

Airports and International Trade in the Bay Area

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1. INTRODUCTION

As an introduction to tonight's program, I will speak briefly about the importance of international trade to the Bay Area and the large, though generally unrecognized, role that airports play in that trade.¹ In fact, the vast majority of goods trade that passes through the Bay Area passes through its airports rather than its seaports. Furthermore, as a tourist destination and educational hub, the Bay Area relies on its airports to bring in customers for its services trade.

Because it is still difficult to understand how the events of September 11 will affect the Bay Area's air traffic, this presentation will review trends over the past several years. Other speakers tonight may have more to say on the future, and questions and discussion may also help us think more about what role the Bay Area airports will play in the coming years.

I will first discuss measures of international trade for the Bay Area and then focus on the role airports play. It is worth noting at the outset that the 7.04 million people who lived in the San Francisco Consolidated Metropolitan Statistical Area in 2000 comprised almost 2.6 percent of the U.S. population, up from 6.25 million and 2.5 percent in 1990. The three hub areas of the region – the San Francisco area, the San Jose Area, and the Oakland area – contained the vast majority of that population: 5.81 million in 2000 and 5.18 million in 1990.²

¹ Besides the author, speakers included R. Sean Randolph, president of the Bay Area Economic Forum, John Costas, deputy airport director and chief of staff at San Francisco International Airport, and David Lewis, executive director of Save the Bay.

² Data are from U.S. Census Bureau, Census 2000 Redistricting Data (U.S. Department of Commerce, Census Bureau, 2000a).

2. Measures of International Trade for the Bay Area

There is very little statistical information for trade by sub-national regions within the United States, and there are no official direct measures of how much Bay Area production is exported and how much Bay Area consumption is imported. Therefore, the best alternative is to use data that might give at least a rough indication of international activity in this area.

One such series is the Metropolitan Area merchandise export data produced by the U.S. Department of Commerce. These data show the location of the “exporter of record” for a good. The exporter of record might be a manufacturing establishment that produced the good; an administrative facility, such as a headquarters, of the company that produced the good; or an independent wholesaler, a retailer, a broker, or some other intermediary. The best that can be said of these data is that they give an indication of the marketing activity that occurs in an area, though to some extent they may reflect production for export.

With these warnings, what do the data show? In 1999, the latest year for which data are available, \$44 billion worth of U.S. exports were made in or marketed from the San Francisco-San Jose-Oakland area. This figure amounts to about 6.35 percent of U.S. merchandise exports, a percentage that far exceeds the Bay Area’s share of U.S. population. Of these exports, more than 50 percent went to Asia, and more than 15 percent of the total went to Japan. About 25 percent of the total merchandise exports went to Europe, of which the United Kingdom was the largest recipient at 5 percent. Finally, about 15 percent went to the NAFTA countries of Canada and Mexico, with about 12 percent going to Canada alone.

There are no figures available for imports at the sub-national level. However, the U.S. routinely runs merchandise trade deficits, which is to say that the value of its imports often exceeds the value of its exports. There is no reason to think the Bay Area is any different, especially with our love of Japanese and German cars and of technology gadgets assembled in Taiwan, China, Mexico, and other countries.

Services exports and imports are likewise difficult to measure. For the U.S. as a whole, services exports measured \$293 billion in 2000 and \$195 billion from January to August 2000. Surprisingly, these services exports were actually higher in the January to August 2001 period, totaling almost \$199 billion. (Goods exports this year are slightly lower compared to the same period last year). Services imports were \$217 billion in 2000 and \$142 billion for the January to August period. For January to August 2001,

services imports were almost \$149 billion, again an increase. (Like exports, goods imports have fallen). Note that services exports are more than 25 percent of total U.S. exports, whereas services imports are about 15 percent of total U.S. imports.

The United States routinely runs a surplus on its services trade balance, which includes foreign travel, passenger fares, freight and port services, royalties and license fees, and other private services, such as education and financial services. Through its airports, seaports, educational institutions, conference and convention facilities, and tourist destinations, the Bay Area specializes in services trade. It is therefore likely to have proportionately more services trade than the U.S. as a whole.

One other area of international exchange that is often neglected is foreign direct investment, or cross-border investment by companies in productive facilities. Because foreign-owned facilities are frequently exporters and importers, they generally add to the overall level of trade in a region. Unfortunately, data for FDI in metropolitan areas are even worse than the trade data. In California as a whole, however, foreign-owned companies employed about 603,000 workers in 1998. This amounts to 10.7 percent of all workers employed by foreign companies in the U.S.—the most of any state. However, such companies employ only 4.5 percent of all California workers, which is slightly less than the corresponding national percentage. Until 1994, the U.S. Department of Commerce maintained one data series that helped indicate the type of foreign direct investment in the region.³ Though outdated, these data indicate that investors in the Bay Area typically purchased, formed joint ventures, or otherwise focused their investments in technology industries, with additional activity in chemical or pharmaceutical industries, transport, and retailing, among others. Investors that year were largely from Japan, though several European countries were also represented.

In summary, the volume of merchandise exports marketed from or manufactured in the Bay Area appears high compared to the area's population, and merchandise imports and services trade are probably also high. It is difficult to say whether the level of foreign direct investment is similarly high, but it is certainly present, especially in the area's technology industries.

³ U.S. Department of Commerce, International Trade Administration, 1996.

3. The Role of Airports in International Trade

Merchandise trade enters and leaves the United States through its more than 400 airports, seaports, and land border crossings. These ports are grouped into about 45 customs districts. California has three such districts—Los Angeles, San Diego, and San Francisco. Within the customs district of San Francisco, the main ports include San Francisco International Airport, San Jose International Airport, the Port of Oakland (which includes the seaport and the airport), and the Port of San Francisco. There are many other private and public ports in the district, including the ports of Alameda, Crockett, Eureka, Carquinez Strait, Fresno, Martinez, Monterey, Redwood City, Richmond, San Joaquin River, Sacramento, San Pablo Bay, Selby, Stockton, and Suisun Bay.

Customs district and port figures do not translate into an area's production for export or consumption of imports. However, they are relevant for understanding the international trade activity of an area in two ways. First, areas near ports tend to have higher levels of production for export because transport costs to port are lower. Second, areas with ports gain income from port services (port fees, sales of bunker fuel, restaurant sales at airports) and entrepôt and transit services (warehousing, logistics businesses, freight forwarders, and other trade intermediaries).

How do airports fit into this picture? Simply put, the vast majority of the trade that flows through the Bay Area flows through its airports, not its seaports.⁴ Consider the difference between the Bay Area and the U.S. as a whole in this regard. U.S. businesses exported \$780 billion worth of merchandise in 2000, of which about \$284 billion, or 36 percent, went by air. Imports amounted to \$1.22 trillion, with \$309 billion, or 25 percent, entering by air. In the San Francisco customs district, however, air shipments played a much larger role (Table 1). Whereas about one-third of U.S. trade went by air, more than two-thirds of trade through the San Francisco customs district went through the area's airports. This district was the second leading export and import gateway for air trade in 2000, trailing only the customs district of New York City.

⁴ Useful reviews of the importance of air traffic to international trade include reports by the Bay Area Economic Forum (2001) and numerous articles by Jock O'Connell—for example, O'Connell (2001a) and (2001b).

Table 1
Trade Through the Customs District of San Francisco
in Millions of Dollars (2000)

	Total	Percent of U.S.	Air	Percentage of U.S. Air	Percentage of Customs District Total by Air
Exports	58,304	7.5	46,196	16.2	79.2
Imports	68,867	5.7	48,098	15.6	69.8

Source: U.S. Department of Commerce, Census Bureau, Foreign Trade Division, via MISER, the Massachusetts Institute for Social and Economic Research, <http://www.misertrade.org>.

Most of this air trade is concentrated at San Francisco International, but Oakland and San Jose also have non-negligible trade by value. Unfortunately, data on imports through the individual ports are not readily available, so Table 2 shows only exports. San Francisco International handles almost 15 percent of all U.S. exports that are shipped by air, or about 5.4 percent of all U.S. exports.

Table 2
Exports Through Bay Area Airports in Millions of Dollars (2000)

	Total	Percentage of Customs District Air Exports	Percentage of U.S. Air Exports
San Francisco International	41,826	90.5	14.7
Oakland International	4,020	8.7	1.4
San Jose International	325	0.7	0.1

Source: U.S. Department of Commerce, Census Bureau, Foreign Trade Division, via MISER, the Massachusetts Institute for Social and Economic Research, <http://www.misertrade.org>.

This air trade is particularly important to the Bay Area's high-technology industries. Because of both worldwide production sharing and differentiated products within industries, intra-industry trade has exploded over the last few decades.⁵ Within the customs district of San Francisco, the broad product classes that are most frequently exported and imported—in the identical order—are electrical machinery, other machinery, and instruments.⁶ Electrical machinery goods comprise 42 percent of air exports and 50 percent of air imports; other machinery goods comprise 39 percent of air exports and 35 percent of air imports; and instruments comprise 12 percent of air exports and 5 percent of air imports.

Within these aggregated groups, parts of electronic integrated circuits and microassemblies account for an astounding 29 percent of air exports and 40 percent of air imports through the customs district.⁷ In dollar terms, this single category accounted for \$13.4 billion worth of exports and \$19.1 billion worth of imports by air through the customs district of San Francisco in 2000. Of all the electronic integrated circuits exported by the United States by air, 28.6 percent went out of the customs district of San Francisco. Almost 50 percent of all integrated circuit parts that were imported by air entered through this same district.⁸

Much of this air trade is carried on with Asia. The top five export destinations are Japan, Taiwan, Korea, Singapore, and Hong Kong, and the top five import sources are Japan, Korea, China, Malaysia, and Singapore. In some cases, almost all of the trade between the U.S. and a particular country that is routed through the customs district of San Francisco is carried on by air. For example, 99 percent of the exports to Canada through this district in 2000 were by air. Ninety-eight percent and 95 percent of imports from Hungary and Ireland, respectively, were by air.

⁵ In production sharing, an input is made in one location, assembled or improved upon in a foreign location, and then sold either in the first location, the second location, or worldwide. With product differentiation, competitors within an industry make different versions of a product or complementary versions and sell in both markets. Production sharing and product differentiation are especially prevalent in high-technology industries.

⁶ Imports are classified by the harmonized tariff code, which can be broken into 2-, 4-, 6-, and 10-digit levels. Exports are classified in a similar manner under what is known as Schedule B, which uses the same numbers. The three dominant groups traded fall in codes 85, 84, and 90, respectively.

⁷ These goods comprise harmonized code 8542.

⁸ Again, these figures do not reflect local production; rather they reflect the use of the ports in the San Francisco area by businesses throughout the nation.

4. Conclusions

There are no perfect figures on international trade activity by Bay Area companies. However, there is reason to believe that businesses in the Bay Area are more internationally oriented than other businesses in the United States. The area's high-tech sector, for example, relies on production sharing, worldwide research and development efforts, and worldwide sales to succeed.

One advantage Bay Area businesses have as they try to sell their goods in international markets or spread production networks overseas is access to trade facilities. Foreign trade in the Bay Area, especially compared to such trade in other parts of the United States, means trade by air. In Southern California, too, more than 50 percent of exports and 25 percent of imports through the customs district of Los Angeles go by air. The export figure is well above the national average.

California's airports also serve businesses well beyond the Bay Area. For certain products, these airports serve businesses throughout the United States. Moreover, California airports are the nation's principal air export gateway to Asia. These are certainly issues that must be taken into account as the region considers the future of its airports.

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