35. See the account in David Halberstam, *The Reckoning* (New York: William Morrow, 1986), pp. 574-582.

36. See U.S. General Accounting Office, Report to Congressional Requesters *Foreign Investment: Growing Japanese Presence in the U.S. Auto Industry*, GAO/NSIAD-88-111 (March 1988), pp. 3, 13.

37. See Sara L. Gordon and Francis A. Lees, *Foreign Multinational Investment in the U.S.: Struggle for Industrial Supremacy* (New York: Quorum Books, 1986), Chapter 6.

38. Owen Bieber (President of the UAW), "Are Japan's U.S. Auto Plants Unfair?" *New York Times*, May 13, 1990, Section 3, p. 13.

39. Industrial Union Department (AFL-CIO), 18th Constitutional Convention, Hollywood, Florida, *Adopted Resolutions* (Washington, D.C.: Nov. 1988), pp. 76-78.

40. Ibid., p. 81. See also the resolution on "International Trade and Investment" adopted by the 18th AFL-CIO Convention, November 1989, published in the AFL-CIO pamphlet, *The Pocketbook Issues: AFL-CIO Recommendations for 1990* (Washington, D.C.: AFL-CIO Publication No. A37-R0290-30, 1989), pp. 22-26.

41. Industrial Union Department, AFL-CIO, "Making the International Connection Work," prepared for the International Conference on Strategies for Global Labor Solidarity, mimeo, n.d. (c. 1989), pp. 2-3.

3/ *The Social Geography of Japanese-Owned Manufacturing in California*

California, with its vast consumer markets and its prime location on the Pacific Rim, has emerged as the leading magnet for Japanese direct investment (JDI) in the U.S., especially in manufacturing. Nearly half of all Japanese-owned firms in the U.S. have property, plants or equipment in the state, and 20 percent of the jobs in Japanese-owned firms nationwide are located there.[1] JDI in U.S. manufacturing is especially concentrated in California, which had 245 Japanese-owned factories by the end of 1989, 18 percent of the national total.[2] As Table 8 and the accompanying map (Figure 1) show, the vast majority of California's Japanese-owned factories are located in the southern part of the state, with over one-third of them in Los Angeles County alone. Indeed, Los Angeles has been labeled Tokyo's twenty-fourth ward, reflecting the presence of extensive JDI in the city's real estate and service industries as well as in manufacturing.[3]

California, and especially Southern California, attracts a disproportionate share of JDI for several reasons. The area's long history as the main receiving station for Japanese exports and its consequent familiarity to many potential investors is one important

Table 8

Japanese-Owned Manufacturing Plants in California at Year-End 1987, by County and Number of Employees

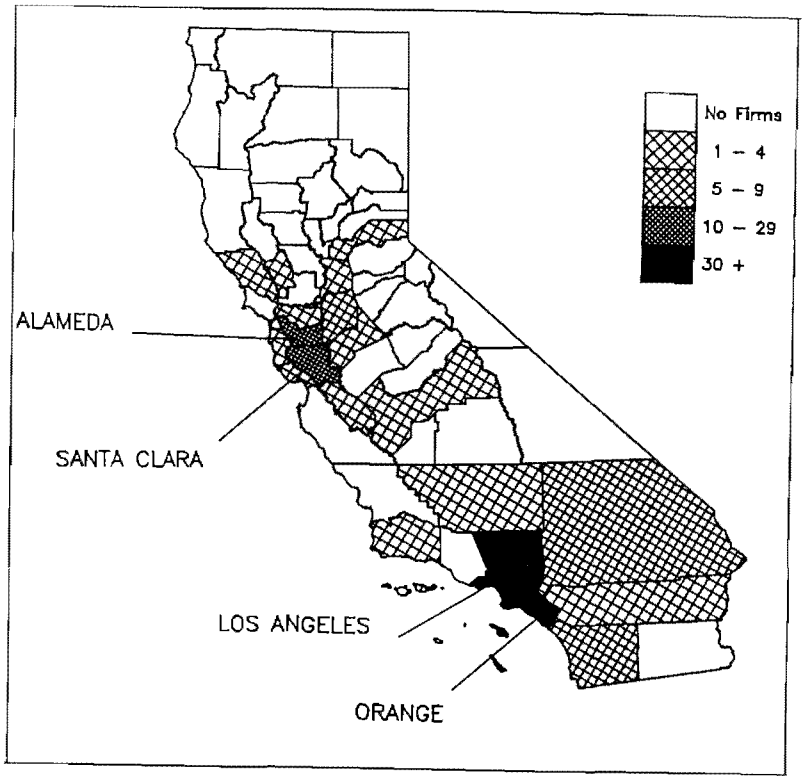
County	Plants		Employees	
	Number	% of Total[a]	Number	% of Total[a]
SOUTHERN CALIFORNIA:				
Los Angeles County	65	35%	6853	22%
Orange County	37	20	6804	22
San Diego County	9	5	4348	14
San Bernardino County	5	3	1628	5
Riverside County	2	1	80	--
Kern County	1	1	195	1
Santa Barbara County	1	1	25	--
Regional Subtotal	*120*	*65%*	*19,933*	*63%*
NORTHERN CALIFORNIA:				
Santa Clara County	25	13%	6606	21%
Alameda County	15	8	3306	10
San Mateo County	1	1	250	1
Sonoma County	1	1	100	--
San Francisco County	2	1	58	--
Santa Cruz County	2	1	42	--
Napa County	3	2	29	--
Contra Costa County	1	1	12	--
Regional Subtotal	*50*	*27%*	*10,403*	*33%*
REST OF STATE:				
Placer County	1	1%	676	2%
San Joaquin County	7	4	368	1
Sacramento County	3	2	93	--
Fresno County	2	1	52	--
Stanislaus County	1	1	20	--
San Benito County	1	1	17	--
Regional Subtotal	*15*	*8%*	*1226*	*4%*
TOTAL	185	100%	31,562	100%

[a]Totals may not add due to rounding. -- Rounds to less than 1% of total

Source: Derived from Japan Economic Institute, *Japan's Expanding U.S. Manufacturing Presence, 1987 Update* (Washington, D.C., 1988), pp. 7-43, with modifications based on author's survey. (In cases where the survey revealed that some of the firms listed in this source were no longer in business, no longer Japanese-owned, or not manufacturing facilities, they were not used to compute this tabulation. However, where the survey found a different number of employees than those in the JEI listing, the JEI figure was nevertheless used in this table.)

Figure 1

Japanese-Owned Manufacturing Plants in California at Year-End 1987, by County



factor. As a major center of growth in U.S. manufacturing generally, California has drawn substantial investment in recent years from domestic and foreign investors alike. Like their domestic counterparts, many Japanese manufacturers find the state's ample supply of low-wage immigrant labor and the weakness of unionism (especially in the industries where JDI is concentrated) highly attractive. Finally, California's proximity to Mexico offers investors the option of establishing an operation in the state coordinated with a *maquiladora* plant south of the border, where labor is even more tractable, and from which subassembled components may be imported to the U.S. duty-free.

For decades, Southern California has been the main port of entry for Japanese exports to the U.S. As several of the managers I interviewed often pointed out when asked why their plants were located in the region, many Japanese-owned firms initially established offices or distribution centers in the area, and later built or acquired manufacturing plants nearby.[4] "First we had an office here, then a warehouse, and then a plant," one manager of a Japanese-owned auto parts plant recalled. Another manager employed by a Japanese-owned electronics plant noted that the parent firm's marketing division offices were nearby and indicated that this had contributed to the plant location decision. Others cited California's proximity to Japan and the fact that Japanese businessmen were familiar with the region as significant factors, especially in selecting the site for a firm's first U.S. plant.

California was an especially favored location in the early years of growth in JDI in manufacturing. Of the 295 new manufacturing plants that Japanese firms established in the U.S. from the early 1970s through the end of 1985, 37 percent were located in the Far West, and most of these were in California. More than 10 percent of all Japanese manufacturing plants *in the U.S.* went to Los Angeles County alone during this period![5] As JDI expanded further in the late 1980s, however, Japanese firms began to build and acquire more plants in other regions, and in some industries (especially autos and auto parts) Japanese plants were concentrated in the midwest from the outset. As a result of these regional shifts, California's share of Japanese-owned manufacturing plants in the U.S. has fallen significantly in the late 1980s. At the end of 1986, 25 percent of the nation's Japanese-owned manufacturing plants were located in California; only three years later the proportion had dropped to 18 percent of the total. But the absolute number of Japanese firms in the state has

continued to grow (from 155 to 245 plants in this three-year period alone), and California remains unchallenged as the state with the largest number of Japanese-owned plants. (Ohio is second with 92 plants.)[6] Ironically, this decline in California's relative share occurred despite the 1986 weakening of the state's unitary tax,* a change that foreign firms lobbied for and one that legislators hoped would encourage further JDI in the state.[7]

As Table 8 shows, Southern California is the site of most Japanese-owned manufacturing within the state, with 65 percent of the state's Japanese plants and 63 percent of the employees of such plants. The Los Angeles basin (Los Angeles, Orange, Ventura, Riverside, and San Bernardino counties) alone accounts for more than half of the plants and just under half the employees of Japanese manufacturing firms in the state. The bulk of the activity (55 percent of the plants and 44 percent of the employees) is concentrated in Los Angeles County and adjacent Orange County. San Diego County also has considerable Japanese manufacturing activity, much of it coordinated with Japanese-owned *maquiladoras* recently established south of the U.S.-Mexican border. The northern part of the state also has a substantial Japanese presence in manufacturing, with 27 percent of the state's Japanese-owned plants and 33 percent of the employees of such plants. There are two major centers of activity in the north. One is Silicon Valley (Santa Clara County), where the computer industry is concentrated. The other is Fremont (in Alameda County), the site of a single auto plant, NUMMI, the Toyota-GM joint venture, which employs more people than any other Japanese-owned plant in the state.

California's Japanese-owned plants tend to be larger operations, as measured by number of employees, than manufacturing plants in the state generally. Their large size reflects the fact that most of the state's Japanese plants are branches of giant Japanese multinational corporations. While 36 percent of the state's Japanese-owned plants had 100 or more employees in 1987-88, this was true of only 7.8 percent of all manufacturing establishments in California. In Los Angeles County, home to more Japanese plants than any other county, the discrepancy was

*With a unitary tax, foreign-owned firms are taxed using a formula based on the percentage of total (worldwide) company sales, payroll, and property in the state; not simply on profits made in the state.

smaller: 26 percent of the Japanese-owned plants had 100 or more employees, compared to 8.4 percent of all manufacturing establishments in the county.[8]

Figures 2a and 2b offer a more detailed look at the geography of California's larger Japanese-owned manufacturing plants, showing the locations of all the plants that had 100 or more employees in 1988-89.[9] Los Angeles County is not as dominant here as in Figure 1, since many of the plants located there are relatively small operations with under 100 employees. But as in the more inclusive Figure 1, the large plants shown here are highly concentrated in Los Angeles and Orange Counties, with substantial numbers in San Diego and Santa Clara Counties as well. These maps also differentiate among plants of varying sizes, and Figure 2b shows which plants in the southern part of the state operate in tandem with *maquiladoras* in northern Mexico (their California locations are marked with triangles instead of circles).

If proximity to the Pacific and the fact that the West Coast (and particularly Los Angeles) was the port of entry for Japanese exports in past years played a role in shaping the locational choices of the firms shown, the geographical pattern of Japanese manufacturing activity also reflects other factors, including those that have influenced site selection for domestically owned manufacturing plants in recent years. Indeed, the pattern of Japanese plant location in the U.S. in many ways resembles that for domestic manufacturing plants established in the same period. Many of the plants that are now Japanese-owned (nearly half of those with 100 or more employees) were originally built by domestic firms and then acquired by Japanese investors. And whereas in earlier decades Californians depended on consumer goods shipped from the midwestern U.S., as West Coast markets have grown, many domestic manufacturing firms have expanded in or relocated to California. Between 1983 and 1988, precisely when JDI was expanding dramatically, total manufacturing employment in California grew at an average annual rate of 2.8 percent, more than twice the growth rate for manufacturing employment in the U.S. as a whole (which grew 1.3 percent over this period).[10]

The Los Angeles Basin is California's main manufacturing center, with 59 percent of all manufacturing jobs (and 49 percent of Japanese-owned manufacturing jobs) in the state.[11] Despite its reputation as a postindustrial "twenty-first century city," Los Angeles County today actually has more manufacturing employ-

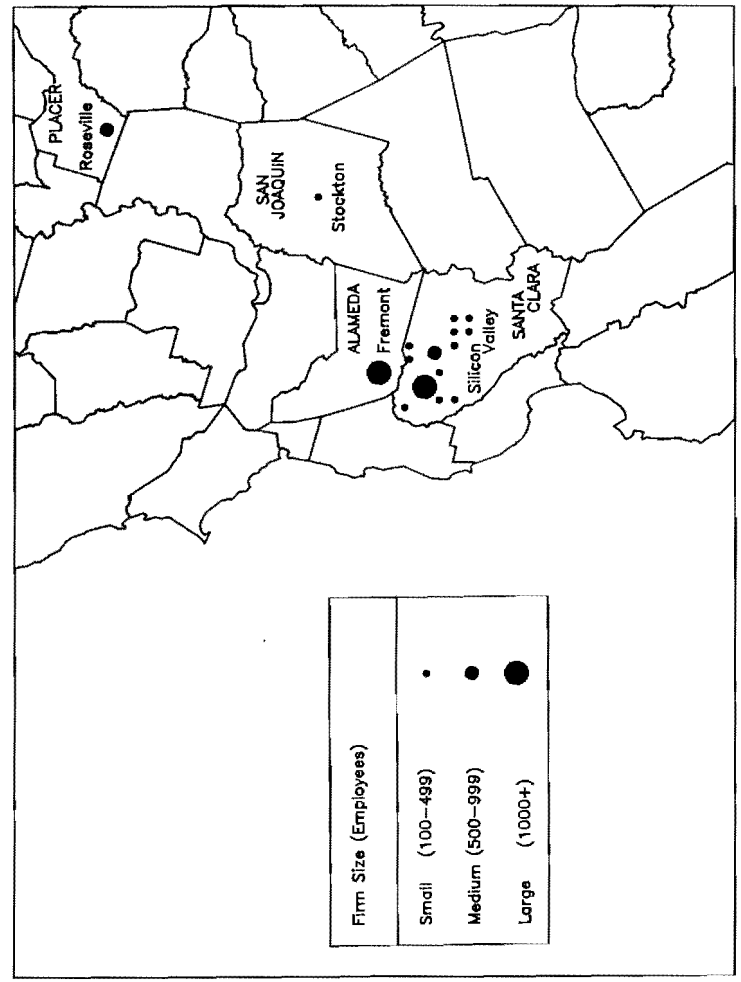


Figure 2a. Japanese-Owned Plants with 100 or More Employees in Northern California, 1988-89

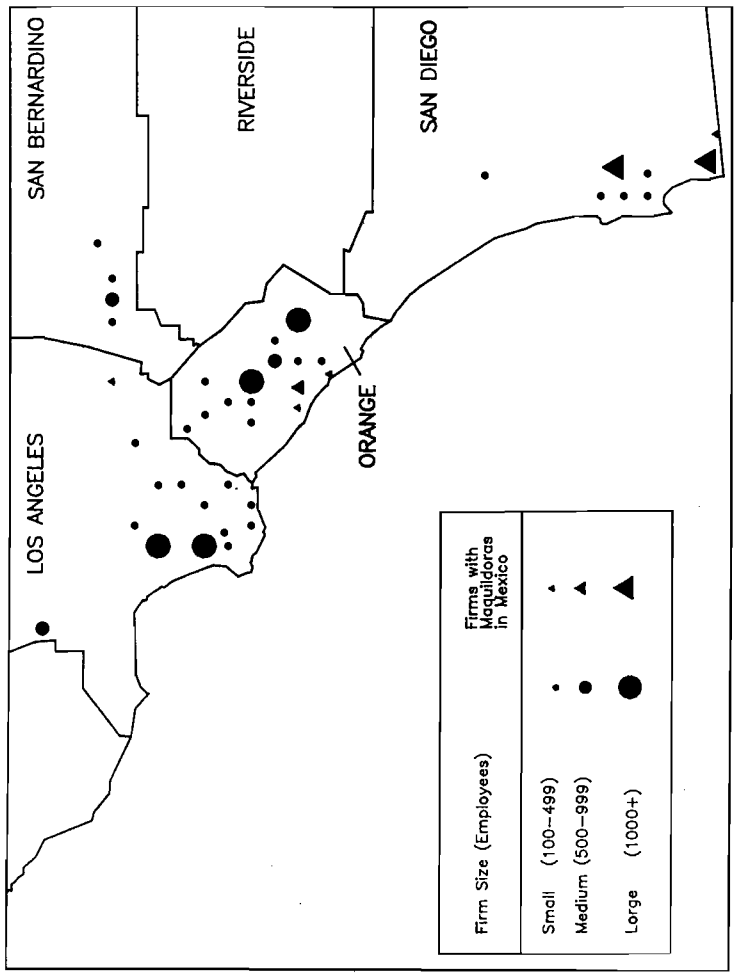


Figure 2b. Japanese-Owned Plants with 100 or More Employees in Southern California, 1988-89

ment than any other county in the United States.[12] California's large domestic and foreign-owned manufacturing establishments—those with 100 or more employees, are especially concentrated in Los Angeles County, which is home to fully 70 percent of them. When adjoining Orange County is added the figure rises to 81 percent. In contrast, only 27 percent of the state's large Japanese-owned manufacturing plants are in Los Angeles County, with 53 percent in Los Angeles and Orange counties combined.[13]

Although California's large Japanese-owned factories are somewhat less geographically concentrated than average, they are far *more* concentrated within a few industry groups. Table 9 shows the distribution of large Japanese-owned manufacturing establishments as compared to the distribution of all large manufacturing establishments in the state for selected industry groups and counties. The state has a highly diversified manufacturing economy, and the five industries shown in the table account for only 39 percent of all the large plants, but for 95 percent of the large Japanese-owned plants. The electrical and electronic equipment industry group alone accounts for more than half of the large Japanese plants.

Within these industry groups, most of the state's Japanese-owned plants are branch operations of large Japanese companies. As we saw in Chapter 2, they are part of the larger phenomenon of Japanese export-substitution industry. As such they tend to carry out highly routinized production processes, while the more complex and skilled work continues to be performed in Japan. Many of the Japanese-owned plants in California are essentially turnkey assembly plants; virtually all of them depend heavily on imported machinery and have fairly low skill requirements. This was the case for all 20 of the plants I visited in the course of this study, except for a few that had previously been domestically owned and were acquired by the Japanese with their operations preserved intact. Thus the Japanese-owned sector of California manufacturing is basically part of Japan's industrial periphery. This has important implications for the labor requirements of Japanese firms investing in California, to which we now turn.

Table 9

Japanese-Owned Manufacturing Establishments and All Manufacturing Establishments with 100 or More Employees, for Selected Industry Groups and Counties, 1987-88

Industry Group		Los Angeles County		Orange County		Santa Clara County		San Diego County		Rest of State		State of California	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Electrical & Electronics	Japan-owned	5	29%	10	59%	13	93%	7	88%	1	12%	36	56%
	All Plants	174	11%	68	16%	140	37%	48	22%	110	9%	540	14%
Metals & metal products	Japan-owned	5	29%	1	6%	0	--	0	--	3	38%	9	14%
	All Plants	224	14%	45	11%	10	3%	9	4%	117	10%	405	11%
Food & kindred products	Japan-owned	1	6%	4	24%	1	7%	0	--	1	12%	7	11%
	All Plants	111	7%	26	6%	19	5%	8	4%	215	18%	379	10%
Motor vehicles & parts	Japan-owned	2	12%	1	6%	0	--	0	--	2	25%	5	8%
	All Plants	42	3%	3	1%	0	--	1	1%	23	2%	69	2%
Chemicals & allied products	Japan-Owned	2	12%	0	--	0	--	1	13%	1	12%	4	6%
	All Plants	54	3%	12	3%	7	2%	8	4%	29	2%	110	3%
Other Industries	Japan-Owned	2	12%	1	6%	0	--	0	--	0	--	3	5%
	All Plants	1011	63%	282	65%	201	53%	147	67%	695	59%	2336	61%
All Manufacturing	Japan-Owned	17	100	17	100	14	100	8	100	8	100	64	100
	All Plants	1616	100	436	100	377	100	221	100	1189	100	3839	100

Sources: Figures for Japanese-owned establishments are derived from year-end 1987 data in Japan Economic Institute, *Japan's Expanding U.S. Manufacturing Presence, 1987 Update* (Washington, D.C.: JEI, 1988), and author's survey. Figures for all establishments are for 1988 and are computed from U.S. Department of Commerce, Bureau of the Census, *County Business Patterns, 1988, California*, CBP-88-06 (Washington, D.C.: September 1990).

The Labor Dimension of Location Selection

Whether domestic or foreign-owned, manufacturing firms find one feature of Southern California particularly attractive: the labor supply and the labor "climate"— a euphemism for weak unionization.[14] "To many foreign firms, saving money on wage costs is far less important than control of the labor force," Norman Glickman and Douglas Woodward point out in their authoritative study of foreign investment in the U.S. "Along with proximity to growing markets, numerous surveys show that an absence of unions and positive 'worker attitudes' consistently rank at the top of foreign firms' state and regional preferences."[15] A report by the Center for the Continuing Study of the California Economy makes the same point. "Labor force availability and quality is the number one factor listed in most site selection criteria for new businesses," it states. "The attractiveness of our labor pool has helped the state maintain a strong and growing economic base in the midst of increasing competition from other states."[16]

Indeed, Japanese manufacturing firm managers frequently cited labor considerations when asked why their plants were located in Southern California. One American manager at a Japanese-owned electronics plant established in Orange County in the mid-1970s, noting that "the Japanese are famous for location studies," recalled that in-depth research was done to select the site for the plant where he worked. "Cost was one concern," he said, "but other things were more important, especially the labor supply and a good working environment." Similarly, a manager employed by a large Japanese-owned electronics plant in San Diego, also built in the 1970s, said that in addition to its proximity to the Pacific Rim, San Diego was an attractive location for this firm because "the labor climate was good and availability of labor was ample." Another manager at a plastics plant located east of Los Angeles, in San Bernardino County, attributed its site selection in the mid-1980s to low land and labor costs relative to other parts of Southern California, and to the perception that "the union situation seemed better here."

Just what is it about the labor situation in the state, and particularly in its southern region, that is so attractive to these firms? The evidence suggests that what they are looking for is tractable, nonunion labor available at low wages. Skill requirements are generally low, thanks to the routinized nature of most of the production processes carried out in these branch plants. In

practice this means that, like many of their domestically owned counterparts, Japanese-owned factories in California rely heavily on the state's abundant supply of immigrant labor. Thus they combine foreign capital with foreign labor to produce goods "made in the U.S.A." Depending on the composition of the population in the vicinity of their particular location, California's Japanese-owned plants employ Mexican, Salvadoran, Thai, Vietnamese, Filipino, and/or other immigrant workers from Asia and Latin America. One manager at a plant located near the U.S.-Mexico border claimed that some workers there actually lived in Tijuana and walked across the border to work each day.

Among the 20 plants I visited, none had a production workforce that was more than 50 percent native-born Caucasian, according to their managers. This upper limit was reported for only three plants; at the other 17 at least two-thirds of the workforce was comprised of immigrants, and in many cases the figure was 90 percent or more. (See Table 10.) African-Americans, on the other hand, were conspicuously underrepresented in the workforce at most of these factories, and in many cases they were entirely absent.[17] Many of the plants employed substantial numbers of (immigrant) women, although the gender composition of the workforce varied by industry, as one might expect. For example, metals plants employed primarily (sometimes exclusively) males, while most electronics plants depended heavily on female labor.

Although no strictly comparable data are available on the composition of the production workforce of domestically owned manufacturing plants in California, scattered evidence suggests that immigrants are overrepresented among the state's manufacturing production workers generally, although perhaps less so than in the Japanese-owned plants. The most recent comprehensive data are from the 1980 Census, which is well known for its undercounting of immigrants. The Census found that 39 percent of "operators, fabricators and laborers" in California (compared to 23 percent of the total employed population) were Hispanic, Asian, or Pacific Islanders. In Los Angeles, 54 percent of "operators, fabricators and laborers" (but only 31 percent of the employed population) were from these ethnic groups. (Of course, "Hispanics, Asians, or Pacific Islanders" includes not only immigrants but also many native-born persons.) These estimates are surely too low even for 1980, and both legal and illegal immigration to the state have continued at a rapid pace since that time. From 1982

Table 10. Selected Characteristics of 20 Japanese-Owned Plants in California

Plant Code	Industry Group	New or Acquired	Year Opened or Acquired	%Japanese Ownership	County	Twin Plant in Mexico?	Number of Employees	Immigrants as %	Women as %	Average Wage	Unionized?
A	Food	New	1983	100%	Orange	no	60	93%	80%	$8.00	no
B	Metals	Acquired	1976	50%	San Bernardino	no	340	50%	1%	$14.28	yes
C	Electronics	New	1978	100%	Los Angeles	yes	410	95%	60%	$6.53	no
D	Plastics	New	1975	100%	Orange	no	85	85%	70%	$7.00	no
E	Electronics	New	1972	100%	San Diego	yes	1800	50%	50%	$7.50	no
F	Electronics	New	1971	100%	San Diego	yes	1100	65%	90%	$6.00	no
G	Biomedical	Acquired	1978	100%	Los Angeles	no	1215	78%	20%	$10.00	no
H	Electronics	New	1974	100%	Orange	yes	350	80%	66%	$7.00	no
I	Electronics	New	1981	100%	San Diego	no	318	77%	63%	$7.50	no
J	Food	New	1972	100%	Los Angeles	no	280	89%	50%	$5.85	no
K	Metals	Acquired	1968	100%	Los Angeles	no	246	90%	0	$8.83	yes
L	Auto Parts	New	1982	100%	Orange	yes	250	90%	33%	$9.80	no
M	Electrical	New	1979	100%	San Diego	yes	340	95%	50%	$6.00	yes
N	Precision	Acquired	1971	100%	Los Angeles	no	525	70%	60%	$7.50	no
O	Electronics	New	1982	100%	Los Angeles	no	275	85%	80%	$7.50	no
P	Metals	Acquired	1987	51%	Los Angeles	no	146	65%	2%	$10.00	no
Q	Plastics	New	1984	100%	Los Angeles	no	200	100%	5%	$6.00	no
R	Plastics	New	1986	100%	San Bernardino	no	239	90%	60%	$5.00	no
S	Electronics	Acquired	1976	100%	Orange	yes	300	95%	40%	$6.35	no
T	Metals	Acquired	1984	50%	San Bernardino	no	875	50%	10%	$13.21	no

to 1988 alone, over 1.1 million new immigrants entered the U.S. legally with California as their state of intended residence; untold numbers have arrived without legal documents.[18] A rough estimate (based on Current Population Survey data) is that by 1986-88, about 55 percent of the state's "operators and laborers" were Hispanic or Asian; the proportion is likely to be far higher for Los Angeles, the site of most of the Japanese-owned plants and the most common destination for immigrants. Preliminary 1990 Census data show that 35 percent of the state's population, and 49 percent of the population of Los Angeles County, consists of Hispanics, Asians and Pacific Islanders; at this writing, unfortunately, 1990 labor force data by ethnicity are not yet available.[19]

Immigrants are far less numerous in other parts of the country where JDI is concentrated than in California. Most notably, there are many auto transplants and suppliers in states like Ohio, Kentucky and Tennessee, which recruit primarily native-born Caucasians as production workers. In the case of the auto industry, where wages are relatively high, proximity to raw materials and suppliers in the midwest may take priority over access to cheap labor—although even in this case union avoidance and racial factors do play a part in the choice of site.[20] In California, however, where electronics is the dominant industry, access to cheap and tractable labor is more central to the JDI location equation.

When asked what kind of criteria they used in selecting workers for employment, the managers we interviewed were careful to emphasize that they did not discriminate in any way on the basis of race or ethnicity, and many cited the high proportion of "minorities" in their workforce in support of this contention. One manager suggested that his plant had a largely immigrant workforce because unlike native-born whites "like my kids, who think they should start at $10 or $15 an hour," immigrants "are willing to work their way up from the bottom." A few other managers indicated in fairly transparent terms (but surely unintentionally) that they hired on a gender-specific basis. Several mentioned the importance of "manual dexterity" and "small hand size" in hiring for jobs that were done primarily or exclusively by women. "We look for thin-boned people with ability to get around in tight spaces," one manager in an electronics assembly plant told us. In contrast, a metals plant manager said he looked for "big, strong" people and another manager in electronics mentioned that for certain jobs he looks for "larger, more substantial people that

are not afraid of heavy lifting." This is the typical idiom of occupational sex-typing in manufacturing and there is no reason to think the Japanese-owned plants are any different from others in this regard.[21]

None of the 20 plants we visited had specific educational requirements for their production workers. While some managers reported that they gave preference to applicants with a high school diploma, almost all of them acknowledged that a substantial portion of their workforce had less than a high school education. While many said that they preferred workers with basic English language skills, this too was an ideal rarely realized in practice. The standard solution to the communication problem was to hire bilingual first-line supervisors from the same ethnic group as the workers in their charge. In addition, on our factory tours we observed many bilingual signs.

The hiring process for production workers typically involved filling out an application form and a brief interview with either the personnel manager or the first-line supervisor. Few firms bothered to check workers' references. Only one of the 20 firms we visited conducted any pre-employment aptitude testing (in this case for vision and manual dexterity). Five of the firms did pre-employment drug testing, usually as part of a general physical exam. Two firms relied on temporary employment agencies to recruit new workers, but most simply hired workers "off the street." While waiting in the plant's front office prior to interviewing a manager, we frequently saw piles of blank application forms, and in a few cases we saw workers completing them. These plants rarely found it necessary to advertise job openings for production jobs; most could be easily filled by "walk-ins" and applications on file. Many firms relied on immigrant workers' networks to spread the word of any job openings. "Word spreads immediately if there's an opening," one manager told us. "We have never advertised for workers." Presumably this is what is meant by "labor force availability," that vague term so often mentioned by managers as a site selection criterion.

But what about the "quality" of labor, or "the attractiveness of our [California's] labor pool" as the Center for the Continuing Study of the California Economy put it in the extract quoted earlier? The terminology here is at best euphemistic. When pressed to specify the criteria they used in hiring, managers told us that they look for workers with "stable job histories," "reliability," "commitment," "willingness to work," "a manufacturing

mentality," and "people who are not looking to set the world on fire." Some admitted more straightforwardly that "we have no special criteria." One manager laughed outright at the question. "With what we pay," he told me, "if they wear shoes, we'll hire 'em."

The bottom line seems to be simply a willingness to work at low wages. Indeed, the immigrant population on which the Japanese-owned plants rely for their labor supply is highly concentrated in low-wage manufacturing in the state generally.[22] While well above the minimum wage levels typical of such industries as garment manufacturing, hourly pay levels in Japanese-owned plants are typically lower than the average wages prevailing in manufacturing generally, and this is presumably linked to the fact that they employ such large proportions of immigrants. The 45 Japanese-owned plants with 100 or more employees who provided wage information in our 1989 survey reported that they paid their production workers a (weighted) average hourly wage of $9.22. Government statistics, in contrast, report an $11.20 average for all manufacturing workers in the state in 1989, and a $10.63 average for manufacturing workers in Los Angeles County.[23] As Table 11 shows, the wage differentials are particularly wide in the electronics, food, and chemicals industry groups, which account for more than two-thirds of the plants surveyed that provided wage information. These disparities are especially striking in view of the fact that factory wages tend to be higher in larger plants, and the Japanese-owned plants surveyed all have 100 or more employees, while the government figures include plants of all sizes.

On the other hand, in the metals industry and motor vehicles groups, average wages were higher in the Japanese plants than statewide. This is probably because a relatively high proportion of workers in the Japanese plants in these industries are unionized. In metals, three of the seven responding plants (employing 62 percent of the workers in the seven plants) are unionized. (Two other responding metals plants had been unionized prior to being acquired by the Japanese; both closed for a brief period and later reopened as "nonunion operations." These two plants (plants P and T shown in Table 10) paid relatively high wages—and in the case of plant T, well above the industry average—presumably to ensure that the plant remained nonunion.) In motor vehicles, only one of the Japanese plants is unionized (NUMMI), but as an exceptionally large unit, accounting for over three-fourths of the

Table 11

Average Hourly Wages for Production Workers in Japanese-Owned Manufacturing Plants and in All Manufacturing, for Selected Counties and Industries in California, 1989

Industry Group	Japanese-owned Plants	All Manufacturing Plants (domestic and foreign-owned)				
		State of California	Los Angeles County	Orange County	Santa Clara County	San Diego County
Electrical & Electronics	$ 7.19 (n=24)	$11.18	$ 9.71	$11.83	$13.39	$11.70
Metals & metal products	$11.40 (n=7)	$10.52	$ 9.86	$10.58	$11.19	$10.39
Food & kindred products	$ 7.15 (n=4)	$11.15	$11.09	$10.62	$11.81	$ 9.79
Motor vehicles & parts	$13.14 (n=5)	$12.88	$13.75	$11.13*	$16.15*	$13.07*
Chemicals & allied products	$ 7.67 (n=4)	$12.08	$11.03	$11.88	$12.88	$12.23
All Manufac-turing	$ 9.22 (n=45)	$11.20	$10.63	$11.42	$13.32	$11.29

*These figures are for transportation equipment; separate data for motor vehicles and parts are not available.

Sources: For Japanese-owned plants, author's survey. Average wages shown are weighted and are average wages for *employees* in these plants (not the average of each plant's average wage). Other wage data are for June 1989 and are computed from Economic Information Group, Labor Market Information Division, *California Labor Market Bulletin: Statistical Supplement* (Sacramento, June 1990), Table 18.

workers in the five responding plants, it strongly affects the weighted average shown.

Both the union and nonunion Japanese-owned plants have fringe benefit packages for their hourly employees. Like more than 90 percent of production and service workers employed by U.S. firms with over 100 employees, hourly workers at all 20 of the plants I visited have some form of company-sponsored medical insurance. In many cases, employees pay part of the medical insurance premiums themselves, as is also standard practice in similar domestic firms. Other fringe benefits like life insurance and paid vacations are also provided by these Japanese-owned firms, and some plants offer dental insurance benefits as well. A few plants have cost-cutting "cafeteria" or flexible benefits packages, in which individual employees choose from a menu of available fringe benefits. Again following the national trend, retirement programs are less extensive at these firms than other fringe benefits. Ten of the 20 plants lack traditional defined-benefit pension plans, and seven more have defined contribution (401k) retirement plans. Again, the Japanese-owned firms are similar to comparable domestic firms in this respect, especially in newer industries like electronics.[24] As one would expect, the few unionized plants have more extensive benefits coverage.

Such unionized plants are exceptional, however. The overwhelming majority of the state's Japanese-owned plants are nonunion operations. Indeed, along with the vast supply of immigrant labor available to work at low wages, the absence of unionism, or what managers like to call "a good labor climate," is a major factor guiding plant location decisions for Japanese direct investors, as it has long been for nonunion domestic firms as well.[25] California's overall unionization rate is actually slightly higher than that of the nation as a whole—19 percent of the state's nonagricultural workforce was unionized in 1987, compared to 17 percent for the U.S.[26] However, union density is far lower in the specific industries and areas where JDI is concentrated in California, as Tables 9 and 12, taken together, reveal. As Table 9 shows, over half of the Japanese-owned plants in the state with more than 100 employees are in the electrical and electronic equipment industry. The second largest group (14 percent of the total) are primary metals or fabricated metal products plants.[27] Together these two industry groups account for 70 percent of the state's large Japanese-owned plants.

The available data on unionization rates in California group these two industries together with a third, nonelectrical machinery; unfortunately separate data are not available for the electronics or metals industries. Yet even the aggregated data point to extremely low unionization rates. As Table 12 shows, in the state as a whole, only 11 percent of all workers in the electronics, metals, and machinery industries were unionized in 1987. Unionization rates are even lower in most of the counties where the Japanese plants are concentrated. Two-thirds of the Japanese-owned electronics and metals plants (31 of 45) were located in Santa Clara, Orange, or San Diego Counties, where in the aggregated electronics, metals, and machinery industry group, unionization rates ranged from 1.7 to 6.5 percent. Most of the rest were in Los Angeles County, which had a slightly higher unionization rate of 12.7 percent. It is striking that not a single large Japanese-owned firm in these industries was located in the Alameda and San Francisco Counties, where union density is much higher (33.5 percent of this industry group).

There is reason to believe that these figures, low as they are, may *overstate* the prevalence of unionism, at least in the electronics industry—which accounts for the majority of the state's large Japanese-owned plants. Privately compiled national data indicate that electronics is an overwhelmingly nonunion industry. A 1982 survey conducted by the American Electronics Association found that only 90 of 1900 firms had union contracts with any of their employees.[28] Among the 36 Japanese-owned electronics plants in California with more than 100 employees, only one is unionized. On the other hand, as noted earlier, there are three unionized units among the state's large Japanese-owned metals and metal products plants (although all were unionized long before they were acquired by their present Japanese owners).

In addition to employing immigrant workers at relatively low wages in areas and industries where unionization is weak within California, several of the Japanese firms with plants in the southern part of the state have established *maquiladora* plants in Tijuana, Mexico. (See Figure 2b.) In these plants, wage costs are far lower than in California (average *maquiladora* wages plus benefits were $1.63 per hour in 1989) and in Tijuana, where the Japanese plants are concentrated, unions are weak or nonexistent. Under the Mexican government regulations for the *maquiladora* program, components can be imported into Mexico duty-free, assembled there, and then re-exported. Contrary to stereotypes, the operations conducted in Mexico under this program include

Table 12. Percent of Workers Unionized, for Selected Regions and Economic Sectors, California, July 1987

Economic Sector	Los Angeles County	Orange County	Santa Clara County	San Diego County	Alameda and San Francisco Counties	State of California
All Nonfarm Workers	19.7	13.7	14.5	13.1	25.7	18.9
All Manufacturing	19.6	11.6	9.8	21.7	35.0	21.6
Metals, electronics & machinery	12.7	6.5	4.1	1.7	33.5	11.1
Number of Japanese-owned metals & electronics plants	10	11	13	7	0	45[a]

[a] Total does not add because not all regions are shown.

Sources: Computed from data in California Department of Industrial Relations, *Union Labor in California, 1987* (San Francisco, 1989), and California Economic Information Group, *California Labor Market Bulletin: Statistical Supplement* (Sacramento, July 1988).

not only simple, unskilled tasks but also technologically advanced production processes that require highly skilled labor.[29]

The majority of the companies participating in the *maquiladora* program are based in the U.S., but in the past few years the Japanese presence has increased dramatically, especially in Tijuana. There are now about 65 Japanese-owned *maquiladoras*, which operate in tandem with Japanese-owned factories in California or other parts of the U.S. They are typically large operations, with about 600 employees per plant, or twice as many as the average *maquiladora*. In addition to the *maquiladoras*, there are about 100 other Japanese-owned manufacturing plants in Mexico. Still, only 5 percent of all foreign direct investment in Mexico is from Japan, and less than 1 percent of JDI worldwide goes to Mexico.[30]

While JDI in Mexico will probably continue to grow, it seems likely to do so as an adjunct to rather than a replacement for JDI in the U.S. Even with the duty-free status of *maquiladora* products and the future prospect of a free trade agreement between the U.S. and Mexico, there are fears on the Japanese side that increased investment in Mexico might unleash exactly the kind of protectionist sentiments in the U.S. that export-substitution industry is designed to preempt.[31] Although the Japanese *maquiladoras* probably will continue to siphon off jobs which might otherwise go to California, the option of establishing twin plants in Mexico (along with proximity to the Pacific, the labor supply and labor "climate") should continue to attract increased JDI in California itself as well in future years.

NOTES

1. As noted in the introductory chapter, a firm in which a foreign person, firm or government holds a 10 percent or greater interest is considered "foreign-owned," and I follow that usage here. In practice, however, most "Japanese-owned" firms involve a far greater foreign stake than the minimum 10 percent. The figures cited here for California's share of JDI are from U.S. Department of Commerce, Bureau of Economic Analysis, *Foreign Direct Investment in the U.S.: Operations of U.S. Affiliates of Foreign Companies, Preliminary 1988 Estimates* (Washington, D.C., August 1990), Tables D-23, F-8.

2. This figure includes only those plants where Japanese companies held a majority ownership share. See "Japan's Expanding U.S. Manufacturing Presence: 1989 Update," *JEI Report*, No. 2A, January 18, 1991 (Washington, D.C.: Japan Economic Institute, 1991), p. 4. Another survey conducted in May 1988 by the Japanese External Trade Organization (JETRO) counted 189 Japanese manufacturing plants in California, 23 percent of the 837 it enumerated in the U.S. as a whole. See JETRO, *Handy Facts on U.S.-Japan Economic Relations* (Tokyo: JETRO, 1989), p. 10. These data are more recent than those in Table 8; the latter however includes minority-owned firms as well.

3. The city of Tokyo has 23 wards. See Norman J. Glickman and Douglas P. Woodward, *The New Competitors: How Foreign Investors Are Changing the U.S. Economy* (New York: Basic Books, 1989), p. 211.

4. See Takeshi Nakabayashi, "A Study of Locational Choices of Japanese Manufacturing Companies in the U.S.," unpublished manuscript, John F. Kennedy School of Government, 1987, p. 14.

5. Glickman and Woodward, *New Competitors*, pp. 210-211. The "Far West" includes California, Oregon, Washington and Nevada.

6. All figures are for plants in which Japanese firms hold a majority interest. Data are from Japan Economic Institute, *Japan's Expanding U.S. Manufacturing Presence, 1986 Benchmark Survey* (Washington, D.C, December 1987), p. 3, and "Japan's Expanding U.S. Manufacturing Presence: 1989 Update," p. 4.

7. See Glickman and Woodward, *New Competitors*, pp. 211-212, for more information about the unitary tax and its modification.

8. For the Japanese-owned plants these data are derived from the year-end 1987 data in Japan Economic Institute, *Japan's Expanding U.S. Manufacturing Presence, 1987 Update* (Washington, D.C.: JEI, 1988), and author's survey. The data for all manufacturing plants in the state are from 1988 and are from U.S. Department of Commerce, Bureau of the Census, *County Business Patterns, 1988, California*, CBP-88-06 (Washington, D.C., September 1990).

9. These maps are based on the same source as Table 8 and Figure 1, except that since they overlap much more extensively with the author's survey (reported on in more detail below), several modifications were made. Not only (as in Table 8 and Figure 1) were plants eliminated from the list that had gone out of business, that are no longer Japanese owned, or that were discovered to be sales or distribution facilities rather than manufacturing plants. In addition, since most of the plants shown participated in the author's survey conducted in 1989, the employment figures from the survey were used instead of those in the JEI listing, except for nonresponding plants. In cases where the survey found that plants listed as having more than 100 employees in fact had less than that figure, they were eliminated from the list used to produce the maps.

10. Center for the Continuing Study of the California Economy, *California Economic Growth: Lessons of the 1980's; Outlook for the 1990's* (Palo Alto, November 1989), pp. 7-8, 70. See also "Success and Excess: A Survey of California," *The Economist*, vol. 317, no. 7676, October 13, 1990, special section; and Allen J. Scott, *Metropolis: From the Division of Labor to Urban Form* (Berkeley: University of California Press, 1988), especially Chapter 2.

11. The Los Angeles Basin includes Los Angeles County, Orange County, Ventura County, Riverside, and San Bernardino Counties, which had 59 percent of all the state's manufacturing employment in June 1989. Computed from *California Labor Market Bulletin: Statistical Supplement* (Sacramento: Labor Market Information Division, Economic Information Group, June 1990). The figure for Japanese-owned firms is from Table 8.

12. In 1985, the figure was 889,784 employees in private, nonfarm manufacturing establishments. See U.S. Department of Commerce, Bureau of the Census, *City and County Data Book* (Washington, D.C.: Government Printing Office, 1988), p. xxvi.

13. Computed from data in U.S. Department of Commerce, Bureau of the Census, *County Business Patterns, 1988, California*, CBP-88-06 (September 1990).

14. For access to the literature on the labor dimension of plant location choices, see Doreen Massey, *Spatial Divisions of Labour: Social Structures and the Geography of Production* (London: Macmillan, 1984); Michael Storper and Richard Walker, *The Capitalist Imperative: Territory, Technology and Industrial Growth* (New York: Basil Blackwell, 1989), especially Chapter 6; and Richard Peet, ed., *International Capitalism and Industrial Restructuring* (Winchester, Mass.: Allen & Unwin, 1987).

15. Glickman and Woodward, *New Competitors*, p. 209.

16. Center for the Continuing Study of the California Economy, *California Economic Growth*, p. 95.

17. For discussion of the tendency of Japanese-owned auto firms to avoid locating in areas where blacks make up a large proportion of the labor supply, see Robert E. Cole and Donald R. Deskins, Jr., "Racial Factors in Site Location and Employment Practices of Japanese Auto Firms in America," *California Management Review*, vol. 31, no. 1 (Fall 1988), pp. 9-22.

18. The census data for 1980 are computed from Table 228 of U.S. Bureau of the Census, *1980 Census of Population, Detailed Population Characteristics, California* (PC80 1-D6), Section 2 of 4 (November 1983). The data on legal immigration are computed from U.S. Department of Justice, Immigration and Naturalization Service, *1988 Statistical Yearbook of the Immigration and Naturalization Service* (Washington, D.C., August 1989), p. 35.

19. The 1986-88 estimate is computed from Current Population Survey data reported in Center for the Continuing Study of the California Economy, *California Economic Growth*, pp. 99-100. These data are rather unreliable at this level of detail and probably undercount undocumented immigrants. The 1990 population data are preliminary, as reported in U.S. Department of Commerce News Release, CB91-67, "Census Bureau Delivers California's 1990 Census Counts," Feburary 1991. Until the 1990 labor force data become available no more accurate count will be possible; already there are indications that the 1990 Census data also undercount immigrants. Still, there can be no mistaking the trend toward an increasing proportion of unskilled and semi-skilled factory workers being made up of immigrants.

20. See Andrew Mair, Richard Florida and Martin Kenney, "The New Geography of Automobile Production: Japanese Transplants in North America," *Economic Geography*, vol. 64, no. 4 (October 1988), pp. 352-373; Cole and Deskins, "Racial Factors in Site Location."

21. See Ruth Milkman, *Gender at Work* (University of Illinois Press, 1987) for detailed discussion of the history of such idioms in American manufacturing.

22. For discussions of immigrant labor in low-wage manufacturing in southern California, see Saskia Sassen, *The Mobility of Labor and Capital: A Study in International Investment and Labor Flow* (New York: Cambridge University Press, 1988); Edward Soja, *Postmodern Geographies* (New York: Verso, 1989), Chapter 8; and Paul Schimek, "Earnings Polarization and the Proliferation of Low-Wage Work," in Paul Ong, ed., *The Widening Divide: Income Inequality and Poverty in Los Angeles* (UCLA Graduate School of Architecture and Urban Planning, mimeo, June 1989), pp. 27-49.

23. The wage figure for the surveyed plants is a weighted average. It was computed as follows: first, the average hourly wage reported for production workers in each plant was multiplied by the number of production workers in the plant. Then the sum of the product of this computation was computed for the 45 plants. That sum was in turn divided by the total number of production workers in the 45 plants. This method takes account of the fact that the number of workers at the plants varies widely. The same method was used to compute the wages for the surveyed plants shown in Table 10. The average wage for the state and for Los Angeles County is for June 1989 and is from Table 18 of Labor Market Information Division, Economic Information Group, *California Labor Market Bulletin: Statistical Supplement*, June 1990.

24. In 1989, 93 percent of all full-time production and service employees in medium and large firms (defined in these data as firms with more than 100 workers) in the U.S. had medical insurance coverage, 95 percent had paid vacations, and 93 percent had life insurance. Dental programs were more unusual, covering 65 percent of this group. Sixty-three percent had defined benefit pension programs, and 40 percent had 401(k) or other defined contribution plan programs. See U.S. Department of Labor, Bureau of Labor Statistics, Bulletin 2363, *Employee Benefits in Medium and Large Firms, 1989* (Washington, D.C.: U.S. Government Printing Office, 1990), p. 4. See also the 1988 data published by the U.S. Chamber of Commerce on a partial sample of its members, which shows medical insurance for 100 percent of the manufacturing firms, life insurance for 93 percent, paid vacation for 97 percent, dental for 60 percent, defined benefit pension plans for 49 percent, and 401k plans for 47 percent. U.S. Chamber Research Center, *Employee Benefits, 1989 Edition* (Washington, D.C.: U.S. Chamber of Commerce, 1989), p. 22. On the recent decline in employer-financed defined benefit pensions, see also "In Search of the Vanishing Nest Egg," *Business Week*, July 30, 1990, p. 46.

25. On the absence of unions as a consideration for plant location for domestic firms, see Fred Foulkes, *Personnel Policies in Large Nonunion Companies* (Englewood Cliffs: Prentice-Hall, 1980) pp. 20-22; and Thomas A. Kochan, Harry C. Katz, and Robert B. McKersie, *The Transformation of American Industrial Relations* (New York: Basic Books, 1986), pp. 66-68.

26. California Department of Industrial Relations, Division of Labor Statistics and Research, *Union Labor in California, 1987* (San Francisco, 1989), p. 3; U.S. Bureau of Labor Statistics, *Employment and Earnings*, vol. 36, no. 1 (January 1989), pp. 225-226.

27. These 64 firms are those listed in the 1987 JDI survey as having 100 employees or more. A few others listed there that were later found to be no longer in business, nonmanufacturing firms, or not Japanese-owned were excluded from the data.

28. Steve Early and Rand Wilson, "Do Unions Have a Future in High Technology?" *Technology Review*, vol. 89, no. 7 (October 1986), p. 61. By contrast, Bureau of Labor Statistics data for May 1980 (the last time detailed unionization rates by industry were published by the BLS) for the "electrical equipment" industry, which includes electronics but also various forms of electrical machinery and electrical products of an older sort, show a unionization rate of 30 percent. These data also show a rate of 31 percent for nonelectrical machinery, 61 percent for primary metals, and 39 percent for fabricated metals. While deunionization has surely lowered these rates over the 1980s, these high figures do suggest that the aggregate data cited in the text may indeed be rather misleading, in that they probably overestimate the extent of unionization. The BLS data may be found in U.S. Department of Labor, Bureau of Labor Statistics Bulletin 2105, *Earnings and Other Characteristics of Organized Workers, May 1980* (September 1981), p. 16.