]Foreign investors are not completely unencumbered, however. Recent work by Head, Ries, and Swenson (1995, 1999) has shown that foreign investors like to locate near other foreign investors of the same nationality.

Second, California's reliance on Japan as its main investing country may signal that inward FDI will continue to grow more slowly in the state than in the rest of the United States. FDI is usually spurred by firm growth, and with Japan's economy still stagnant and many of its firms not growing, increased investment may not be forthcoming.

The distribution indicates one other pattern. As with outward FDI, California inward FDI is at the leading edge of trends in globalization. Although quantitatively low overall, inward direct investment is taking place in service and information sectors, where such investment would have been scarce just two decades ago.

4. California Goods Exports and Imports

Introduction

Exports have dominated national trade policies for centuries. Today, producers see them as a way to gain larger markets and therefore more revenues, which policymakers see as translating into more jobs. In the United States, every state has some type of export-promotion program, and the national government puts tremendous effort into increasing exports.

Exports have a number of effects on the economy. Exports send goods to foreign markets where returns are often higher, thereby increasing firm profits, employee wages, and jobs. Employment, shipments, wages, productivity, and capital intensity are all higher at U.S. exporting plants than at nonexporting plants. However, there is some debate about whether export activity improves firm performance or whether it is merely a sign of a highly productive firm. Evidence indicates that firms that export are already good firms along a number of dimensions, but that exports still increase employment and the probability of firm survival.[1] Exports can also help a firm learn about a foreign market and eventually lead to outward FDI by that firm into that foreign market.

How does California stack up as an exporter? This chapter will assess California's exports by discussing five topics. It will compare California exports to the exports of other states, it will investigate their industrial distribution, and it will discuss problems involved in measuring California exports. Following the measurement section, it will assess California's agricultural exports in comparative perspective and

[1] Bernard and Jensen (1999).

then discuss the geographic distribution of all California exports. Finally, the chapter will present estimates of goods imports.

California as an Export Powerhouse

California is a manufacturing export champion compared to the rest of the United States. Whereas the state produced about 10 percent of all manufacturing shipments in 1997, it produced about 14 percent of all manufacturing exports in the United States. Furthermore, the state's manufacturing industries exported more than 28 percent of their shipments, whereas manufacturing industries in the rest of the United States exported only 20 percent of their manufacturing shipments and manufacturing industries in the East Coast exported less than 19 percent of their shipments (Table 4.1). For reasons explained below, this section will focus on 1997 data, but more recent data with the detail described here—were it to exist—likely would show the same pattern.

California's high export propensity in manufacturing is broad-based and occurs in nearly every industry. Exports can be divided into direct exports and total exports. Direct exports are goods that leave the factory gate and are exported without being changed further. Total exports include direct exports and indirect exports—goods that leave the factory gate and are then used as inputs into other goods that are then exported. In terms of total exports, California manufacturers export a higher proportion of their output in 18 of 21 industries than do manufacturers from the rest of the United States. Export ratios for these industries are shown in bold and range from 5 percent of output in the furniture industry to almost 60 percent of output in the electrical equipment, appliances, and components industry. Furthermore, compared to the East Coast, California exports as a percentage of shipments are higher in 17 industries.

Another aspect of California's manufacturing exports is that California's firms are huge input producers. Whereas California manufacturers in 18 of 21 industries have higher total exports as a percentage of sales than manufacturers in the rest of the United States, they have higher proportions in 10 of 21 for direct exports. In nine industries, the manufacture of inputs to be used in final export goods more than doubles the value of exports for an industry. This is especially

Table 4.1

Manufacturing Exports as a Percentage of Output, 1997

Industry	California		Rest of the United States		East Coast	
	Direct Exports	Total Exports	Direct Exports	Total Exports	Direct Exports	Total Exports
All industries	**17.9**	**28.4**	12.6	19.5	12.3	18.7
Food	**6.6**	**8.5**	5.4	7.4	3.3	4.4
Beverage and tobacco products	4.0	4.6	6.5	7.2	8.0	8.7
Textile mills	4.8	**21.9**	8.8	19.8	9.3	19.9
Textile products	5.7	7.6	6.4	8.6	7.1	9.1
Apparel	**11.9**	**14.0**	10.5	12.2	11.0	12.8
Leather and allied products	**27.6**	**29.3**	19.1	24.0	20.4	27.1
Wood products	4.2	**10.4**	5.0	9.2	5.9	10.9
Paper	5.2	**19.3**	8.6	16.8	8.4	18.2
Printing	1.3	**12.1**	1.5	6.6	1.6	6.0
Petroleum and coal products	2.2	**8.7**	4.0	8.2	1.9	6.1
Chemicals	**14.4**	**26.1**	13.6	24.2	12.3	21.1
Plastics and rubber products	**10.7**	**26.0**	6.8	16.2	7.1	15.2
Nonmetallic mineral products	2.7	10.2	6.5	11.8	8.3	13.9
Primary metals	8.4	**44.1**	10.7	36.5	11.8	33.7
Fabricated metal products	6.2	**32.4**	6.8	19.7	7.2	18.7
Machinery	**29.5**	**34.5**	23.8	28.5	29.7	33.7
Computers and electronic products	**33.1**	**47.1**	23.8	31.0	21.4	26.9
Electrical equipment, appliances, and components	**29.5**	**59.4**	15.7	23.1	18.0	26.4
Transportation equipment	**20.0**	**25.6**	19.0	22.9	18.5	21.7
Furniture	3.5	**5.0**	3.5	4.4	3.4	3.9
Miscellaneous products	**18.5**	**20.8**	12.2	14.2	14.4	16.1

SOURCE: U.S. Census Bureau (2000b).

NOTES: Data are classified according to the 1997 North American Industry Classification System. Direct exports are exports that go directly to final sales. Total exports include direct exports plus products that are used as inputs in direct exports. Numbers in bold are higher for California than for the rest of the United States.

true in the two metals-manufacturing industries—primary metals and fabricated metals—and in the electrical equipment industry.

For California workers, the high export propensity means that a high proportion of manufacturing jobs is tied to exports. In 1997, 499,000

workers in California manufacturing—almost 28 percent—owed their jobs to exports, compared to almost 19 percent for the rest of the United States and 18.4 percent for the East Coast. Furthermore, almost 10 percent of all private sector workers in California manufacturing and nonmanufacturing together owed their jobs to manufacturing exports compared to 6.8 percent for the rest of the United States and only 5.7 percent for the East Coast.[2]

For the California economy, these export figures send another signal to planners and policymakers. Overall manufacturing data confirm that manufacturers shy away from locating their production in California, which is what the inward FDI data indicated. However, those manufacturers that produce in the state tilt their production to exports. The state is treated as a site for manufacturing exports but not necessarily for serving the U.S. market.

Goods Exports Are Highly Concentrated

Even though nearly every manufacturing industry is a strong exporter, not all sectors contribute equally to California's export performance. Computer industry exports constituted fully half of all California manufacturing exports (Figure 4.1). The other 20 industries are grouped into six manufacturing industry aggregates.

The concentration of exports is far higher than the concentration of employment or output. The computer industry in California for the year of the data accounted for 22 percent of total manufacturing employment in the state, 30 percent of total manufacturing production, and 38 percent of total export-related manufacturing employment.

This level of concentration is far different from the export mix of the rest of the United States. Whereas half of California's exports are from the computer industry, the largest single sector for the rest of the United States is the transportation equipment industry at 18 percent. For the East Coast, the largest single sector is chemicals at 17 percent (grouped with other industries in the figure).

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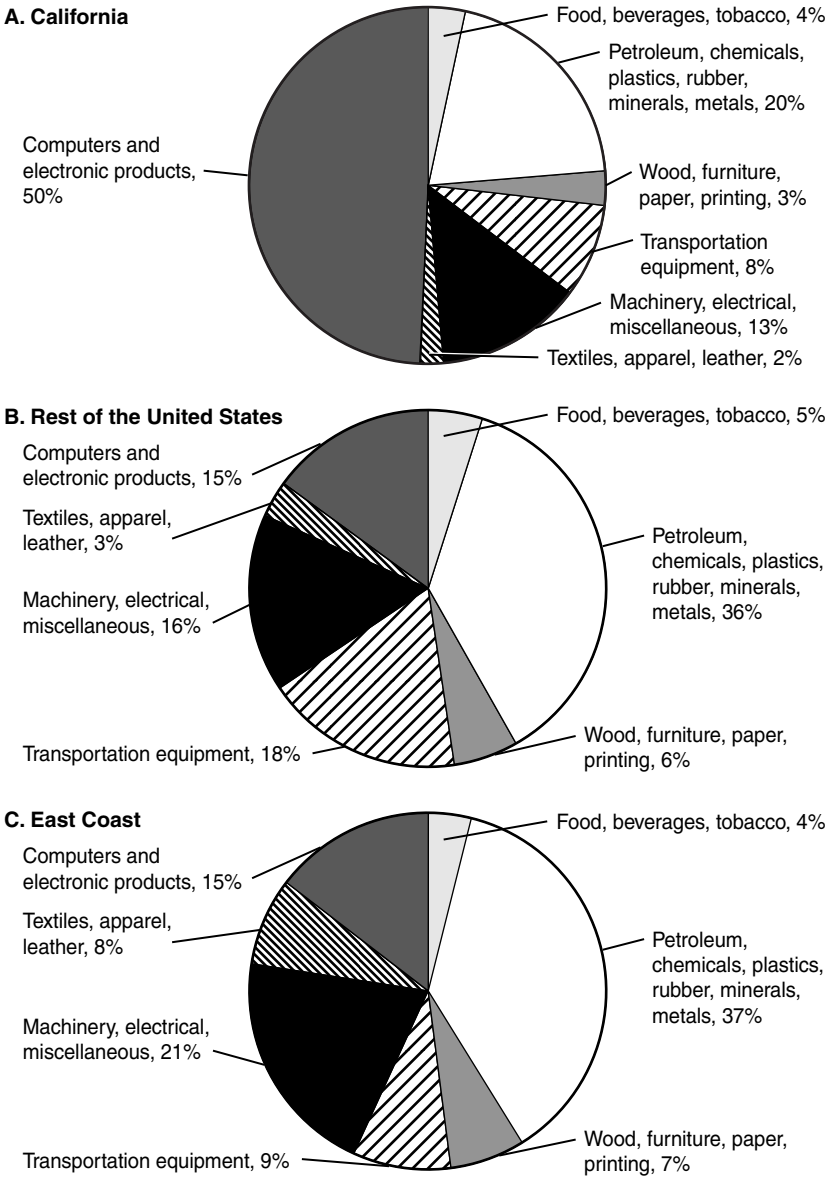
[2]These figures are from the U.S. Census Bureau (2000b).



SOURCE: U.S. Census Bureau (2000b).

NOTE: Numbers may not sum to 100 percent because of rounding.

Figure 4.1—Share of Total Exports, by Industry

Despite a dramatic slowdown of U.S. computer and electronic products exports in 2001 and 2002, there is evidence that the computer industry will become even more reliant on exports over the next few years. U.S. purchasers are upgrading at a much slower pace than in the past, largely because continuing increases in computer power are not needed by most users. Instead, the industry expects much of its continued growth to come from sales to developing countries, where the number of computers relative to the population and size of the economy is far lower than it is in the United States.[3]

Do We Really Know the Level of California-Origin Exports?

California export levels are among the most easily found information about globalization in the state. Every quarter, new data emerge pinpointing the level of exports, the industries from which those exports come, and the countries to which those exports go.[4] However, the numbers may not be accurate.

Of the three series of California exports available, two come from the Foreign Trade Division of the U.S. Census Bureau. In one, exports are classified by the 1987 Standard Industrial Classification (SIC) and then increased through a statistical method to take account of exports for which no home state has been identified.[5] This series ended in 2000. In the second series, exports are classified by the 1997 North American Industrial Classification System (NAICS), and no increase is made to account for exports for which no home state has been identified. As a result, the NAICS-based series for California is lower than the SIC-based series, although for the United States as a whole the two series are equal. The NAICS-based series started in 1997. It is these two series that have been reported as state exports each quarter.

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[3]Markoff (2002).

[4]See, for example, the report on first-quarter 2002 exports in the *Los Angeles Times* (Dickerson, 2002). Export data are also released monthly on a commodity basis.

[5]Imputations are carried out by the Massachusetts Institute for Social and Economic Research (2001, 2002).

Both of these series designate the origin of the export based on a form called the Shipper's Export Declaration, although much of the data-gathering is now migrating to the U.S. government's paperless Automated Export System. However, the location filled out is not meant to represent the production location. The location listed might represent the location of production, but it also might represent the location of a distributor or warehouse, the state of origin for the commodity that has the largest share of a multiproduct shipment, or even a foreign trade zone in which the product was stored before export. The extent of misrepresentation varies by industry. In general, the designated location does not represent the place of production of nonmanufactured items. However, the designated location does represent the place of production for about 75 percent of manufactured items. Overall, these series generally understate exports from a number of agricultural states and overstate exports from states that handle high-value farm product shipments through their ports.[6]

These series also include wholesale and transportation margins, the cost of moving the good from the factory gate to port. In this sense, they overstate the value of production for export. The final problem with both these series is that they both include reexports—goods that enter the United States, undergo no or little transformation, and then leave the United States. These are hardly items that have been produced by California or U.S. workers. For the United States, reexports amount to almost 9 percent of total exports.

So what can one do to understand state-level exports? Here is where the third export series enters, and this is the series reported on in this chapter. This final series is not annual but is a 1997 estimate of exports from California manufacturing plants made by the Economic Census

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[6]The most well-noted example of the overstatement of agricultural exports from port states is that of Louisiana. Midwestern agricultural products are sent by barge down the Mississippi to New Orleans, consolidated in New Orleans, and then marked as having an origin of movement in New Orleans. In 1999, Louisiana was the leading exporter of agricultural crops, shipping $7.9 billion worth, compared to number-two California's $3.1 billion. However, farmers in Louisiana received $1.2 billion for sales of their crops in 1999, a rank of 24 among the states, whereas farmers in top-ranked California received $18.1 billion, according to the U.S. Department of Agriculture (2001).

program of the U.S. Census Bureau. Although not perfect, this series is probably a better estimate of the location of production for export by industry, because that is what it is intended to measure. However, it does not include destinations.

There are two points to take away from comparing these different series (Table 4.2):

- The figures usually reported for state exports likely overestimate California export production.
- Even using a variety of different estimates, California manufacturing emerges as relying more on exports than does manufacturing in the rest of the United States.

California's Agricultural Exports

From at least 1995 to 2000, California agriculture exported between 16 and 19 percent of its production. This compares to California manufacturing exports of between 17 and 28 percent of manufacturing production, depending on the measure. In fact, California agricultural exports relative to production are about the same as agricultural exports for the rest of the United States.[7]

This is not to minimize the importance of trade to agriculture, especially for some commodities. In 2000, foreign purchasers bought nearly three of every four almonds grown in California. "International trade is vital to the health of California agriculture," California Farm Bureau Federation President Bill Pauli recently said. "Success on the farm is directly tied to selling profitably in international markets."[8] However, agriculture can best be viewed as a normal industry when it comes to California exports, not a superperformer.

As with estimating California manufacturing exports, estimating California agricultural exports and their relationship to U.S. agricultural

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[7]California agricultural export figures are from Kuminoff, Bervejillo, and Sumner (2001). Similar figures for the United States as a whole were 24 percent in 1995 and then 20 to 21 percent in 1996 through 2000 (U.S. Department of Agriculture, 2002a).

[8]California Farm Bureau Federation (2000).

Table 4.2

California Manufacturing Exports, Three Versions

A. Total Manufacturing Exports, All Available Years ($ billions)

	1997	1998	1999	2000
Foreign Trade Division SIC exports	103.2	98.9	99.7	120.8
Foreign Trade Division NAICS exports	91.3	88.3	90.8	111.5
Economic Census NAICS exports	67.8	n.a.	n.a.	n.a.

B. Industry Exports, 1997 ($ millions)

	Foreign Trade Division NAICS Exports	Economic Census NAICS Exports	Absolute Difference	% Difference
Food	3,364	2,619	746	28.4
Beverage and tobacco products	534	443	91	20.5
Textile mills	333	66	267	404.5
Textile products	130	130	0	0.0
Apparel	1,170	1,520	–350	–23.0
Leather and allied products	195	175	20	11.4
Wood products	425	260	165	63.5
Paper	894	424	470	110.8
Printing	556	129	428	331.0
Petroleum and coal products	1,045	463	582	125.7
Chemicals	4,196	2,819	1,377	48.8
Plastics and rubber products	1,380	1,381	–2	–0.1
Nonmetallic mineral products	442	203	239	117.7
Primary metals	1,076	513	563	109.7
Fabricated metal products	1,816	1,502	313	20.9
Machinery	9,734	5,637	4,097	72.7
Computers and electronic products	47,380	37,531	9,849	26.2
Electrical equipment, appliances, and components	3,127	2,126	1,001	47.1
Transportation equipment	9,599	6,964	2,635	37.8
Furniture	260	231	29	12.6
Miscellaneous products	3,638	2,708	930	34.3

SOURCES: Massachusetts Institute for Social and Economic Research (2001, 2002); U.S. Census Bureau (2000b).

NOTES: "Economic Census NAICS Exports" are "direct exports" rather than "total exports," since direct exports are more comparable to the Foreign Trade Division (FTD) data. However, both FTD series include reexports and the transportation and wholesale margins involved in moving the export from factory gate to port. The Economic Census data do not include reexports and are valued at factory prices. Numbers may not add up because of rounding.

exports is not straightforward. The Foreign Trade Division data described above are not helpful and so are not discussed here. Rather, two other sources are used—the Agricultural Issues Center at the University of California at Davis (the AIC data) and the Economic Research Service at the U.S. Department of Agriculture (the USDA data). The AIC data are the single best information source for California because the AIC makes the most serious effort to measure actual exports. The USDA export data are based simply on California's proportion of total U.S. agricultural output and do not directly measure exports by state. Rather, the USDA data are best used for understanding overall U.S. agricultural exports. However, they are generally comparable with the AIC data in terms of commodity coverage, because both include wine and processed agricultural products.[9] Panel A of Table 4.3 shows both measures of California agricultural exports. Commodity markets have traditionally been volatile, and California agricultural exports reflect this.

Whether California agriculture depends more on exports than does agriculture in the rest of the United States depends on how agriculture is defined (Panel B of Table 4.3). Relative to the output of crops and animal products, California agricultural exports are actually lower than agricultural exports from the rest of the United States. They are higher relative to crop, animal, agricultural services, and forestry output and significantly higher when food-, beverage-, and tobacco-based manufacturing industries are included in the definition of agriculture.[10]

This finding may surprise some observers, especially in light of the fact that California produces 100 percent of U.S. dry bean, date, fig, olive, prune, raisin, almond, pistachio, walnut, artichoke, and garlic exports, as well as 99 percent of kiwi exports, 98 percent of apricot exports, and 96 percent of avocado and wine exports.[11] However, California is a low- or nonexporter of some of America's largest

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[9]Wine and processed agricultural products are also included in manufacturing exports as part of 1997 North American Industry Classification System codes 311 and 312.

[10]Exports as a percentage of output as shown in the table differ from the 16 to 19 percent previously cited because of a different method of valuing exports. Please see Appendix C for further information.

[11]Year 2000 data, http://aic.ucdavis.edu/pub/percentage.pdf.

Table 4.3

California's Agricultural Exports, Two Versions

A. California Agricultural Exports ($ billions)

	1995	1996	1997	1998	1999	2000
Agricultural Issues Center	6.4	7.0	7.0	6.6	6.1	6.6
Economic Research Service, USDA	7.0	7.3	7.7	7.7	7.0	7.6

B. Relative Agricultural Exports, 2000

Measure of Agricultural Exports	California	Rest of the United States
Level ($ billions)	6.6	44.3
Relative to crop and animal output (%)	25.8	26.2
Relative to the above plus agricultural services and forestry output (%)	24.4	23.1
Relative to the above plus food, beverage, and tobacco manufacturing industries output (%)	8.1	6.5

SOURCES: For USDA data, U.S. Department of Agriculture (2002b); for Agricultural Issues Center data, University of California at Davis Agricultural Issues Center, http://aic.ucdavis.edu.

NOTES: U.S. Department of Agriculture data are on a fiscal year basis. The rest of U.S. figures are the difference of USDA data for total U.S. agricultural exports and Agricultural Issues Center data for California agricultural exports.

agricultural export products. Between 1996 and 2000, more than 39 percent of U.S. agricultural exports included feed grains, soybeans, and live animals and meat. In California, however, those products amounted to about 2.5 percent of California agricultural exports. Although California has a wide variety of agricultural exports and dominates some groups, its overall agricultural exports as a share of production are not much different from those of the rest of the United States.

Where Do California Exports Go?

Nearly half of all goods that started their export journey from California in 2000 went to Asia (Table 4.4). In the rest of the United States, in contrast, only a quarter went to Asia whereas another quarter exited to Canada. In fact, Canada is the top export destination for goods starting their export journey from the rest of the United States, whereas

Table 4.4

Regional Destinations of Exports from California and Other Regions, 2000

	California			Rest of the United States			Texas			New York		
Rank	Destination	Value ($ billions)	Share (%)	Destination	Value ($ billions)	Share (%)	Destination	Value ($ billions)	Share (%)	Destination	Value ($ billions)	Share (%)
	Total	129.7	100.0	Total	650.7	100.0	Total	112.4	100.0	Total	46.7	100.0
1	Asia	60.0	46.3	NAFTA	254.1	39.0	NAFTA	63.5	56.6	Europe	16.8	36.0
2	NAFTA	34.1	26.3	Europe	157.9	24.3	Asia	23.0	20.5	NAFTA	14.0	29.9
3	Europe	29.5	22.7	Asia	155.3	23.9	Europe	13.1	11.6	Asia	10.6	22.7
4	Western Hem.	3.6	2.8	Western Hem.	55.7	8.6	Western Hem.	8.7	7.7	Middle East	2.7	5.7
5	Middle East	2.0	1.5	Middle East	17.0	2.6	Middle East	2.2	1.9	Western Hem.	2.2	4.7
6	Africa	0.6	0.4	Africa	10.4	1.6	Africa	1.9	1.7	Africa	0.5	1.0
	Addendum											
	EU 15	27.2	20.9	EU 15	137.7	21.2	EU 15	11.0	9.8	EU 15	11.7	25.1
	Four Tigers	26.8	20.7	Four Tigers	57.9	8.9	Four Tigers	10.8	9.6	Four Tigers	3.9	8.4
	Top country:			Top country:			Top country:			Top country:		
	Mexico	19.0	14.7	Canada	161.4	24.8	Mexico	51.7	46.0	Canada	12.0	25.7

SOURCES: Massachusetts Institute for Social and Economic Research (2001, 2002).

NOTES: NAFTA denotes the countries of the North American Free Trade Agreement and includes Canada and Mexico. Western Hemisphere countries exclude Canada and Mexico. EU 15 denotes the European Union and includes Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the United Kingdom. The Four Tigers include Hong Kong, Korea, Singapore, and Taiwan.

Mexico is the top destination for goods starting their export journey from California.

The numbers regarding destination may not be all that they seem, however. Available data that show the destination of California merchandise exports reflect either the origin of movement of the export or the location of the exporter.[12] The origin of movement might be the state of production, but it could also be the state of a distributor, the state of a consolidator who puts together a multiproduct shipment, or the state of a foreign trade zone where the good was transformed. Likewise, although the location of the exporter could be the state of production, it also might be the state of company headquarters, the state of a wholesaler, or the state of some other type of export facilitator. This means that these data, when they indicate destination, may not reflect the destination of goods actually produced in California; rather, they indicate the destination of goods that are in some way only associated with California. Despite this problem, the match between the place of production and both the origin of movement and the exporter location is thought to be reasonable for manufacturing sectors.

Judging by the origin of movement, the data most frequently reported, California exports to Asia have historically been high. They amounted to 48 percent in 1988 and peaked at more than 54 percent in 1996. A dramatic change has taken place with NAFTA exports, which represented only 15 percent of California exports in 1988 but more than 26 percent in 2000. The rise of NAFTA and the slight fall in Asia as a destination are due largely to Mexico overtaking Japan in 1999 as California's leading destination. In fact, through 1996 Japan and Canada were California's number one and two destinations, in that order. Mexico overtook Canada in 1997. With Japan's economic decline, Mexico's dominance has increased further. For the 10 months through October 2002, California exports to Mexico totaled $13.6 billion and exports to number-two destination Japan totaled only $9.3 billion.[13]

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[12]This is explained more fully in U.S. Department of Commerce (n.d.).

[13]For a more detailed discussion of the destination of California exports and historic trends, see Haveman, Shatz, and Vilchis (2002).

The destination of goods from other top exporting states is quite different from that of California goods, partly because of geography (Table 4.4). Texas has long been number two but surpassed California in 2002, whereas New York has long been a distant third, with less than half of California's or Texas's export levels. As the easternmost of the three, New York serves as a jumping off point for exports to Europe and Canada. Perched on the Mexico border, Texas hosts a very high share of goods that start their export journey from that state and go to Mexico—46 percent in 2000. The different patterns also reflect production-sharing trends, with cross-border manufacturing taking place between Texas and four Mexican border states, between California and Baja California, Mexico, and between New York and Ontario. This pattern is even more pronounced for Michigan (not shown) in which the Detroit, Michigan–Windsor, Ontario, border area has become a dense web of automobile production.[14]

California's Goods Imports

U.S. clothing manufacturers produced $68 billion worth of goods in 2000. That same year, foreign clothing producers sold $47 billion worth of goods to the U.S. market, almost 70 percent of U.S. production. To many, this is globalization—a shirt from the Philippines, a Lexus from Japan, a plastic puzzle from China, and Marmite from the United Kingdom. Also to many, imports simply steal jobs from Americans and are to be avoided at all costs.

Imports have a number of effects on the economy. When they compete directly with domestic goods, they can lead to the decline of the industry producing those goods and can knock workers out of their current jobs and into lower-paying jobs or no jobs at all. Examples of this sort of decline include the U.S. automobile industry and the U.S. apparel industry. However, the fact that people keep buying imports despite these effects suggests that imports have other effects on the economy as well. Imported items can serve as a low-cost input to a product and make that product more competitive on world markets,

[14]In 2001, 54 percent of Michigan's exports went to Canada. Of these exports to Canada, 62 percent were in the transportation equipment industry.

contributing to increased job growth at home. Furthermore, an import expands the variety of products available—no imports, no French wine or German luxury sedans. Imports provide a pathway for technology transfer as well as competition to boost the productivity of U.S. industries. Finally, imports provide revenues for countries to use to buy U.S. exports.

Although no statistical authorities record the state of destination for imports, it is possible to gain a rough estimate of California imports in several ways. The remainder of this section presents two such estimates. The first supposes that the ratio of imports to GSP in California is the same as that in the United States as a whole (Panel A of Table 4.5). The table shows the estimated level of imports for three measures of imports, which are explained in the notes to the table. Using the ratio of U.S. imports to U.S. GSP, California's purchases of imports range between 10 and 13 percent of its GSP.[15] These figures suggest that in 2000, for every dollar worth of exports, Californians purchased $1.36 worth of imports. For the rest of the United States, this figure was $1.58 worth of imports.[16]

Imports can be inputs into production as well as final purchases. This fact suggests another way to estimate California imports—use California's industrial structure to estimate imported inputs, and then use California's final-use spending to estimate imports for final use.[17] Panel B of Table 4.5 shows these estimates for 1998.[18] They are most comparable to the landed duty-paid value of Panel A of Table 4.5, although they include both goods and services imports.[19]

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[15]By construction, this is the same ratio as that for the United States.

[16]Although these numbers suggest a California trade balance, such a concept is not helpful at the state level because California also purchases from and sells to the rest of the United States. National trade balances will have different determinants from the values of exports and imports between a subnational region and foreign countries.

[17]Final-use purchases include consumption, investment (such as purchases of plant and equipment), and government spending.

[18]These estimates are based on the national input-output accounts of the United States and the national import matrix (U.S. Department of Commerce, 1998, 2002a; Kuhbach and Planting, 2001; Planting and Kuhbach, 2001). The accounts go only through 1998, so more recent imports were not estimated.

[19]Services trade is discussed more fully in the services trade chapter.

Table 4.5

Estimates of California Goods Imports

A. Imports Estimated as a Percentage of Gross State Product

	1998	1999	2000
Levels ($ billions)			
Imports for consumption, customs value	116.6	134.1	163.0
Imports for consumption, CIF value	120.6	138.7	168.5
Imports for consumption, LDP value	123.0	141.1	171.1
% of GSP			
Imports for consumption, customs value	10.4	11.0	12.1
Imports for consumption, CIF value	10.7	11.3	12.5
Imports for consumption, LDP value	10.9	11.5	12.7
Addendum			
California GSP	1,125.3	1,223.5	1,344.6
California exports	95.8	97.9	119.6
Exports less imports—customs value basis	–20.8	–36.2	–43.4

B. Imports Estimated Using the United States Import Matrix, 1998

Value of imports—California ($ billions)	
Imports for inputs	65.4
Imports for final use	67.0
Total goods and services imports	132.4
Imported inputs relative to final-use imports (%)	
California	97.7
United States	97.5

SOURCES: For imports, U.S. International Trade Commission (2002); for exports, Massachusetts Institute for Social and Economic Research (2001, 2002); for GSP, U.S. Department of Commerce (2001c). Computations are based on data from U.S. Department of Commerce (2002a); Kuhbach and Planting (2001); Planting and Kuhbach (2001); and U.S. Department of Commerce (2001c).

NOTES: Customs value is the value of the good in the foreign country. CIF value is the customs value plus all costs, insurance, and freight (CIF) involved in bringing the good to the United States. LDP value is the landed duty-paid value—the CIF value plus duties paid in the United States. Exports are Foreign Trade Division NAICS-based exports.

The key point is that California actually consumes about as many imports as inputs as it does in the form of final purchases—an import purchased in California is just as likely to be an integrated circuit from Malaysia as a designer shoe from Italy. This is also true for the United States as a whole. This pattern can vary by year. In 1997, both California and the United States consumed more imports as inputs than as final goods.[20] The reversal in 1998 was due to a 2.4 percent rise in the use of imported inputs but an 8.7 percent rise in the purchase of final-use imports, sparked mostly by purchases of consumption goods and investment goods.

Overall, in 1998, imported inputs totaled about 6 percent of the value added (the value of labor compensation and profits) produced by California industries, although this varied by industry. Among the most intensive users of imported inputs were the apparel, lumber and wood products, leather products, primary metal products, machinery, and transportation equipment industries. For all of these industries, imported inputs totaled more than 20 percent of value added. Thus, some industries depend on imports as part of their production processes. The estimates also suggest that in better economic times, Californians are more likely to purchase imports either to consume or to use in the running of their businesses.

Conclusion

The rapid rise of FDI has meant that exports are not as important in international business as they once were. In 2000, U.S. foreign affiliates sold $1.7 trillion worth of goods to foreign countries, and U.S. exporters sold $772 billion worth of goods to foreign countries. However, exporting and importing still play an important role in globalization debates and policy. The effects of each on an economy as large as that of the United States or California are not as large as on most economies in the world. In 2001, U.S. merchandise exports plus imports totaled only 18.8 percent of U.S. GDP. For the rest of the world, merchandise exports plus imports totaled 50.3 percent of rest-of-world GDP.[21]

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[20]Based on computations using U.S. Department of Commerce (2001e).

[21]Data are from World Bank (n.d.).

However, neither are the effects of merchandise trade simple, even in an economy as large as that of the United States or California. Exports can bring increased profits and jobs but can also expose the California economy to the health of other economies. Imports can cause workers to move to less-desirable jobs—or to no jobs at all—but also bring cheaper inputs, more product variety, and new job opportunities.

More California manufacturing output is shipped overseas, relative to production, than is the case in other states, whereas more California manufacturing workers and even nonmanufacturing workers rely on exports for their jobs than do so in other states. Measuring imports is more difficult. This chapter presented two estimates that can serve as a starting point. They indicate that imported inputs are just as important to the California economy as more visible final-use imports.

5. Trade in Services

By now, the U.S. trade deficit is old news—negative $36 billion in 1992, negative $102 billion in 1996, and negative $346 billion in 2001. But these figures mask a large surplus in services trade. Although foreigners sold $428 billion more goods to the United States in 2001 than they bought, they bought $80 billion more worth of services from the United States than they sold.

World trade in services is growing. The Uruguay Round Agreements of 1994 formally brought services trade under international discipline through the General Agreement on Trade in Services. In 2001, U.S. services exports accounted for 28 percent of total U.S. exports. For every dollar's worth of goods exports, Americans sold 39 cents worth of services exports.

Services exports play to California's strengths and already represent an important means by which the state's economy has gone global. Services trade for California means foreign visitors cruising Wilshire Boulevard and stopping to ponder the La Brea Tar Pits, foreign students struggling with the lessons of professors in California's universities, foreign businesses hiring advice from California consultants, foreign ships buying bunker fuel at the Port of Long Beach, foreigners watching Hollywood movies in cinemas around the world, and foreign residents and businesses buying software painstakingly written in homes and offices throughout California. In other words, a large share of services trade involves California's top products—tourism, education, port services, research and development, professional and business services, entertainment, and software.

Of course, there are services imports as well. Visiting foreign lands goes on the books as a service import and therefore counts as globalization. Visitors to low-wage countries also find that such nontradable items as hotel rooms and haircuts are cheaper because of

those wage differentials—the service equivalent of having a product assembled in a low-wage country.

Services trade has similar effects on an economy as goods trade. Services exports can bring higher returns than domestic sales, and services imports can provide lower-priced products but can also compete with domestic service providers in some cases. Services trade is different in a few important ways, however. Services trade can involve much more people-to-people interaction (such as in the case of tourism) and sometimes has to be produced in the country where it is consumed (such as in the case of some consulting activities). In this way, services trade can personalize globalization.

This chapter will describe trade in services and then estimate California's services trade, because figures on services trade by state are not kept. It will conclude with a brief discussion of what services trade might mean for the future of globalization in California.

Understanding Services Trade

At their simplest, services exports are any sale of a service by Americans to a foreign national, and services imports are any sale of a service by a foreign national to an American. However, the details are a bit more complicated, as services trade can include the sale of both services and goods, such as the goods that foreign tourists buy while visiting America.

The United States divides private services trade into five broad categories: (1) travel, (2) passenger fares, (3) other transportation, (4) royalties and license fees, and (5) other private services. An additional two categories involve services trade by the U.S. government.[1] The remainder of this chapter will concentrate on private services trade, with more complete definitions of the five private categories and two public categories given in Appendix C.

Services exports have run between 27 and 29 percent of total U.S. exports since at least 1992, whereas services imports have run between 15 and 18 percent of total U.S. imports. Exports have always been higher than imports during that time, giving the United States a services trade

[1]Mann and Borga (2001).

surplus. The vast majority of U.S. services trade is private services trade, with exports slightly more private than imports (95 percent private for exports and 91 percent private for imports in 2001). The largest category of exports is "other private services," reflecting America's strength in education, banking, telecommunications, and filmmaking (Figure 5.1). The largest category of imports is travel, reflecting Americans' desire and ability to see the world or engage in business trips to foreign countries.

SOURCE: U.S. Census Bureau (1999 and other years).

Figure 5.1—U.S. Private Services Trade, by Category, 2001

California Services Trade

As noted above, no statistical agency tracks services trade by state. Therefore, this chapter presents two estimates of California services exports. The first supposes that California services trade relative to the size of the state's economy is the same as U.S. services trade relative to

the national economy (Table 5.1).[2] These estimates indicate that for every dollar of goods exports, Californians export at least 35 cents worth of services. Put another way, the total value of private services exports was greater than the combined exports of the second through sixth top goods-producing industries in 1999, including industrial machinery, transportation equipment, crops, and processed foods.[3]

Estimates based on the total size of the economy, however, do not take account of the industrial structure of the state. Thus, a second way to think about California services exports is to estimate them sector by

Table 5.1

California's Estimated Services Trade Relative to California's Economy, 1999

Total services trade, $ billions	
California GSP	1,229.1
Estimated California services exports	36.0
Estimated California services imports	25.0
Private services trade	
California private GSP	1,097.6
Estimated California private services exports	34.2
Estimated California private services imports	23.2
Addendum	
Total services exports relative to total goods exports, %	36.8
Private services exports relative to total goods exports, %	35.0

SOURCES: For services trade, U.S. Census Bureau (1999 and other years); for exports, Massachusetts Institute of Social and Economic Research (2001, 2002); and for GSP, U.S. Department of Commerce (2001c).

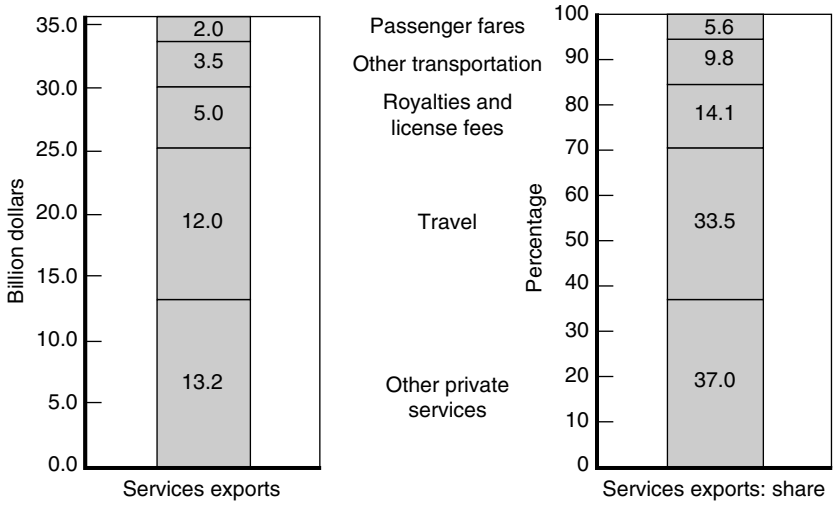
NOTE: Goods exports are Foreign Trade Division NAICS-based exports (see the goods trade chapter for more information).

[2]U.S. services exports to U.S. GSP in 1999 were 2.9 percent and services imports were 2.0 percent. U.S. private services exports were 3.1 percent of U.S. private GSP and private services imports were 2.1 percent.

[3]The top industry was computers and electronic products, credited with almost $50 billion worth of exports. The next five included nonelectrical machinery, transportation equipment, chemicals, miscellaneous manufactures, agricultural products, and food and kindred products. Together, exports from those five totaled $31.4 billion in 1999.

sector. For example, in 1997, exports of legal services from the United States totaled $2.2 billion. Meanwhile, total revenues within the legal services industry were $128.5 billion in the United States and $18.8 billion in California, or 14.6 percent of the U.S. total. Applying this ratio yields an estimate of $324.6 million worth of legal services exports from California.[4]

This approach boosts California's services exports to $35.7 billion, or 3.3 percent of private GSP, compared to 3.1 percent for the rest of the United States (Figure 5.2).[5] What boosted California's figures? California's travel exports, at 33.5 percent, are far higher than those of the rest of the United States, at 28.5 percent. Royalties and license fees



SOURCES: Estimates are based on computations described in the text and in the detailed data appendix (Miloslavsky and Shatz, 2003). The data appendix also describes sources more fully.

Figure 5.2—California Services Exports Based on Disaggregated Sectors, 1999

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[4]Detailed data on services exports are from Mann and Borga (2001). Data on revenues are from the 1997 Economic Census (U.S. Census Bureau, n.d.a), available at http://www.census.gov.

[5]Computing private services imports by this method would make little sense, since there is little reason to believe that services sales and services purchases should be correlated by sector.

are about equal (14.1 percent for California and 14.2 percent for the rest of the United States). Other transportation exports are slightly lower (9.8 percent for California and 10.1 percent for the rest of the United States), as are "other private services" exports (37.0 percent compared to 38.6 percent), and passenger fares are much lower (5.6 percent compared to 8.1 percent). This means that California's services export strengths currently lie with tourism, intellectual property, port services, and professional services, in that order.

It is within these broad sectors, however, that the real action takes place. By these estimates, California captures about one-third of U.S. services exports in the areas of travel from Mexico, fees for foreign distribution of films, and royalties and license fees for software. It captures about 20 percent (or more) of U.S. services exports in agricultural services, accounting services, research and development services, and air-freight services. All these areas have potential to expand. As Mexico grows richer, travel from that country to the United States should expand. As the world grows richer and intellectual property rules are enforced more rigorously, film rental fees should increase. Furthermore, as worldwide production techniques become more technologically advanced, demand for software and research and development should increase. And more and more goods trade is moving by air, meaning that California's air-freight services exports should expand in the future.

Conclusion: The Future of Services Trade

In November 2001, the nations of the world agreed at Doha, Qatar, to start a new multilateral negotiating round to lower trade barriers. At that time, however, they had already been negotiating services liberalization for almost two years as part of their commitments in the 1994 General Agreement on Trade in Services. As of mid-2002, proposals had been tabled covering accounting, consulting, energy, express delivery, and numerous other services.

World services exports have grown nearly 9 percent each year since 1975, compared to 7 percent for world income. The United States and California have played a role in that growth. California's role appears to

have been driven by its highly educated population and its geography, which makes it a travel destination and an important air-freight location.

The effects of services trade run beyond simple economic exchange. Much goods trade can take place without the buyer knowing the producer. Few people in the United States have met the foreign workers who sew their clothing or make their cars. In contrast, much services trade takes place face-to-face, especially the two biggest components, travel and "other private services." When a delegation of foreign journalists and scholars tours the United States, or when foreign students come to America to complete graduate degrees, the United States chalks up services exports. But these contacts also create personal bonds with Americans, bonds that can move the relationship beyond business. In this sense, growing services trade may accelerate the globalization of ideas and social practices, not just economies.

6. California's Ports

> Events of a magnitude too vast even for conjecture are taking place today around the rim of the Pacific: in China, India, the Philippines, Java, Sumatra, French Indo-China, the Soviet Far East. Regardless of how these events work out, one thing is certain: California is destined to occupy in the future, not a marginal, but a central position in world affairs. The ports of the west coast will be the ports through which the expanding trade and commerce of the West will flow to ports throughout the entire vast area of the Pacific. Once the impact of this development really begins to make itself felt, California will come to occupy a new position in the western scheme of things; not that of the Colossus of the West, the Big Bully, the Untamed Panther, but the state which will link western America with the Orient.
>
> *— McWilliams (1949, p. 365)*

Trade with Asia and trade by air are two keys to understanding California's role as a port state. Trade with Asia dominates its port activities, and goods entering and exiting the United States through California are more likely to move in the bellies of airplanes than in trucks and ships compared to goods moving through ports in most other states.

Port activity is one more manifestation of the globalization of the California economy. In some ways, port planning and infrastructure provision is the closest the state and its localities can ever get to influencing national trade patterns. Although state officials can lobby their federal counterparts, most have limited say regarding overall U.S. trade policy, including trade agreements, tariff rates, border rules, and special preferences. However, port infrastructure directly influences where goods enter and leave the United States and therefore can determine benefits and costs that can accrue to a state.

Ports and the services they provide have a number of effects on an economy. They can bring wages and jobs at ports and at transportation

and logistics companies, and they can attract export- or import-intensive manufacturers that want to minimize their distance to port. They can also bring road, maritime, and air-traffic congestion as well as air and water pollution. A more extreme effect would include a terrorist bomb smuggled in a ship and detonated at a port.

Although port infrastructure is one way the state can directly shape international commerce, California state government actually has little to do with most of the ports. In general, California's ports are run by local authorities and are self-funded. Major improvements to the ports themselves usually come from port borrowings or federal money. The state has been involved in port-related infrastructure, however, in particular helping fund the Alameda Corridor. This $2.4 billion project, completed in 2002, created a 20-mile railroad line below street grade that connects the seaports of Los Angeles and Long Beach with the transcontinental rail network east of Los Angeles. By doing so, it eliminated approximately 200 street-level rail crossings and created a speedier means of moving goods to and from port.[1]

There may be value to thinking about ports on a statewide basis, however. Certainly, California is a major port state because of its location on the Pacific Ocean, its long coastline, and its proximity to Asia. However, other West Coast states have ports as well. Furthermore, the recent seaport problems caused by disagreements between the Pacific Maritime Association (the shipping companies and terminal operators) and the International Longshore and Warehouse Union (the dock workers) have apparently caused some shippers to consider shifting their trade from West Coast to East Coast ports.[2]

The remainder of this chapter will describe the context for understanding ports in the United States and then focus on ports in California, starting with trade through California customs districts. Then, it will discuss trade through individual ports, and finally will focus more narrowly on exports through individual ports.

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[1]See Alameda Corridor Transportation Authority website, http://www.acta.org/.

[2]Flanigan (2002).

Understanding Ports in the United States

Ports of entry in the United States are divided into 47 customs districts, of which California has three: the customs districts of San Diego, Los Angeles, and San Francisco. Within each of these districts are numerous ports—in California there are about 36, including the seaport of Sacramento and Ontario International Airport, for example. The vast majority of trade, however, enters and exits primarily through six gateways: the Port of Los Angeles (sea), the Port of Long Beach (sea), San Francisco International Airport (air), Los Angeles International Airport (air), the Port of Oakland (sea and air), and Otay Mesa (land).

Customs district and port data do not reflect exports by California firms or imports to California firms. Rather, they reflect exports by firms throughout the United States and imports by firms and consumers throughout the United States. Occasionally, inferences can be made that these imports or exports reflect the activities of West Coast firms and industries. In 2001, for example, almost 75 percent of cork imports to the United States, largely from Portugal, entered through the customs district of San Francisco, which includes America's dominant wine regions.

Trade Through California Customs Districts

Since 1998, the Los Angeles customs district has been the third-busiest exit for exports (by value) in the United States. The San Francisco customs district has hovered at fourth or fifth, depending on the year. For imports, Los Angeles has led all customs districts since at least 1996, and San Francisco has ranked fourth, although it fell to number six in 2001.

California customs districts handled a bit less than 20 percent of all U.S. exports, with a drop in 2001 (Table 6.1). They served as the entry point for slightly higher levels of imports—20 percent of imports in 2000 and 18.7 percent in 2001. The California districts have only modest importance regarding trade with most regions of the world but dominate in trade with Asia. Between 45 and 50 percent of America's exports to Asia went through California, whereas between 39 and 42

Table 6.1

California and East Coast Customs Districts: Trade as a Percentage of Total U.S. Trade, by Region

A. California Customs Districts

	Exports		Imports	
Region	2000	2001	2000	2001
Total	19.0	17.4	20.0	18.7
NAFTA	5.2	5.6	5.3	5.4
Rest of western hemisphere	3.7	3.8	6.1	6.2
Europe	12.2	11.0	9.0	8.8
Middle East and North Africa	6.9	4.9	10.2	11.2
Sub-Saharan Africa	5.3	4.8	2.0	2.8
Asia and Oceania	49.4	45.6	42.2	39.8
Addendum				
Mercosur	5.0	4.8	5.3	4.8
European Union	12.8	11.6	9.3	9.1
Greater China	50.3	48.0	43.6	42.5
ASEAN	55.8	48.7	48.6	45.3

B. East Coast Customs Districts

	Exports		Imports	
Region	2000	2001	2000	2001
Total	22.7	23.0	25.9	26.3
NAFTA	17.6	16.2	17.4	16.6
Rest of western hemisphere	13.5	13.9	24.0	24.7
Europe	38.1	40.0	48.8	48.4
Middle East and North Africa	48.0	48.7	29.5	31.6
Sub-Saharan Africa	33.4	28.8	44.3	48.3
Asia and Oceania	15.5	15.6	18.9	19.6
Addendum				
Mercosur	21.0	20.1	40.7	37.3
European Union	36.8	38.7	47.6	47.3
Greater China	12.2	11.3	17.0	17.8
ASEAN	17.2	16.7	19.4	19.3

SOURCE: U.S. International Trade Commission (2002).

NOTES: Mercosur is a customs union in South America comprising Argentina, Brazil, Paraguay, and Uruguay. European Union, a customs and political union in Europe, comprises Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the United Kingdom. Greater China denotes Hong Kong, the People's Republic of China, and Taiwan. ASEAN (Association of Southeast Asian Nations) is a 10-member economic area comprising Brunei Darussalam, Burma, Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, and Vietnam. East Coast customs districts include the customs districts of Boston, Massachusetts, Providence, Rhode Island, Ogdensburg, New York, Buffalo, New York, New York, New York, Philadelphia, Pennsylvania, Baltimore, Maryland, Norfolk, Virginia, Charlotte, North Carolina, and Charleston, South Carolina. Exports are total exports, including reexports, valued on a free alongside ship (FAS) basis. Imports are general imports valued on a customs value basis.

percent of America's imports from Asia came through California. These export and import numbers are even higher for trade with China and with ASEAN.

California's strength as an Asian-trade gateway arises almost completely because of location. Shipping by both air and water is simply quicker from the West Coast of the United States to Asia than from the East Coast. In addition, regarding sea trade, the shipping industry is increasing its use of so-called post-panamax vessels—ships first built in 1988 that are too large to pass through the Panama Canal and therefore stay on one ocean—meaning there is less ability for the Asia trade to go anywhere else but the West Coast ports as long as these ships are used. One authority writes that most post-panamax vessels stop at only two ports in North America per trip, one of either Los Angeles or Long Beach, and one of either Oakland or a Pacific Northwest port (Smythe, 2001). In fact, even larger ships are coming—super-post-panamax vessels—and the same writer speculates that they will call only at Los Angeles or Long Beach.

The geographic nature of port use can be seen by looking at the destination of exports and sources of imports flowing through the East Coast customs districts (Table 6.1, again). They handle a great deal of trade with Europe, the Middle East, and Africa but handle less than 16 percent of U.S. exports to Asia and less than 20 percent of U.S. imports from Asia.

Another factor that differentiates California customs districts from those of the rest of the United States is the nature of that trade. The vessel that stops at the ports of California is much more likely to have wings than are the vessels that stop at the ports of the rest of the United States or even the East Coast. Total trade through the San Francisco customs district was 74 percent by air (by value) in 2000 and almost 70 percent in 2001 (Table 6.2). For California customs districts as a whole, those figures were 44 percent and 38 percent, respectively. Although the fall from 44 percent to 38 percent is large, California still places well ahead of the rest of the United States and the East Coast. Only about one-quarter of all trade through the customs districts of the rest of the United States moved by air both those years, and about one-third of all trade through the East Coast ports moved by air. These ports

Table 6.2

Air Value of Trade Relative to Total Value of Trade (%)

	Exports		Imports		Total Trade	
	2000	2001	2000	2001	2000	2001
California	59.3	54.9	35.1	28.3	44.2	38.2
Customs district of Los Angeles	53.8	49.4	24.3	20.6	34.2	30.0
Customs district of San Diego	1.4	0.9	1.2	1.3	1.3	1.2
Customs district of San Francisco	79.2	77.7	69.8	62.5	74.1	69.8
Rest of the United States	31.1	30.1	22.9	22.3	26.1	25.3
East Coast	41.0	40.0	29.5	28.0	33.6	32.3

SOURCES: Massachusetts Institute for Social and Economic Research (2001, 2002).

include John F. Kennedy International Airport in New York, the second-largest export gateway in the United States.

Of the three California districts, only the customs district of San Diego is not air-intensive. About 85 percent of goods through San Diego move by truck or rail to Mexico.[3] Although California does not share a land border with Canada, the U.S. Bureau of Transportation Statistics records $21 million worth of truck imports from Canada and $11 million worth of rail imports from Canada for the Port of Los Angeles in 2001. No other California truck or rail trade with Canada is reported.[4]

Nearly the entire *volume*, as opposed to the *value*, of goods moves by ship or truck, rather than by air. In 2000, the weight of all ship exports moving out of California ports totaled 38.05 *billion* kilograms, and the total weight of all air exports moving out of California ports totaled 575.7 *million* kilograms, or only 1.5 percent of ship exports.[5] In

[3]Land crossings gobble up a very large share of U.S. trade because of economic integration with Canada and Mexico. The Detroit customs district (bordering Windsor, Ontario, Canada) was the leading export customs district in the United States in 1998, 1999, and 2001, and it has been the number-three import gateway since at least 1996, according to trade data available at the United States International Trade Commission.

[4]California also hosts modest pipeline trade. In 2001, California ports handled $6.1 billion worth of pipeline trade, of which $4.7 billion was imports from Canada and $1.4 billion was imports from Mexico (U.S. Department of Transportation, n.d.a).

[5]Massachusetts Institute for Social and Economic Research (2001, 2002).

addition, the majority of goods (by value) still moves by ship, and the two leading ports for total trade—exports plus imports—remain the seaports of Los Angeles and Long Beach because of the high volume of imports they handle. But insofar as wages and profits are based on the value of goods, the role of California's airports in international trade cannot be ignored.

Air trade is also a sign of the state's role in international production-sharing. Air trade has been expanding and involves goods that have a high value-to-weight ratio, that are needed quickly, and that are part of international production-sharing chains. These characteristics fit high-technology components, and high-technology components are the leading items traded by air through the customs districts of California. In fact, the same three types of products are both the leading air exports and the leading air imports, implying that California's airports play a key role in production-sharing for America's high-technology industries.

In 2001, the top three air-shipped exports constituted 25 percent of all exports—not just air-shipped—through the ports of California (Table 6.3). This was a decrease from 30 percent in 2000. A very high proportion of total U.S. exports in these goods leaves the United States by air through California. Almost 45 percent of all exports of integrated

Table 6.3

Leading Air-Traded Commodities as a Percentage of Total Trade, 2001

	Exports		Imports	
	Share of All U.S. Exports Through California Districts	Share of All U.S. Exports of the Commodity	Share of All U.S. Imports Through California Districts	Share of All U.S. Imports of the Commodity
Electronic integrated circuits and microassemblies	14.2	44.6	6.4	52.0
Automatic data processing machines	6.9	32.1	5.2	23.2
Parts for office machines	4.3	27.4	3.2	27.4
Total	25.4	—	14.8	—

SOURCE: Massachusetts Institute of Social and Economic Research (2001, 2002).

circuits go by air through California, of which 23 percent flow through the customs district of San Francisco and 21 percent flow through the customs district of Los Angeles.

A lower share of imports comes by air through California, only about 15 percent in 2001, compared to almost 21 percent in 2000. But again, California customs districts play a very important role in total U.S. imports in these items. More than half the integrated circuits that enter the United States do so by air through California (down from about 60 percent in 2000). Of this amount, 13 percent of U.S. imports of integrated circuits enter the country by air through the customs district of Los Angeles, and 39 percent enter through the customs district of San Francisco. In 2000, the figure for San Francisco was almost 45 percent.[6]

This air trade in integrated circuits was heavily Asia-oriented. Nine of the top 10 export destinations for integrated circuits exiting by air from California customs districts were in Asia. The United Kingdom, the only non-Asian destination, ranked number 10. Nine of the top 10 sources for imports of integrated circuits flying into California customs districts were also Asian. The 10th was again European—Portugal. California ports are an important link between U.S. high-technology firms and the Asian factories that make and assemble their products.

Trade Through Individual Ports

Total Trade

Total trade figures, as opposed to just export figures, are a valuable indicator of total port activity and thus port revenues, traffic congestion, and other effects. Despite the importance of air trade to California ports, the top ports by value are the two big seaports, Los Angeles and Long Beach (Table 6.4). They lead because of the large values of imports they handle. They are also major world ports in one widespread form of trade, that of containerized cargo.

Not only do goods move internationally by a variety of modes—airplane, ship, truck, and pipeline—but they move in a variety of forms

[6]The drop reflects the global slowdown in the technology industry. Firms in the technology industry ship a higher proportion of their products by air than do firms in other industries.

Table 6.4

California's Top Ports, by Value, 2000

Port	Primary Mode	U.S. Rank	Exports ($ billions)	Imports ($ billions)	Total ($ billions)
Port of Los Angeles	Water	2	16.7	85.2	101.9
Port of Long Beach	Water	3	16.9	81.3	98.2
San Francisco International Airport	Air	5	41.8	46.9	88.7
Los Angeles International Airport	Air	8	41.7	35.7	77.4
Port of Oakland	Water	17	13.6	15.6	29.2
Port of Otay Mesa	Land	25	8.1	10.7	18.8
Port of Calexico-East	Land	48	3.5	4.8	8.3
Port of San Francisco	Water	n.a.	2.3	4.6	6.9
Port of San Diego	Water	n.a.	0.5	4.5	5.0
Port Hueneme	Water	n.a.	0.3	4.3	4.6

SOURCES: For land data, U.S. Department of Transportation (n.d.a); for waterborne data, U.S. Department of Transportation (n.d.b); for air import data, the U.S. Census Bureau (2002); and for air export data, the Massachusetts Institute for Social and Economic Research (2001, 2002). Rankings are based on U.S. Department of Transportation (2002).

within those modes as well. Traditionally, goods were sent by ship in bulk form—loose in the holds of ships, such as grain or coal—or in break-bulk form—individual units of goods such as bales, cartons, drums, or pieces of steel, also stored in the holds of ships. But in 1956, building on earlier experiments, Malcolm McLean introduced containerized shipping, dramatically lowering costs.[7] Today, the vast majority of the volume of nonbulk world trade, such as automobile parts, shoes, toys, and even frozen French fries, moves in shipping containers. This innovation is considered one reason for the huge expansion in global trade. Containers can be stacked on specially built ships, moved by rail, or attached to a truck tractor and moved along any U.S. interstate.

Although Los Angeles overtook Long Beach during the past three years, both have remained in the top 10 among container ports worldwide in terms of "twenty-foot equivalent units" (TEUs) of

[7] *The Economist* (2001) and Bauer (1988).

containers handled—the standard measure. Combined, they rank third in the world, a reasonable comparison as they are on the same bay (Table 6.5). What makes Los Angeles and Long Beach different from Hong Kong and Singapore, the top two ports, is that the Asian ports are largely transshipment ports, acting as hubs for ships from so-called feeder ports, reloading the cargo on larger ships and then sending it to a final destination. Among the top ports, Kaohsiung, Rotterdam, and Pusan are also heavily involved in transshipment operations (Mundy, 2000). In contrast, Los Angeles, Long Beach, and Oakland (with about 1.6 million TEUs in 2001) are primarily final destination ports. As a result, most of the goods that flow through the ports also flow through the Los Angeles or Oakland areas by truck and rail.

Table 6.5

Top Container Ports Worldwide, 1999 to 2001

	1999		2000		2001	
Port	Rank	TEUs	Rank	TEUs	Rank	TEUs
Hong Kong	1	16.2	1	18.1	1	17.8
Singapore	2	15.9	2	17.1	2	15.5
Pusan, South Korea	4	6.4	3	7.5	3	7.9
Kaohsiung, Taiwan	3	7.0	4	7.4	4	7.6
Shanghai, China	7	4.2	6	5.6	5	6.3
Rotterdam, Netherlands	5	6.3	5	6.3	6	6.1
Los Angeles, California	8	3.8	7	4.9	7	5.2
Hamburg, Germany	9	3.7	9	4.2	8	4.7
Long Beach, California	6	4.4	8	4.6	9	4.5
Antwerp, Belgium	10	3.6	10	4.1	10	4.2
Addendum						
San Pedro Bay ports	3	8.2	3	9.5	3	9.6

SOURCE: Port of Hamburg (2002).

NOTES: Table shows the number of twenty-foot equivalent units (TEUs) of containers passing through each port, in millions. San Pedro Bay ports are the ports of Los Angeles and Long Beach, combined.

Exports

Because state policy focuses on exports, it is worth asking which California ports are most active in sending U.S. goods out of the country. The answer is, disproportionately, the airports (Table 6.6). San

Table 6.6

California's Top Export Ports by Value, 2000

Port	Rank	Value ($ billions)	Share (%)	Cumulative Share (%)
San Francisco International Airport	1	41.8	28.5	28.5
Los Angeles International Airport	2	41.7	28.4	56.8
Port of Long Beach	3	16.9	11.5	68.3
Port of Los Angeles	4	16.7	11.4	79.7
Oakland	5	13.6	9.3	89.0
Otay Mesa Station	6	8.1	5.5	94.5
Calexico-East	7	3.5	2.4	96.9
Port of San Francisco	8	2.3	1.5	98.4
San Diego	9	0.5	0.3	98.7
Tecate	10	0.4	0.3	99.0

SOURCES: For land data, U.S. Department of Transportation (n.d.a); for waterborne data, U.S. Department of Transportation (n.d.b); for air import data, the U.S. Census Bureau (2002); and for air export data, the Massachusetts Institute for Social and Economic Research (2001, 2002). Rankings are based on U.S. Department of Transportation (2002).

Francisco International Airport and Los Angeles International Airport were the top two California export gateways in 2000. Oakland, with combined sea and air operations, was the fifth, and San Diego, which also has sea and air exports, was ninth. The two main seaports, Long Beach and Los Angeles, were third and fourth, respectively, and the seaport of San Francisco and three land crossings with Mexico rounded out the top 10. Furthermore, just a few ports handled most of the exports. The top five handled almost 90 percent of all exports by value, and the top three handled more than two-thirds.

The value of exports that flow through San Francisco International Airport and Los Angeles International Airport is so great that in 2000, they were the third- and fourth-largest export gateways in the country, out of about 430 designated ports. The top two were New York's John F. Kennedy International Airport and Detroit, the vast majority of whose goods move by land to Canada.

Conclusion

Although ports can be viewed as one aspect of a state's globalization, they stand apart from imports, exports, and FDI in a number of ways.

First, they give state and local officials an opportunity to influence the pattern of U.S. trade. Efficient ports act as trade facilitators in general by making trade less costly and can attract trade flows through specific locations in particular by making trade through California, for example, less costly than trade through Oregon, Washington, or British Columbia. Other trade policies, such as tariff rates and nontariff barriers, are generally closed to all but national officials.

Second, ports can influence the geography of production, with companies using short production cycles locating near ports. For example, the largest importer using the Port of Oakland is New United Motor Manufacturing Inc. in Fremont, the General Motors-Toyota joint venture, which takes frequent shipments of automobile parts.[8] In addition, at least a portion of the high-technology air trade through San Francisco International stems from Silicon Valley technology firms that want to move their components into and out of the United States quickly. Therefore, port planning and infrastructure can serve as a policy tool for shaping the industrial geography of a region.

Apart from the role they play in facilitating trade and shaping economic geography, the activities of California's ports—along with California exports and FDI—are another sign of the state's prominent role in production-sharing activities. Goods moving by air to Asia or by truck to Mexico are just as likely to be inputs for products to be sent back to the United States as they are to be goods for final purchase in their destination country.

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[8]Port of Oakland (2002).

7. Understanding Business *With* Borders

To understand California's globalization, this report has proposed that a useful definition for the California economy should include

- Establishment by California firms of subsidiaries in foreign countries (outward FDI).
- Establishment by foreign firms of subsidiaries in California (inward FDI).
- The sale of goods by Californians to foreign residents and the purchase of goods by Californians from foreign residents (merchandise trade).
- The sale to foreigners and purchase from foreigners of services as diverse as university education and movie rights (services trade).
- Port services—the transport and trade facilitation activity at California's airports, seaports, and land borders.

Trade, FDI, and port operations are highly visible aspects of globalization and all affect the standard of living of Californians. They are also influenced by the varied business climates and industrial structure of the state and are directly influenced by state and local policies.

On some standard measures of globalization, in particular the level of inward and outward FDI, California is unremarkable. It is also clear that borders still exist—California's businesses have not shown that they carry out cross-border operations as easily as interstate operations. At least 70 percent of the manufactured items and at least 80 percent of the agricultural items produced in the state stay within the United States, which accounts for only about one-third of the world economy.

Although California's level of globalization is low on some measures, it is quite high on other measures. What characterized the globalization of the California economy is that in those parts of its economy where

California is most international, it is at the leading edge of trends in globalization. The world is moving toward more production-sharing—the division of production processes among different countries. California is already there, with its outward FDI in Asia, its vast goods exports in the computer industries, and its provision of air-trade services for companies that depend on timely deliveries of inputs. The world is moving toward greater trade in services. California is already there, with its high level of services exports. Goods are increasingly moved by airplane rather than ship, in part because of the nature of goods being traded and in part because of changes in production processes. California port services exemplify this trend, with two-thirds to three-quarters of the value of all goods traded through the customs district of San Francisco transported by air. Finally, Asia remains the fastest-growing world region economically, and California's Asia business links are far more extensive than those of the rest of the United States.

In 1949, the author Carey McWilliams described Californians as living on "the edge of novelty" regarding their willingness to experiment with new goods, services, and methods of doing business. Summing up the rapid growth of the state, he wrote, "California is not just another American state: it is a revolution within the states."[1] The sentiments apply to California's globalization.

The nature of California's globalization stems from its geography—on the Pacific facing Asia, and bordering Mexico—and its industrial and general economic profile, including the very high education levels among some members of its population.[2] Given the current profile of California's globalization, there are a number of directions Californians and their policymakers can look toward, especially if they view international economic activity as an important component of the success of the California economy.

First, although globalization has brought many benefits, it has also brought problems. There is good evidence that increased trade, in part

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[1]Both quotes are from McWilliams (1949), p. 218 and p. 24, respectively.

[2]U.S. Census Bureau figures show that in 2000, 26.6 percent of the California population age 25 or more had at least a bachelor's degree, whereas this figure was 24.1 percent in the rest of the United States (U.S. Census Bureau, n.d.b).

with developing countries, has helped widen income inequality in the United States, although the magnitude is debated. Insofar as California's goods-producing sector is now smaller relative to the state's size than is the goods-producing sector in other states, California may be affected less by this than the rest of the United States in the future.[3]

These effects are not easily separated from other causes of income inequality, which makes policy design difficult. In particular, a large share of increased inequality stems from technical change that favors higher-skilled workers, and from the increase in the number of higher-skilled workers, which then encourages skill-biased technical change.[4] In addition, immigration has helped widen income inequality, although again the magnitude is unclear.

Given the difficulty of untangling the multiple causes of widening income inequality, one approach for California is to improve its residents' human capital to play to California's strengths in the world economy. Another is to enhance social protections that will ease the blow to those hurt by economic changes wrought by globalization. Human capital improvement falls directly under the state's powers in the form of improvements to schooling, vocational education, training outside schools, access to higher education for those who have unequal opportunities to pursue it, and improvements in lifelong learning and retraining opportunities.

The realm of social protections can embody a number of actions, although largely federal. Federal lawmakers took one of these actions in August 2002 when they approved increased benefits under trade adjustment assistance as part of the Trade Act of 2002.[5] In particular, they approved a "wage insurance" mechanism that would make up lost wages for a limited amount of time for workers displaced by trade into a lower-paying job.[6] At the state level, California policymakers can

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[3]This is because the goods-producing sectors produce products that most directly compete with lower-wage foreign labor. See Leamer (1998) for a more complete explanation of this idea.

[4]For a recent review of these issues, see Acemoglu (2002).

[5]Public Law 107-210, passed August 6, 2002.

[6]See Kletzer and Litan (2001) for an early discussion of this policy measure.

investigate other policies to help workers transition into new jobs should they be displaced by trade or FDI. Actually increasing the number of jobs available is a far more complicated proposition and will depend on the numerous factors that can make California a place where businesses want to open or expand their operations.

The rest of this chapter will address three areas of international economic policy—rather than issues of more general economic or social policy—that fall directly under the purview of the state.

Broadening the View of Globalization in California Policy Considerations

Globalization is more than just exports and inward FDI. Advances in transport and communications technology, the economic development of vast swaths of Asia and parts of Africa and Latin America, and the continued decrease in trade barriers of all types mean that globalization has moved far beyond simply exporting finished goods. California's firms and workers depend on both export markets and imported inputs. They also depend on both inward FDI and outward FDI. California consumers gain from imports and the competition and choice they provide.

In fact, most aspects of the international economy are tied together. Exports can lead a firm to invest abroad, and this investment can result in continuing exports between the parent and the affiliate. Imports can lead a firm to become familiar with the California market and then to locate an affiliate here, and this investment can result in continuing imports between the foreign parent and the California affiliate. Foreign affiliates in the United States bring in more than 25 percent of all U.S. imports, and U.S. producers sell almost 25 percent of their exports to U.S.-owned affiliates abroad.[7]

Because of this interconnectedness, state policymakers should review whether their focus on exports and inward direct investment is sufficient, or whether they should broaden their focus to include helping with foreign sourcing or with the establishment of foreign affiliates. The

[7]Saxenian (2002) shows another example of interconnectedness—that of foreign-born high-tech entrepreneurs in Silicon Valley starting new firms in their home countries.

state—although not the executive or legislative branches—has already moved some way toward supporting two-way trade through the Centers for International Trade Development and the California-Mexico Trade Assistance Centers of the California Community Colleges. Furthermore, in approving a privately funded state trade and investment office in Armenia in 2002, the legislature required that the office—should it ever open—be judged on the level of imports sent to California as a direct result of its work.

In a world of growing production-sharing across national boundaries, policymakers might profitably see a role for the state as an intermediary for California producers in joining global production networks. This role might involve helping California firms identify appropriate partners and subcontractors abroad as well as helping foreign companies find appropriate partners in California. It may be that the state will need to support these activities through cooperation with other trade-related groups, such as the World Trade Centers, rather than in official actions of the state. In addition, such a strategy would require the participation of groups or individuals with substantial expertise about the technologies, firms, and industries that they are promoting.

Rethinking Policy Toward California's Ports and Airports

The state can have an enormous influence on how America's goods are shipped, and by making sure that businesses find it easy to ship through California, the state can capture the salaries and other spending that accrues when its ports are used. These benefits will have to be balanced against the congestion and pollution that ports can cause. Currently, it is not clear that there is enough consideration of how the state's trade infrastructure—in particular its airports and seaports—fits with the nation's or the state's importing and exporting needs.

Planning is quite active regarding the land border between California and Mexico and involves a number of agencies, among them the San Diego Association of Governments, the California Department of Transportation, and agencies from Baja California and the San Diego region. Regarding seaports and airports, there appears to have been less

activity, although there are some recent initiatives. These include a series of reports in 2000 and 2001 by the Bay Area Economic Forum analyzing the link between the San Francisco Bay Area economy and air transport.[8] In 2003, three agencies in Southern California prepared a freight management report applicable to the six-county region of the Southern California Association of Governments.[9] And statewide, several agencies have completed the *Global Gateways Development Program* report, examining perspectives on options to facilitate movements of goods in California.[10] A question remains as to what effect these separate studies will have, especially in the face of state budget deficits.

In California, seaports and airports are local entities, but because the state's—and even the nation's—economic well-being rests in part on the fitness of California's airports, seaports, and land borders, state policymakers could have a positive role to play. At a minimum, the state could consider trade infrastructure as a whole, forecast the growth of demands on it, and offer an analysis of statewide needs. These actions would focus attention and develop momentum for local authorities to address these needs, individually and cooperatively. The smaller ports, such as Sacramento, Stockton, and Redwood City, and even the major seaports of Los Angeles, Long Beach, and Oakland, might value assistance not only to the infrastructure outside their gates (as with the Alameda Corridor) but to actual port infrastructure as well. It remains for the state to investigate whether California as a whole would benefit from state involvement in the ports and what actions the state can take.

Enhancing California's Export Promotion

As described in the chapter on goods trade, the standard data series on which policymakers rely may have serious flaws.[11] Specifically, analysts may not have as good an understanding of the level of export

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[8]Bay Area Economic Forum and BayTrade (2000) and Bay Area Economic Forum (2000, 2001).

[9]Los Angeles County Metropolitan Transportation Authority et al. (2002).

[10]State of California (2002).

[11]This is the data series compiled by the Foreign Trade Division of the U.S. Census Bureau and then made available by a number of data services.

production or the destinations of California exports as is normally presented. Fortunately, the Agricultural Issues Center at the University of California at Davis provides a substitute for agricultural export data. There is not as good a substitute for manufactured export data. One activity for the state to consider is a periodic survey of California exporters to find out how much they are shipping abroad and where they are sending it. The survey results can then be matched with the data currently used to gauge their adequacy and to make independent judgments about California's export activity.

A second task stemming from California's export patterns relates foreign trade promotion to the state's economic development policy more generally. California manufacturers produce for export at a higher rate relative to output than do manufacturers elsewhere in the United States. This production for export may be a key element sustaining California manufacturing, as the state's manufacturing sector is proportionately smaller than the manufacturing sector in the rest of the United States. Firms that wish to produce largely for domestic markets appear more likely to locate elsewhere.

The size of California's manufacturing sector is neither necessarily good nor bad, nor is it new. The share of manufacturing workers relative to all workers and manufacturing GSP relative to total GSP has been lower in California than in the rest of the United States for at least the last two decades, if not longer.[12] Furthermore, the absolute number of manufacturing workers actually fell less in California than in the rest of the United States between 1980 and 1999 and the absolute level of manufacturing GSP actually rose more during that same period. However, if policymakers value manufacturing production, they might investigate the factors that have both maintained this sector of California's economy over time and led to the state not being a favored location for purely domestic production.

A third aspect of exports that California policymakers should consider is services. World trade in services is growing as communications and transportation technologies make this kind of economic exchange easier. Along with technological changes have come

[12]For a long-run account of California manufacturing, see Rhode (2001).

institutional changes—the Uruguay Round Agreements of 1994 brought services trade under international discipline through the General Agreement on Trade in Services. The estimates appearing in this report show that California is an avid services exporter. With the key exception of tourism promotion by the Division of Tourism of the California Technology, Trade and Commerce Agency, the state and private trade-facilitation groups within the state currently focus on helping small and medium businesses learn how to export goods. These same groups could consider whether there is scope to help small and medium services business export as well.

Appendix A

Defining Globalization

There is no one definition of globalization. In fact, discussion about globalization often skirts the issue, with a number of authors defining the phenomenon implicitly by using examples. Nonetheless, there are a variety of useful approaches. Most of these have sprung from the ongoing debate about whether globalization today is unprecedented, or whether globalization 100 years ago was actually higher.[1]

An example of these discussions is that of Bordo, Eichengreen, and Irwin (1999). Their basic question is whether markets today are as integrated as they were 100 years ago, so, implicitly, they define globalization as market integration. The best measure of market integration is price convergence, or the same price for the same good or service in different regions and economies, but this is extremely difficult to measure.[2] Therefore, they rely on other measures in three general areas: the real economy (trade in goods and services, and FDI), barriers (tariffs, nontariff barriers, transport costs, and communications costs), and finance (holdings of foreign equity and debt, and the severity of financial crises).[3]

There are numerous other ways to measure globalization. For example, the consulting firm A. T. Kearney's Global Business Policy Council and *Foreign Policy* magazine (2001) have developed a globalization index that includes trade in goods and services, FDI, foreign portfolio investment, measures of personal contact across borders,

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[1]Among the contributions to this debate have been papers by Bordo, Eichengreen, and Irwin (1999); Baldwin and Martin (1999); Frankel (2000); Taylor (1998); and Sachs and Warner (1995).

[2]Kevin H. O'Rourke and Jeffrey G. Williamson make this point in a number of their studies.

[3]In a comment on Bordo, Eichengreen, and Irwin, Alan M. Taylor notes that there is no agreed-upon measure of capital mobility, or even how to measure it appropriately (Bordo, Eichengreen, and Irwin, 1999, p. 60).

and a variety of technology factors. In a speech to the Bank of Mexico, Federal Reserve Board of Governors Chairman Alan Greenspan identified trade in goods, trade in assets, and the use of international capital to finance projects as among the hallmarks of globalization.[4] And an article by Baldwin and Martin (1999) relies on measures of trade, investment, migration, and factor prices; capital flows and capital markets; and the level of industrialization and worldwide income convergence and divergence. Table A.1 shows how numerous researchers have defined and measured globalization.

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[4]Greenspan (2000).

Table A.1

Definitions of Globalization

Source	Definition or Measures
A. T. Kearney Inc. and *Foreign Policy* Magazine (2001)	*Goods and services*—convergence of domestic and international prices, and level of international trade *Finance*—inward and outward foreign direct investment, portfolio capital flows, income payments, and receipts *Personal contact*—cross-border remittances and other transfers, minutes of international phone calls, number of international travelers *Technology*—percentage of population on-line, number of internet hosts, number of secure servers
Baldwin and Martin (1999)	Trade, investment, migration, capital flows, industrialization and deindustrialization, and income convergence and divergence among nations
Bordo, Eichengreen, and Irwin (1999)	Trade in goods and services, foreign direct investment, portfolio capital flows, financial crises
DeLong (2001)	"The set of forces that is bringing the world together in the sense of lowering the costs of international trade, international investment, international migration . . ."
Frankel (2000)	International trade in goods and services, international financial flows
Greenspan (2000)	Trade in goods, trade in services, trade in assets, the relationship between national saving and national investment, migration
O'Rourke and Williamson (1999)	Trade, technological transfer, labor migration, and financial capital movements
Ostry (1999)	"Deeper integration"—"the ongoing process of ever-tighter linkages among countries proceeding in stages since the end of World War II. The linkage, by trade, financial flows, foreign direct investment, migration of skilled workers, and now E-Commerce spans a wider and wider space perhaps to culminate in a single, global market." (p. 2)
Rodrik (1997)	Trade, migration, capital flows
Sachs (1998)	International trade, cross-border financial flows, foreign direct investment, harmonization of economic institutions

NOTES: The Frankel definition is implicit in his discussion on p. 2. The Greenspan definition is implicit in his speech. The O'Rourke and Williamson definition is implicit in their discussion on p. 1. The Rodrik definition is implicit in his discussion on pp. 7–9.

Appendix B

Previous Work on California Trade Policy

Californians have been trying to define a state trade policy since at least the 1980s. This appendix describes the findings and suggestions of four recent efforts. Although not comprehensive, it shows the lines along which other analysts have envisioned state policy toward the international economy. Reports are described in chronological order.

Nick Vucinich, *Tapping New Markets: California's Role in Promoting International Trade,* California Senate Office of Research, Sacramento, California, 1993.

In this report, Vucinich noted that ultimately, California's ability to compete in the global marketplace would depend on its tax policy, education, infrastructure, and economic development policy, and not directly on any trade policy. Vucinich, a researcher in the Senate Office of Research, wrote this report at the advent of the California Trade and Commerce Agency, now the Technology, Trade and Commerce Agency.

Focusing on expanding exports and attracting more inward foreign direct investment, the report made the following recommendations:

- California should expand its Office of Export Finance.
- The Clinton administration should have the U.S. Export-Import Bank extend delegated authorities to qualified state agencies.
- The state should develop a specific trade policy, since California has interests in federal trade legislation and bilateral and multilateral trade agreements. California should articulate these positions.
- The role of the governor's trade representative should be reevaluated or redefined.

- The state's foreign offices should be reviewed and both new offices and consolidations should be considered.
- The legislature should strengthen its oversight of trade policy development.
- The state should improve its cooperation with local agencies and encourage more cooperation between public and private agencies.

Cynthia A. Kroll, Dwight M. Jaffee, Ashok Deo Bardhan, Josh Kirschenbaum, and David K. Howe, *Foreign Trade and California's Economic Growth*. *A Policy Research Program Report,* California Policy Seminar, Berkeley, California, 1998.

Stemming from work housed at the University of California, Berkeley, Fisher Center for Real Estate and Urban Economics, this report focuses on the implications of expanding foreign trade for the level and composition of output and employment in California and includes policy recommendations based on research findings. Throughout, it acknowledges the complexity of the roles that imports, exports, outward FDI, and inward FDI play in an economy.

Main policy recommendations include the following ideas:

- Issues that arise from trade relate to broader economic development issues. For example, export promotion and worker retraining stemming from trade displacement should be carried out within the context of broader economic development, not just within a narrow international trade policy.
- The state must recognize the complex effects of global linkages. Exports and inward foreign direct investment may not provide only benefits but also losses to California workers and firms over different time frames.
- Anticipate the effects of change and needs of industries. Monitor the economic conditions that are affecting industries.
- Identify and nurture new locations for expanding California industrial clusters.
- Include adjustment programs for firms and workers hurt by trade.

- Develop programs in a multijurisdictional context and coordinate services across the various levels of government that offer trade-related services.
- Include monitoring and evaluation in programs, not only of the programs themselves but of the overall economic trends that might affect the programs.
- Target programs at businesses that have shown some success at serving non-California markets and charge at least a partial amount of the costs to clients that receive state services.

Robert Collier, *California on the Global High Road: State Trade and Investment Strategy for the 21st Century,* Institute of Governmental Studies, University of California, Working Paper 99-4, Berkeley, 1999.

This report was written at the beginning of the first Davis administration while Collier was a visiting scholar at the Center for Latin American Studies at the University of California, Berkeley. Before and after holding that position, Collier was a reporter with the San Francisco *Chronicle*. He now writes the weekly "Global California" column in the Sunday edition and is a regular foreign-affairs reporter. Besides discussing the importance of the international economy to the state's businesses, the report focuses on the implications of globalization to society and the overall economy.

Policy recommendations emerged in five broad areas.

In the area of state trade promotion, the report recommended that the state should

- Nurture high-skilled, high-value-added, environmentally sensitive industries rather than trying to compete in the global marketplace by cutting taxes, regulations, or labor compensation.
- Conduct cost-benefit tests for all economic development programs, analyze their effects on a number of economic and social indicators, and develop these data biennially.
- Change export promotion to support clusters of small exporters. Emphasize public-private partnerships and eliminate duplication with federal, regional, and local institutions.

- Maintain support for export programs run by the California Energy Commission (energy technologies) and the California Environmental Protection Agency (environmental technologies).
- Encourage regulatory harmonization, when possible, in California regarding environmental rules to give local manufacturers a less fragmented market and enhance their ability to compete globally.
- Reorient the foreign offices to provide targeted, in-depth research and networking expertise to small businesses in growth industries, and conduct cost-benefit tests of the foreign offices.

Regarding public advisory panels, the report recommended that

- The state should merge the World Trade Commission and the Economic Strategy Panel into an Economic Advisory Council and include a broad range of membership.

Regarding relations with Mexico, the report recommended that the state

- Revive the Commission of the Californias and use it to improve cross-border cooperation on trade, infrastructure, environment, occupational safety, health, and law enforcement.
- Urge the Mexican federal government and the Baja California state government to respect labor rights, and suspend cooperation in joint foreign trade missions with Baja California until there is compliance with internationally recognized labor standards.
- Aggressively obtain funding and finish cross-border highway and railroad infrastructure projects.
- Develop a policy to revamp Southern California's manufacturing sectors and ensure well-paying jobs for workers displaced by competition from Mexican maquiladoras[1] and other low-cost international producers.

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[1]Maquiladoras are plants in Mexico that assemble foreign components for export. They are concentrated along the U.S.-Mexican border and are mostly non-Mexican-owned.

In the area of international lobbying and standards negotiations, the report urged that California

- Work with a wide range of partners to protect the interests of California residents and expand market opportunities for California firms.
- Increase California's participation in multilateral negotiations to create domestic and international environmental standards for industry.

Finally, in the area of state government investment and procurement policy, the report recommended that California

- Use its clout as investor and purchaser to support corporate standards for human rights, labor rights, and the environment.
- Study the possible use of "economically targeted investment" policies to boost California businesses, and adopt a "California first" investment strategy to help small firms, especially in disadvantaged areas.
- Consider creating a nonprofit venture capital arm or other intermediary for small firms.
- Analyze the economic, human rights, and legal aspects of selective-procurement legislation, striving to comply with U.S. obligations under the treaties of the World Trade Organization.

Gus Koehler, *California Trade Policy*, California Research Bureau, Report CRB-99-013, Sacramento, California, 1999.

In this report, Koehler reported on the value of exports and inward foreign direct investment to the state's well-being but also discussed the growing role of production networks (and two-way trade) in international business. The report was prepared at the request of the new secretary of the Trade and Commerce Agency, Lon S. Hatamiya, at the beginning of the first Davis administration. Koehler was then a policy analyst at the California Research Bureau; he is now the director of the California community college system's Economic Development Coordination Network.

The report made the following recommendations:

- Develop a state trade policy and strategy in line with the emergence of global networks of production rather than thinking in terms of simple exports.
- Encourage California parts and service suppliers to partner to compete for contracts from multinational enterprises around the world, and work with such enterprises to use California parts and services.
- Restructure the state's programs so that they are flexible and can respond to changes in the global economy as they develop, such as the Asian financial crisis.
- Develop a California foreign affairs capacity to create channels of communication and other links between California and major markets. Such a capacity would also track and respond to international regulatory initiatives affecting state industries.
- Reorganize state trade operations to coordinate state activities and focus on key regional industry clusters.
- Regularly assess the state's foreign trade offices.
- Develop public-private services to promote foreign trade and to provide market assistance to trade-ready small and medium-sized firms.
- In the area of market development, focus on key California industries, work with California's diverse ethnic groups to expand exports to their ancestral countries, and evaluate the importance of infrastructure investments to exports.

Appendix C

Data Sources

This appendix describes main data sources. A more detailed appendix (Miloslavsky and Shatz, 2003) gives a more complete account of data sources and more fully describes estimation methods.

FDI Data

Outward FDI

The U.S. Department of Commerce, Bureau of Economic Analysis (the BEA; http://www.bea.doc.gov), conducts annual and five-year benchmark surveys of U.S. direct investment abroad. Although the data are not released on the state level, the bureau agreed to make available to the Public Policy Institute of California counts of nonbank affiliates owned by California nonbank parent companies and by nonbank parent companies in the rest of the United States on a country-by-industry basis in 1998 (U.S. Department of Commerce, Bureau of Economic Analysis, 2001a). The bureau also made available counts of nonbank parent companies located in California and in the rest of the United States on an industry basis in 1998 (U.S. Department of Commerce, Bureau of Economic Analysis, 2001b). The affiliate counts include only those affiliates with greater than $3 million worth of assets, sales, or net income. In addition, the number of affiliates associated with an identifiable state and the number of parents associated with an identifiable state are undercounts of total affiliates and total parents. However, 91.8 percent of all U.S. affiliates are included, and many of the parents without an identifiable state are trusts that have no or few foreign affiliates.

Discussions with the BEA indicate that there is a small chance that there may be quality issues with the data, but the higher likelihood is that they reflect actual investment by California firms. The data quality issue is that the BEA databases contain parent companies that have not

identified their state of residence (many of which are trusts that have no or few affiliates). If these locationally unidentified parents are disproportionately from California, then the estimate of California affiliates will be low.

The chapter on outward FDI also presents estimates of operating variables of California foreign affiliates, in particular sales, employment, U.S. exports to affiliates, and U.S. imports from affiliates. These numbers were estimated by computing the averages for all U.S. affiliates by country by industry and then applying these averages to California affiliates.

Inward FDI

As with outward FDI, the main data source for inward FDI data is the BEA. Unlike the data for outward FDI, however, the inward FDI reports a great deal on FDI by state. Data for four years are used, 1980, 1990, 1998, and 1999 (U.S. Department of Commerce, 1983, 1993b, 2000a, 2001d). The California Technology, Trade and Commerce Agency (http://www.commerce.ca.gov/state/ttca/ttca_homepage.jsp) also receives a more detailed breakdown of FDI data from the BEA, one of only two states to do so (Florida is the other). These more detailed data report inward FDI by a larger set of countries and in a larger set of industries than do the standard published data and were used as well in this report. The inward FDI chapter presented data on overall employment and manufacturing employment in California and elsewhere in the United States. These data are from the *Current Employment Statistics* program of the U.S. Bureau of Labor Statistics (2001a, 2001b.)

U.S. wage data reported in the inward FDI chapter are also from the *Covered Employment and Wages* files of the BLS (U.S. Bureau of Labor Statistics, 2001c), and U.S. compensation data are from the BEA's regional accounts files (U.S. Department of Commerce, Bureau of Economic Analysis, 2001c).

Finally, on a country basis, stocks of inward FDI reported by country are from *World Investment Report* (United Nations Conference on Trade and Development, various years), and data on GDP are from the World Bank (World Bank, 2001).

Merchandise Exports

Overall merchandise export data come from the Massachusetts Institute for Social and Economic Research (2001, 2002), a packager and reseller of trade data collected by the Foreign Trade Division of the U.S. Census Bureau. These data include exports by the North American Industry Classification System, an industrial classification system with data running from 1997 to the present; exports by the Standard Industrial Classification, an industrial classification system with export data running from 1988 to 2000; and the Harmonized System, a commodity classification system. A second source for 1997 manufacturing export data is a publication of the U.S. Census Bureau's Economic Census program, *Exports from Manufacturing Establishments 1997* (U.S. Census Bureau, 2000b).

Data on agricultural exports come from two sources, the Agricultural Issues Center at the University of California, Davis (primarily Kuminoff, Bervejillo, and Sumner, 2001) and from the Foreign Agricultural Trade of the United States program of the Economic Research Service of the U.S. Department of Agriculture. The AIC gives figures of between 16 and 19 percent for California agricultural exports relative to California agricultural production, yet when the dollar value of exports released by the AIC is compared to the dollar value of production released by the U.S. Department of Agriculture the figure is above 20 percent, as shown in Panel B of Table 4.3 in the text. The 16 to 19 percent estimate is more correct because it values both exports and production at farm prices. The higher figure shown in the table values production at farm prices but exports at port prices, which include the wholesale margin and the transportation cost of moving the export from the farm to the port.

Merchandise Imports

Data for U.S. merchandise imports are from the interactive *Dataweb* facility of the U.S. International Trade Commission. No state-level import figures are available. However, the BEA publishes an import matrix for the United States, the latest of which is for 1998, estimating the use of imported inputs by commodity by industry and the

consumption of imported final goods by commodity (U.S. Department of Commerce, Bureau of Economic Analysis, 2002a). California imported inputs are estimated by computing national industry use of imported inputs—the ratio of imports to industry value added—and then applying these ratios to the value added of California industries. California's level of imported final goods is computed on the basis of California's share of overall U.S. personal income, investment spending, and state and local government spending, and the share of federal government spending within the state.

Services Trade

National services trade data are from the Foreign Trade Division of the U.S. Census Bureau and from an article in the BEA's monthly *Survey of Current Business* (Mann and Borga, 2001).

There are five types of private services trade: travel, passenger fares, other transportation, royalties and license fees, and other private services. "Travel" services exports include all purchases of goods and services by foreign travelers in the United States. Travelers include anyone traveling for business or personal reasons and staying less than one year but exclude students and medical patients. Travel services imports include all purchases of goods and services by American travelers abroad.

"Passenger fares" exports include all fares paid by foreigners to U.S. airline or ocean vessel companies for travel between the United States and foreign countries or between two foreign countries. Imports include all fares paid by Americans to foreign carriers for travel between the United States and foreign countries or for travel on foreign cruise ships. "Other transportation" trade is largely freight-related. Exports include receipts from foreigners to U.S. trucking, rail, pipeline, shipping, and airline companies for transporting exports from the United States to foreign countries or between two foreign countries. They also include purchases of all goods and services by foreign carriers in U.S. ports, so that purchases of bunker fuel in the Port of Long Beach or airline fuel at San Francisco International Airport are both counted as services exports. Imports include payments to foreign carriers for transporting goods imports to the United States and payments to foreign ports by U.S. carriers.

"Royalties and license fees" exports include payments by foreigners for the use of patents, formulas, or other intellectual property used in goods production or for trademarks, copyrights, franchises, broadcast rights, and rights for the distribution, use, or reproduction of general-use software. Imports include payments by Americans to foreigners for these same items. "Other private services" encompass a number of different categories, including education; financial services; insurance; telecommunications; business, professional, and technical services; and other unaffiliated services, which, in terms of exports, includes both receipts for the foreign distribution of films and spending by foreign consulates in the United States.

An additional two categories involve services trade by the U.S. government—miscellaneous services purchases and sales by the civilian government and by the military. The military exports category, called Transfers under U.S. Military Sales Contracts, includes both goods and services sales in which U.S. military agencies participate. The military imports category, called Direct Defense Expenditures, includes spending on goods and services supplied by foreign sellers.

Estimations of California services exports were computed on the basis of California's share of national output of industries that trade services. The detailed industry list is from Mann and Borga (2001). Industrial output is largely from the U.S. Census Bureau's 1997 Economic Census (U.S. Census Bureau, n.d.a).

Ports

Overall trade through customs districts is from the U.S. International Trade Commission's *DataWeb*. Trade by air through customs districts and exports by air through ports are from the Massachusetts Institute for Social and Economic Research. Data on imports by air through ports are from a special data extract by the Foreign Trade Division of the U.S. Census Bureau. Truck, rail, and pipeline trade through ports is from the U.S. Department of Transportation, Bureau of Transportation Statistics, *Transborder Surface Freight Data* program and primarily from the program's searchable databases (U.S. Department of Transportation, n.d.a). For sea trade through ports, the data are from the U.S. Department of Transportation,

Maritime Administration, *U.S. Foreign Waterborne Transportation Statistics Program* (U.S. Department of Transportation, n.d.b). Worldwide port rankings are based on data made available by the Port of Hamburg, Germany.

Because of changes in how trade data are collected, it has become customary to derive port totals using air values from the Census Bureau, land values from the Bureau of Transportation Statistics, and water values from the Maritime Administration. The Census Bureau produces its own port totals, and these sometimes differ greatly from the port totals derived by combining air, land, and sea data from the different sources. Were California export gateways to be ranked simply using the totals recorded by the Census Bureau in 2000, the list would be quite different from that shown in Table 6.6. Instead, it would have the following order (with the new ranking followed by the Table 6.6 ranking shown in parentheses): Los Angeles International Airport (1/2), San Francisco International Airport (2/1), Port of Los Angeles (3/4), Port of Oakland (4/5), Port of Long Beach (5/3), Otay Mesa Station (6/6), Calexico-East (7/7), San Diego (8/9), Tecate (9/10), and Port of San Francisco (10/8).

Harmonized Tariff System codes for the three leading products traded by air through California customs districts (Table 6.3) include 8542 (electronic integrated circuits and microassemblies), 8471 (automatic data processing machines), and 8473 (parts for office machines). Note that these are not necessarily the leading commodities through California by all modes. In fact, when air, vessel, and truck trade are combined, the leading imports in 2001 were automatic data processing machines (8471), cars (8703), integrated circuits (8542), and office machine parts (8473). These goods constituted 31.3 percent of the total value of imports through California customs districts. The leading exports were integrated circuits (8542), automatic data processing machines (8471), office machine parts (8473), and parts of aircraft and spacecraft (8803). These goods constituted 31.1 percent of all exports by value.

There is some debate about container port rankings. Although Table 6.5 lists the port of Hamburg, Germany, as the eighth-largest port in 2001, other sources list Shenzhen, China, as the eighth largest, with

approximately 5.1 million TEUs. The cause of this difference is that Shenzhen is actually a number of different ports, among which are Yantian, Shekou, and Chiwan, and when grouped together they would be eighth.

Gross State Product

Finally, GSP data are from the regional accounts of the Bureau of Economic Analysis (U.S. Department of Commerce, 2001c). They are used throughout the report to compare California's trade and FDI to the size of its economy.

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