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THE CRUMBLING OF SMOKESTACK CALIFORNIA: A CASE STUDY IN INDUSTRIAL RESTRUCTURING AND THE REORGANIZATION OF WORK*

Philip Shapira**

INTRODUCTION

In recent years, there has been a growing concern in the United States about industrial dislocation and plant shutdowns. As a result of corporate decisions to rationalize production, reduce capacity, and relocate work, large numbers of workers have been displaced and many communities throughout the country disrupted. The traditional manufacturing industries (such as automobiles, steel, rubber) have been particularly hard hit by closures, although shutdowns and job eliminations have also occurred in the high-technology and service-performing sectors.

The immediate impact of job loss on workers and local communities -- whether through a major closure or a through the cumulative effect of a series of smaller shutdowns -- is invariably adverse. Job displacement usually leads to loss of income, family stress, and damage to physical and mental health (Slote, 1969; Mick, 1975; Brenner, 1976; Liem and Rayman, 1982). Other workers and businesses in the community are often hurt through the "ripple effects" of closures, local tax revenues are lost, and governments face increased demands for social and public services (Aaronson and McKersie, 1980; Buss and Redburn, 1983). Over the longer term, displaced workers tend to suffer permanent income loss, downward occupational mobility, chronic unemployment, and premature retirement (Parnes and King, 1977; Jacobson, 1978, 1979).

The total number of workers and plants affected by shutdowns in the United States is difficult to know -- in part because (with only a few exceptions) firms are not required to tell local governments and state and federal agencies when they close plants. But the evidence that is available suggests the problem is considerable. Bluestone and Harrison (1982) estimate that between 1969 and 1976, more than 22 million jobs were lost through plant closures and relocations in the United States. According to this study, 30 percent of manufacturing plants with more than 100 workers in 1969 had closed by 1976. A separate census by Schmenner (1982) of 410 large U.S. manufacturing corporations showed that 21% of their establishments were closed between 1970-79, while a Brookings Institution study estimated that closures of branches and subsidiaries resulted in the loss of 6.6 million (or 1 in 3) jobs in the manufacturing sector from 1978-82 (Harris, 1983). Finally, a recent federal survey

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reported that 5.1 million workers were displaced by closures and job eliminations between 1979 and 1984, with 2.5 million workers dislocated in manufacturing (Bureau of Labor Statistics, 1984).

The "problem" of plant closures is not, of course, new in and of itself. Historically, economic and industrial development has involved the destruction of both capital investment and existing patterns of production and reproduction (Schumpeter, 1934). For example, during the nineteenth century, the rapid growth of the factory system caused tremendous displacement in long-established artisan trades. In the Great Depression of the 1930s, there was a massive wave of plant shutdowns, with severe joblessness and hardship (Jahoda, 1982). Plant and job eliminations were also a concern in the 1950s and 1960's as automation and suburbanization changed the processes and locations of production within the country (Gordus, et al., 1981).

Yet while plant closures are not new, several significant differences are evident in the present round of restructuring and reorganization. First, the growth and concentration of transnational corporations and the ability of these firms to shift capital have added a new global dimension to industrial change. Large firms now have an unprecedented capacity to coordinate and reorganize their production and investments not just across regions, but across national boundaries. Second, the introduction of new technologies in production, transportation and communications allows new ways of organizing work, as well as increased levels of productivity, that were not possible in earlier periods. Finally, the sheer pace or velocity of change appears to have accelerated, at least compared with experience in the period immediately after World War II (Bluestone and Harrison, 1982).

The contemporary process of industrial change and restructuring is the central focus of this working paper. Through a case study of events and experience in California, the paper examines how industrial sectors and enterprises are changing their patterns of production, leading in many cases to job loss, workplace reorganization, and plant closures. It is argued that the pattern of industrial restructuring in California is affecting not just physical changes in plant locations and the number and types of jobs available in the state, but also important changes in the organization of work and in the institutional structures associated with work. Plant closures and job losses have most heavily affected workers in basic industries like automobile production, steel, electrical goods, rubber, lumber, and food processing. These "smokestack" industries not only played an important role in the development of California's economy in the early post-World War II decades, but also provided the base for the establishment of important workplace, social, and community relationships. Workers in

these industries traditionally formed the core of industrial trade unionism in California.

In contrast, the sectors of new employment growth (especially the high-technology sectors) have different occupational and organizational characteristics. The advent of high-technology in California thus does not resolve the tensions between capital and community resulting from the decline of older sectors. In fact, high-technology development adds its own set of tensions to the picture. The article concludes by raising some broader implications of the California experience for industrial policy in the United States.

INDUSTRIAL RESTRUCTURING AND CALIFORNIA -- A CONTEXT

Most research on industrial restructuring (especially on plant shutdowns) focuses, understandably, on the U.S. Northeast or Midwest. [1] This regional concentration of much of the research literature has at times reinforced the notion that states like California (as well as other "sunbelt" states) are exempt from the adverse effects of industrial change. California is typically thought of as a growth state (which it is in overall terms), with vibrant high technology activity. Yet California is also the site for much basic manufacturing industry, and the state has been affected, as elsewhere, by structural change in those sectors. Old patterns of production are being replaced by new ones -- a process affecting high-technology too. In short, California is very much on the leading edge of change among advanced industrialized regions.

Indeed, Marx noted this point about California's leading role back in 1880 in a letter he wrote to a friend, Fredreich Sorge:

I should be very pleased if you could find me something good (meaty) on economic conditions in *California*... California is very important to me because nowhere else has the upheaval most shamelessly caused by capitalist centralization taken place with such speed.[2]

That was 1880. Today, as we look back over the more than 100 years since Marx's letter, we can see that California really has been a place where the changes caused by capitalist development and restructuring have been both rapid and far-reaching. California's history and development has been one wrought by change -- from the building of the railroads, the gold rush, the development of agribusiness, the consolidation of the large lumber and land-owning companies, consistent population growth, the development of the movie industry, aerospace, freeways, and suburbanization, through to the modern high-technology industries of Silicon Valley.[3]

The timetable of many of these changes has been relatively short. In the steel industry, for example, some countries and regions have been battling flux and change for more than a century. In California, large-scale basic steel production was established during the Second World War, and had just about left by the 1980s -- a time-frame of about 40 years (Grether, 1946; Senate Office of Research, 1983). Similarly, in the automobile industry, the period of most rapid growth in California was during the 1950s and 1960s, when General Motors and Ford built major new assembly plants in the state and California rose to third place among the states in automobile output. As major plants were built, new suburban communities grew up around these facilities, providing model conditions for the development of the working-class consumption and consumerism of the 1950s and 1960s. Now, by the 1980s, California vehicle production (together with the associated production of glass, rubber, and other parts) has been drastically reduced.

At the same time, within the span of just a couple of decades, whole new industries have developed in the state, the prime example being the electronics industry of Silicon Valley. Sometimes we take California's high-technology industries for granted -- and it is important to note that the state has numerous aerospace, electrical, and communications (all often defense-oriented) establishments dating back to the 1940s. But it was only in the late 1950s that Fairchild Semiconductor was founded, the early 1970s when Intel developed the microprocessor, and 1977 when Apple introduced its first microcomputers (Braun and MacDonald, 1978; Frieberger and Swaine, 1984).

In short, California exemplifies the juxtaposition of production growth, change, and decline. In recent years, the changes in the state's industrial base appear to have been particularly rapid. In this, California's experience is not unusual since, in the last decade, the United States as a whole (and much of the advanced industrialized world) has been going through perhaps the greatest restructuring of production since the 1930s. As part of the broader economy, California has clearly been affected by these changes. At the same time, the state has its unique aspects. By virtue of its history, its dynamism, and also its particular location between the American industrial heartland and the Pacific rim, California is today arguably not just sharing in industrial restructuring, but playing a leading role.

OVERALL TRENDS IN CALIFORNIA'S ECONOMY

In terms of aggregate performance, the record of the Californian economy has been one of vibrance and growth. With 10 percent of the nation's people, the state produces 12 percent of the U.S. gross national product. The annual rate of increase in gross product in the state has consistently exceeded the national average, although the state's growth rate fell from an annual compound average of 5 percent in the 1950s to about 3.8 percent in the 1970s (Teitz, 1983).

Two key elements in California's growth have been comparatively rapid increases in population and in employment. In 1930, California was sixth in population among the states. Today it is first. And, as Figure 1 indicates, California's overall employment growth rate has exceeded the nation's throughout the last forty years. The 1940s and 1950s were particularly strong periods of employment expansion in California, as indeed were the 1960s and 1970s. Even though the state's employment growth rate slowed in these two latter decades, it still exceeded the nation's.

During the 1940s, California received a very substantial share of wartime production, which strongly stimulated the state's manufacturing sector. Manufacturing employment continued to grow in the years immediately following the war, especially in the San Francisco East Bay area and the Los Angeles basin. The Korean war gave Los Angeles -- with its aircraft and other defense-related industries -- an additional boost. By the early 1960s, as additional manufacturing plants were established, a 20-mile stretch of production activity had developed in Los Angeles making it one of the world's largest urban industrial zones (Soja, et. al., 1983).

Manufacturing employment in California increased more slowly during the 1960s, with a growth rate only slightly above the national average. During this decade, some

FIGURE 1: EMPLOYMENT GROWTH, U.S. AND CALIFORNIA, 1940-1983
Compound Annual Percent Change

	1940-50	1950-60	1960-70	1972-79	1979-83
<i>Total Employment</i>					
United States	3.4	1.8	2.7	2.9	0.0
California	5.2	4.3	3.6	4.3	0.7
<i>Manufacturing Employment</i>					
United States	3.3	1.0	1.4	1.4	-2.9
California	5.6	5.7	1.7	3.9	-1.0

Sources: Wage and salary workers in non-agricultural establishments, 1929-83, Economic Report of the President, Table B-37 (Washington D.C.: GPO, 1984); Employment Development Department, Annual Planning Information for California, 1984-1985 (Sacramento: EDD, 1984).

of the state's rural areas began to receive new manufacturing investments. In the urban centers, suburban expansion (including the relocation of plants to these new communities) was also an important feature of growth. In the 1970s industrial growth accelerated once more in California. Between 1972-1979, manufacturing jobs in the state grew at a rate nearly three times the national average. Another war build-up (this time in Vietnam) helped in the early part of the decade, although the run-down of the war towards the end of the decade subsequently caused a slump in defense-related industries.[4] The 1970s also saw the emergence of Santa Clara County as the pre-eminent global center for the development of electronics and computer products (Saxenian, 1981).

Between 1979-83, there was a decline in California's manufacturing employment, although the decline was significantly slower than for the nation as a whole during this business-cycle affected period. During the same period, overall employment grew in the state, while it was static nationally. The most significant non-manufacturing job increases were recorded in services, followed by the retail and the financial, insurance, and real estate sectors (see Figure 2). Importantly, the average annual pay levels of the major growing job sectors were below the average levels in the job-loss sectors.

On the basis of these overall growth statistics, California's track record in manufacturing employment appears to be comparatively good. During the post-World War II decades, the state has exceeded the national performance in manufacturing. Even in the most recent slump, the state's rate of decline was below the national average. Such statistics make it appear that California's manufacturing base is very healthy. However, such a finding would be quite premature. As we will see, there have been a series of important structural changes in California's manufacturing sector which present significant problems for workers, communities, and government. These include:

- (1) A transition within California manufacturing away from basic industries towards high-technology industries.
- (2) A sharp reversal in the trend of growth within the basic industries themselves -- from a picture of broad expansion in the 1970s to substantial job loss in the early 1980s.
- (3) Severe job losses within certain key basic industries in the state. These industries include automobile production, steel, other metal working sectors, lumber, rubber, and food processing.
- (4) The emergence of considerable differences between the growing high-technology sectors and the job-loss basic industries in terms of the levels and distribution of wages, skill levels, extent of unionization, type of workforce, and production locations.

**FIGURE 2: MAJOR EMPLOYMENT SECTORS IN CALIFORNIA IN 1983
AND JOB GAINS AND LOSSES, 1979-83**

	1983 Employment		Change 79-83	Average
	Thousands	Percent	Thousands	Annual Pay, 1983*
• Significant Job Gains				
Services	2349.8	23.6%	265.3	76.3%
Retail	1731.1	17.9%	71.4	49.2%
Fin Ins & Real Est	655.9	6.6%	60.0	89.0%
Wholesale	597.1	6.0%	33.0	96.3%
• Small Job Increases or Decreases				
Mining	47.4	0.5%	8.1	139.7%
Trans Pub Util	534.8	5.4%	0.1	109.9%
Government	1725.1	17.4%	-9.9	86.6%
• Significant Job Losses				
Manufacturing	1927.2	19.4%	-75.5	100.0%
Construction	359.7	3.6%	-89.0	105.6%
State Total (Non-Agricultural)	9928.0	100.0%	263.4	--

*Average annual pay for manufacturing in California in 1983 (\$23,310) = 100.0

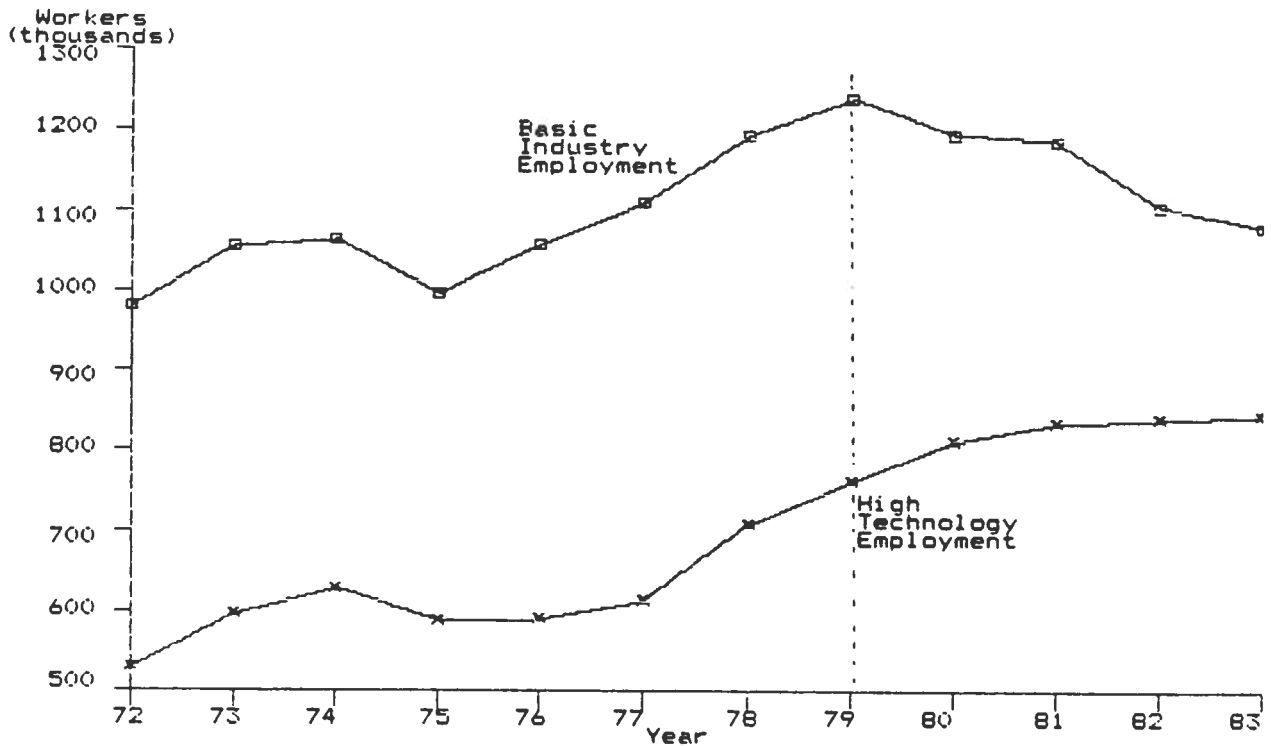
Sources: EDD Annual Planning Information, op. cit.; Bureau of Labor Statistics, Average Annual Pay by State and Industry, 1983, USDL 84-378, August 1984.

RECENT CHANGES IN CALIFORNIA MANUFACTURING

Developments over the last decade in California's manufacturing sector can be considered in two phases. In the first phase, between 1972 and 1979, total manufacturing employment grew by about 467,00 jobs. With the exception of a downturn in 1975, employment in both high-technology and basic industries in California experienced a broad upward growth trend during this period. Figures 3 and 4 illustrate these trends. In these figures, the high-technology sector is defined as industries where the proportion of technical occupations is greater than or equal to the average for all manufacturing, and the ratio of research and development expenditures to sales is close to or above the average. Basic industries are those industries which do not meet these criteria. [see Note 5 for further explanation of methodology].

Although the growth rate of basic industry employment was slower than that of high technology between 1972-79, the fact that employment growth in basic industry was still positive meant that the *share* of employment in basic industry in California decreased only slightly from 1972 to 1979. In 1979, however, basic industrial employment in California began to turn down. In this second phase, between 1979 and 1983, the greatest drop in manufacturing employment came during the deep recessionary

FIGURE 3: EMPLOYMENT CHANGE
MAJOR MANUFACTURING SECTORS, CALIFORNIA 1972-1983



Source: EDD Annual Planning Information, California, 1984-1985

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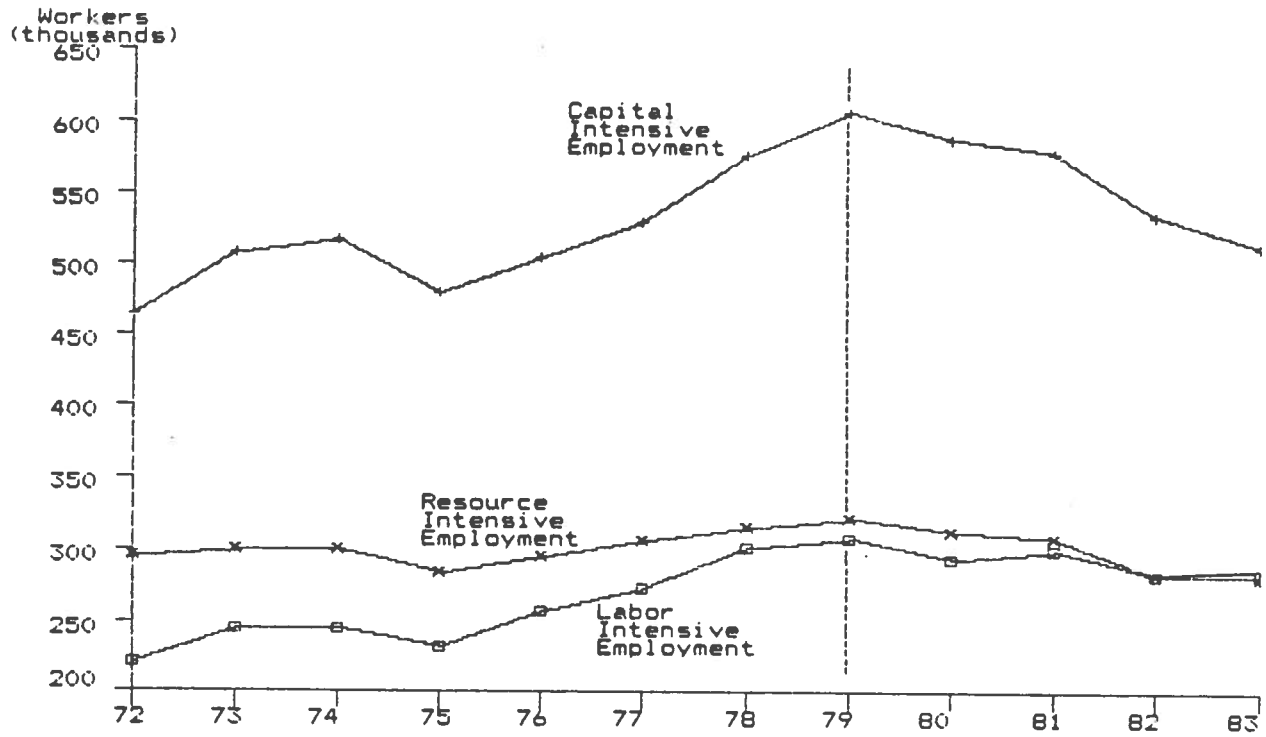
EMPLOYMENT IN MANUFACTURING, CALIFORNIA 1972-1983

Year	Manufacturing Employment (thousands)	Basic Industry %	High Technology %
1972	1536.4	64.0	36.0
1973	1653.8	63.9	36.1
1974	1694.5	62.9	37.1
1975	1587.7	62.9	37.1
1976	1651.4	64.1	35.9
1977	1728.6	64.4	35.6
1978	1905.8	62.7	37.3
1979	2002.9	61.9	38.1
1980	2008.6	59.6	40.4
1981	2023.1	58.8	41.2
1982	1945.8	56.9	43.1
1983	1927.7	56.1	43.9

Source: EDD Annual Planning Information, op.cit. For details of classification scheme, see Note 5 and Appendix 1.

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FIGURE 4: EMPLOYMENT CHANGE
BASIC INDUSTRIAL SECTOR, CALIFORNIA 1972-1983



Source: EDD Annual Planning Information, California, 1984-1985

EMPLOYMENT CHANGE BY MANUFACTURING SECTOR, CALIFORNIA, 1972-1983

	Employment thousands			Change		percent*	
	1972	1979	1983	thousands	thousands	72-79 %	79-83 %
o Basic Industry	983.1	1,239.1	1,081.5	256.0	-157.6	3.4	-3.3
- Capital Intensive	465.0	607.8	513.1	142.8	-94.7	3.9	-4.1
- Labor Intensive	224.4	309.3	285.6	84.9	-23.7	4.7	-2.0
- Resource Intensive	295.7	322.0	282.8	26.3	-39.2	1.2	-3.2
o High Technology	553.3	763.8	846.2	210.5	82.4	4.7	2.6
State Total (All Manufacturing)	1,536.4	2,002.9	1,927.7	466.5	-75.2	3.8	-1.0

* Annual Compound Rate of Change

Source: EDD, Annual Planning Information, op.cit.
See Note 5. and Appendix 1 for details of classification scheme.

downturn of 1981 to early 1983. But it is important to note that the overall reversal in basic industry employment in California began in 1979, before the adverse onslaught of the business cycle.

Within different segments of basic industry, there are some interesting contrasts over the 1972-1983 period. Using the methodology described in Note 5, separate statistics were developed for capital-intensive, labor-intensive, and resource-intensive basic industry segments (see also Figure 4). California's capital-intensive sector (including automobile production and steel) shows perhaps the largest fluctuation, growing in employment at a rate of about 3.4 percent a year in the mid- to late-1970s, and then losing jobs sharply between 1979 and 1983. The resource-intensive sector (including lumber and food processing) grew more slowly in the 1970s, but then also experienced a sharp decline from 1979-1983. Finally the labor-intensive sector (including apparel, textiles, and furniture) grew rapidly in the 1970s, turned down in 1979, but then began to pick up a little in 1982.

At the same time, the high-technology sector in California grew throughout the period under discussion. The most rapid growth was between 1972-1979, when it grew at an annual rate of 4.7 percent. Growth continued strongly through to 1981, at which point it slowed quite markedly to 1983. Within the high technology sector, the five biggest gainers of jobs between 1979 and 1983 were communications equipment, electronic components, guided missiles and space vehicles, office and computing equipment, and measuring and controlling instruments (see Figure 5). All of the five biggest job gaining industries were in high technology.

In contrast, the five industries experiencing the biggest losses in employment between 1979 and 1983 were all in the basic industrial sector. Four were capital intensive industries -- motor vehicles and equipment, blast furnaces and steel, non-electrical machinery, and structural metal products. The fifth job-losing industry was resource-based -- logging camps and sawmills. In a simple comparison of average wage rates, all five of the largest job-losing sectors paid above the average hourly manufacturing wage in California, as did three of the job-gaining sectors. But two job-gaining sectors (electronics components and office and computing) paid below the average hourly wage.

In addition to wage rates, significant differences in occupational, racial, and gender composition characterize the industries that are declining and growing in California (Figure 6). Basic industries like motor vehicles and steel predominantly employ blue-collar production workers, with relatively few technical employees. The wages and fringe benefits in these industries are comparatively high. In California, women

**FIGURE 5: FIVE BIGGEST JOB GAIN AND JOB LOSS SECTORS
MANUFACTURING EMPLOYMENT, CALIFORNIA, 1979-1983**

1979-83 Job Gaining Industries			1979-83 Job Losing Industries	
• Above Average Hourly Wage	Communications Equipment	29.5	Motor Vehicles and Equipment	-20.5
	Guided Missiles and Space Vehc	14.7	Blast Furnaces and Steel	-11.3
	Measuring & Contr Instruments	5.9	Other Machinery, exc. electrical	-8.4
• Below Average Hourly Wage			Structural Metal Products	-8.4
			Logging Camps & Sawmills	-8.0
	Electronic Components	23.7		
	Office & Comput Equipment	15.2		

Note: Job Gains or Loss in thousands.

Source: EDD Annual Planning Information; California Labor Market Newsletter, Average Hourly Wages of Nonagricultural Employees, September 1982.

comprise a small proportion of the workforce, and there is significant representation of black and Hispanic workers.

In contrast, the computer industry has a very high number of white-collar and technical workers, with a much smaller proportion of blue-collar production workers. Interestingly, the electronics industry does have quite a high proportion of production workers, but average wages are low. The electronics workforce also has a comparatively high female composition, although it is important to note that most of the women work in production (see: Green, 1983). In both computers and electronics, production wages and fringe benefits are lower than in motor vehicles and steel, and the gap between production and non-production wages is significantly wider. The computer and electronics industries also employ a rather lower proportion of black and Hispanic workers, while employing a relatively larger share of workers of Asian origin.

**FIGURE 6: COMPARISON OF MAJOR
JOB GAINING AND LOSING INDUSTRIES IN CALIFORNIA**

	Motor Vehicles	Blast Furnaces and Steel Products	Office Computing and Accounting Machines	Electronic Components
(a) <i>Job Change 79-83</i>	-20,300	-11,300	+15,200	+23,700
(b) <i>Occupational Distribution 1980 (per cent)</i>				
• White Collar	20.2	17.7	66.3	37.7
Tech Oriented	(5.9)	(3.9)	(27.3)	(5.0)
• Blue Collar	76.8	80.2	32.7	61.0
• Service	3.0	2.1	1.0	1.3
Total	100.0	100.0	100.0	100.0
(c) <i>Average Annual Income 1981 (\$)</i>				
• Non-Production	32,831	31,108	26,174	24,738*
• Production	26,891	27,071	15,560	15,456
Prod/Non-Prod	81.9%	87.0%	59.5%	62.5%
Fringe Benefits	27.1%	22.4%	11.5%	12.6%
(d) <i>Workforce Composition 1980 California</i>				
				••
• Women	15.5	11.8	37.0	45.3
• Black	7.9	9.2	4.3	5.0
• Asian	3.8	3.2	10.7	11.4
• Hispanic	33.7	28.1	12.9	19.6

* This section, semiconductors.

•• Other electrical and electronic equipment and supplies.

Sources: (a) EDD Annual Planning Information, California, 1984-1985; (b) BLS national figures, in Riche, et al. (1983); (c) U.S. Census of Manufactures, 1981, national figures; (d) U.S. Census, 1980, California figures.

In summary, it is hopefully now apparent that a disaggregated view needs to be taken in order to fully understand the developments in the California manufacturing economy. Basic industries have experienced job losses in recent years, especially in capital-intensive sectors. These job losses are certainly related to the deep recessionary downturn experienced in recent years. But it is also clear that structural changes

are taking place (a question the following section takes up). As we have seen, there are significant differences between typical growing and job-loss industries in California. Workers displaced from the basic industries are likely to find it difficult to make the transition, and even when they do, wages and fringe benefits will be significantly less than those in the jobs they have lost [6].

SHUTDOWNS: THE CALIFORNIA EXPERIENCE

The previous section of this paper has set an economic and temporal context for understanding plant closures and job loss in California. From this evidence, it is apparent that California's industrial base has experienced both cyclical and structural change, a feature common to other industrialized regions (as in the Northeast-Midwest) which are more common sites for studies of plant closures. At the same time, California also differs from many other states (Massachusetts is perhaps one of the definite exceptions) in that it has a very significant high technology sector which has added considerable numbers of jobs, even through the most recent recession. But, as we have also noted, the jobs available in this high-technology sector are not necessarily substitutes for the jobs being lost in the state's basic industrial sector.

Up to this point, however, the paper has dealt with aggregate statistics only, i.e. net changes in employment sectors over time. This evidence informs us of general trends; it says little about the turnover and turbulence, both in terms of gross plant closures and job losses (as well as plant openings and job gains), within each sector. Understanding this set of dynamics -- who is closing and opening plants, where, when, and why -- is crucial to grasping what is happening to the manufacturing economy.

Unfortunately, there is little reliable and accessible data at the micro, plant-level scale on openings and closings. One option is to analyze the establishment data-base collected by Dun and Bradstreet, the method employed by Bluestone and Harrison (1982) and Harris (1983). A second method is the development of data based on independent surveys and research (Shapira, 1983). These approaches all have advantages and disadvantages (see Harris, 1983, for a discussion of different methodologies for estimating plant closings). In the analysis which follows, use is made of available statistics from the California Employment Development Department (EDD). It should be remembered that because of the definitions and methods of collection employed, this particular series severely underestimate the total size of the problem (see Note 7). Nonetheless, this data is accessible and it does provide a rough guide to the relative impact of closures on different industries and areas within California.

According to the EDD statistics, nearly 118,000 workers are recorded as losing jobs in 744 manufacturing plant closures between January 1980 and June 1984 (see Figure 7). Several hundred thousand other workers also lost jobs during the same period as a result of layoffs and reductions in operations. These closures and layoffs occurred most frequently between 1981-1983, adding to the sharply increased unemployment rate of 11.1 percent which was reached in California in 1982 during the depths of the recent recession.

Within manufacturing, the EDD statistics indicate that the largest number of jobs lost in California has been in transportation equipment (auto and aerospace), followed by food processing (canneries), electrical and electronic equipment, fabricated metals, rubber and plastics, lumber and wood products, and apparel and textiles.

**FIGURE 7: RECORDED PLANT CLOSURES BY INDUSTRY IN CALIFORNIA
JANUARY 1980-JUNE 1984**

Industry	Recorded		
	Jobs Lost in Closures ^a	Number of Closures ^a	Job Loss Per 1000 workers ^b
Transportation Equipment	22048	49	80
Food & Kindred	18396	80	98
Electrical Equip & Supplies	14654	61	43
Machinery, Exc Electrical	8656	57	36
Fabricated Metal Products	7313	65	47
Rubber & Misc Plastics	6854	29	105
Apparel & Other Textile	5654	96	53
Lumber & Wood Products	5540	59	90
Primary Metal Industries	3634	27	63
Textile Mill Products	3381	24	234
Furniture & Fixtures	3342	40	61
Printing & Publishing	3039	29	24
Chemicals & Allied	3039	29	46
Misc Manufacturing Indust	2635	24	66
Stone, Clay & Glass	2480	21	43
Petroleum Refining & Rel	2450	10	88
Instruments & Related	2205	22	22
Paper & Allied Products	2004	15	51
Leather & Leather Products	631	7	57
State Total (Manufacturing)	117955	744	28

Note: Because of issues in identifying and recording closures, these data significantly underestimate the number of closures and associated job loss.

Sources: (a) Employment Development Department, "Closed Businesses in California," (Sacramento: EDD, January 1980 -- June 1984; (b) March 1980 base, from Bureau of the Census, County Business Patterns, California CBP 80-6 (Washington DC: Department of Commerce, July 1982).

This wave of closures has significantly affected California's industrial base.[8] In the vehicle industry, only one major assembly plant (GM Van Nuys) is open in the state after shutdowns by Ford at Pico Rivera (1980: 2,300 workers) and at Milpitas (1983: 4900), General Motors in Fremont (1982: 5,860) and South Gate (1982: 4,700), and Mack Truck (1981: 1,400). California's steel industry has been much reduced, with closures by U.S. Steel in Torrance (1980: 500), Commerce (1979: 700), and Antioch (1978-1981: 400), and by Bethlehem Steel in Los Angeles and Vernon (1982-1983: 1,000). Kaiser Steel, which was the last integrated steel works left in California, closed in 1983-1984. (Appendices 2 and 3 provide further details on closures and shutdowns in the auto and steel industry).

The rubber industry has been heavily hit, with shutdowns by Firestone in South Gate (1980: 1,400) and Salinas (1981: 1,700), and by Goodyear in Los Angeles (1980: 1,600) ending tire production in California. A number of food processors have closed, including Libby in Sacramento (1980: 1,000), Bumble Bee in San Diego (1982: 900), and Glorietta in San Jose (1980: 3,000). The electrical and electronics industry has been affected too, with shutdowns by General Electric in Ontario (1982: 1,000), GTE in San Carlos (1982: 1,075), and cutbacks by Atari in Sunnyvale (1983: about 6,000), and numerous other high-tech firms, including Mattel, Victor, Osborne, and Tandem (see Shapira and Ross, 1984). Atari -- owned by New York-based Warner Communications -- gave no notice at all to the first group of 700 workers it laid off. The workers, who had been in the process of organizing a union at the time of the announced closure, were informed that their jobs were being shifted to Hong Kong and Taiwan. (Shorrock, 1983). Finally, in aerospace, decisions by McDonnell-Douglas and Lockheed to run down their commercial aircraft lines and concentrate on military production have led to significant lay-offs in Southern California.

In terms of the geography of plant closures, the large urban counties containing much of California's industrial base have lost the greatest number of jobs in shutdowns. Los Angeles and Alameda Counties suffered the heaviest losses. Orange County, Santa Clara County, and San Diego County are the next most affected. (See Figure 8. Note that these numbers include all workers, not just those in manufacturing, although manufacturing does comprise the bulk of recorded closures in most counties). San Francisco, which lost most of its industrial base before the present wave of shutdowns, has been less affected, with most of its closures in office and service industries.

However, when measured by job loss per 1,000 workers, Fig. 8 shows that rural counties have been the hardest hit. In 39 months between January 1980 and June

FIGURE 8: RECORDED PLANT CLOSURES BY COUNTY IN CALIFORNIA
JANUARY 1980-JUNE 1984

County	Recorded Jobs Lost	Closures	Job Loss per 1000 workers	County	Recorded Jobs Lost	Closures	Job Loss per 1000 workers
Alameda	16387	122	43	Sacramento	5674	79	27
Butte	757	7	24	San Benito	486	4	119
Calaveras	260	3	90	San Bernadino	5375	41	26
Contra Costa	2407	22	15	San Diego	12011	87	22
Del Norte	539	5	127	San Francisco	5524	84	11
El Dorado	130	8	8	San Joaquin	1249	34	14
Fresno	3504	47	24	San Louis Ob.	652	10	19
Humboldt	929	9	34	San Mateo	6057	47	26
Imperial	300	11	16	Santa Barbara	4243	33	42
Inyo	48	3	9	Santa Clara	13236	118	21
Kern	1644	25	16	Santa Cruz	524	9	11
Lassen	145	4	46	Siskiyou	1187	9	150
Los Angeles	65990	652	20	Solano	669	13	16
Madera	245	7	22	Sonoma	1003	17	13
Marin	377	8	6	Stanislaus	3118	33	45
Mendocino	175	3	10	Sutter	810	4	79
Merced	703	12	29	Tulare	886	12	17
Monterey	3484	12	53	Venutura	1651	32	14
Napa	163	5	7	Yolo	485	12	19
Nevada	276	12	26	Yuba	318	7	39
Oranje	16261	149	20				
Placer	284	7	11				
Riverside	4276	53	27				
Total (not all counties included)					184442	1871	22
Metro Counties					175433	1736	22
Nonmetro Counties					9009	135	29

Note: Because of issues in identifying and recording closures, this data significantly underestimates the number of closures and associated job loss.

Sources: (a) Employment Development Department, "Closed Businesses in California." (Sacramento: EDD, January 1980 - June 1984; (b) March 1980 base, from Bureau of the Census, County Business Patterns, California CBP 80-6 (Washington DC: Department of Commerce, July 1982).

1984, Siskiyou lost about 15 percent of its total employment base to closures, followed by Del Norte (which lost nearly 13 percent), and San Benito County (losing nearly 12 percent). The decline of resource-based industries, especially lumber and food-processing, has been a major contributing factor to these high rural job-loss rates.

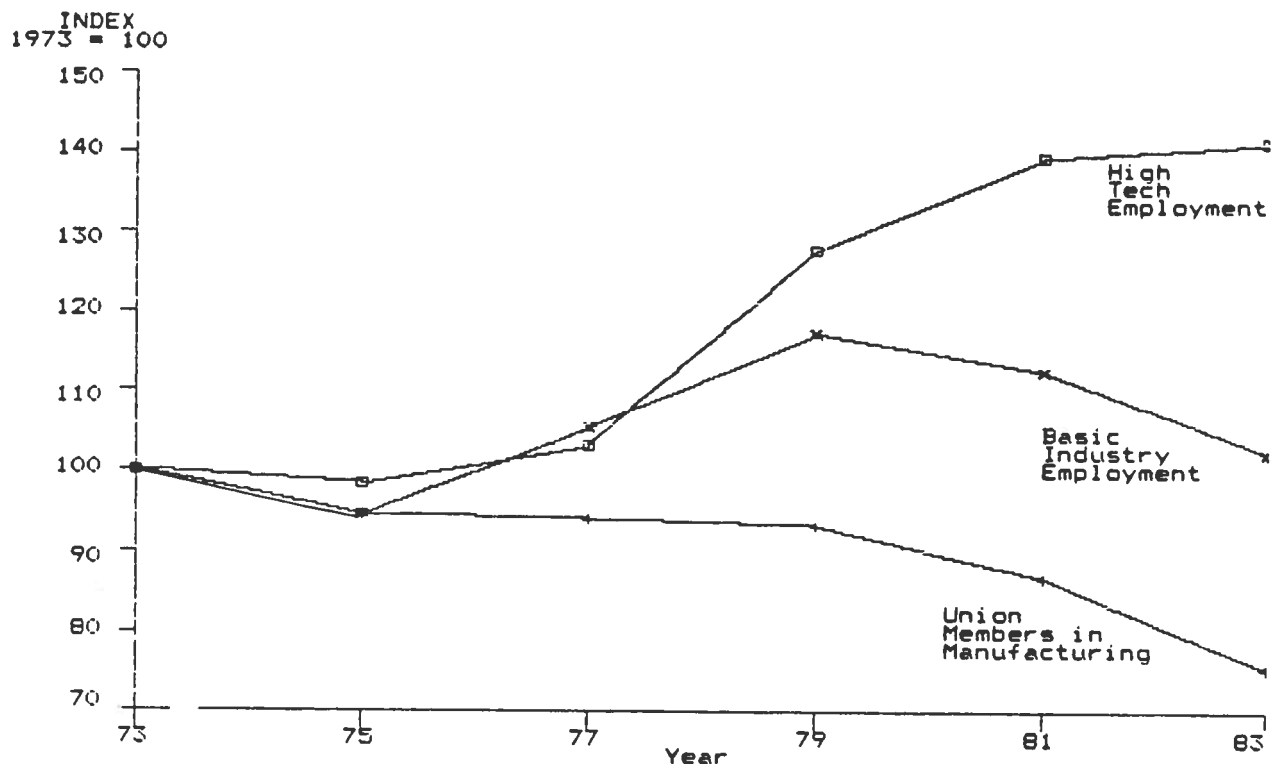
Available data on ownership of closed plants is not definitive, but there are indications that large corporations have played a crucial role in the closure wave within the state (Shapira, 1983). The EDD statistics suggest that large establishments are responsible for the bulk of the recorded job losses (although the method of collection probably biases the figures to exclude many smaller plant closures). According to the EDD figures, firms greater than 250 employees in size accounted for 8 percent of the recorded closures, but 52 percent of the jobs lost between January 1980 and June 1984.

One particularly important impact of the wave of closures and job losses in recent years in the state has been the impact on union membership.* As Figure 9 shows, union membership in manufacturing dropped from 597,400 in 1973 to 452,200 in 1983, with by far the steepest decline occurring after 1979. California, traditionally a well-organized state, has thus seen the proportion of union members drop from 36.1 percent of the manufacturing workforce to 23.4 percent between 1973 and 1983. Importantly, not all of the decline in manufacturing unionism can be blamed on recent job losses and closures. California's manufacturing unions were losing membership during the early and mid-1970s when employment in both high-technology and basic manufacturing was expanding. This period undoubtedly represents a major opportunity lost for California's unions, since they failed to make any headway into the expanding high-technology sector at a time when resources were more readily available. The unions still face the challenge of organizing workers in high technology (where many firms are highly antagonistic towards unionization), yet they now have a reduced membership base in basic manufacturing. For workers themselves, the decline of union jobs represents the loss of many good, well-paying blue-collar positions in the state.

Figure 10 examines the decline of unionism in the state in more detail. It shows that unions lost membership in manufacturing in California between 1979 and 1983 at a rate more than three times greater than the rate of job loss in the manufacturing sector in California as a whole. Heaviest membership losses were in the lumber

*The section on the impact of closures on union membership has benefitted from discussion with Anne Lawrence, who is undertaking a comprehensive analysis of this question.

FIGURE 9: RELATIVE CHANGES IN HIGH TECHNOLOGY, BASIC INDUSTRIES, AND UNION MEMBERS IN MANUFACTURING, CALIFORNIA 1973-1983



Statistics for State of California. Source: EDD Annual Planning Report, Calif, 1984-5; Union Labor, DLIR; author's calculations.

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ACTUAL AND RELATIVE CHANGES IN HIGH TECHNOLOGY EMPLOYMENT,
BASIC INDUSTRY EMPLOYMENT AND UNION MEMBERSHIP IN MANUFACTURING
CALIFORNIA: 1973-1983

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	High Technology Employment		Basic Industry Employment		Union Members in Manufacturing	
	(Thousands)		(Thousands)		(Thousands)	
1973	597.6	100.0	1056.2	100.0	597.4	100.0
1975	589.3	98.6	998.4	94.5	565.3	94.6
1977	616.0	103.1	1112.6	105.3	562.5	94.2
1979	763.8	127.8	1239.1	117.3	556.4	93.1
1981	834.5	139.6	1188.6	112.5	518.9	86.9
1983	846.2	141.6	1081.5	102.4	452.2	75.7

Source: EDD Annual Planning Report, California, 1984-85;
California Department of Labor and Industrial Relations,
Union Labor, 1973-83.

FIGURE 10: CHANGE IN MANUFACTURING EMPLOYMENT AND UNION MEMBERSHIP IN CALIFORNIA, 1979-1983

	Manufacturing Employment		Union Members in Manufacturing		Principal Unions
	(Thousands)	percent	(Thousands)	percent	
	1979	1983	1979	1983	79-83
Food & Kindred	186.4	174.9	-6.6	153.7	131.3 -14.6
Textiles & apparel	126.6	117.3	-7.9	16.0	11.9 -25.6
Lumber & furniture	125.6	101.2	-24.1	39.5	28.7 -27.3
Paper & allied prod	39.1	36.5	-2.1	21.1	19.1 -9.5
Printing & publishing	118.9	126.5	6.0	27.3	23.2 -15.1
Petroleum, chemicals, rubber	189.9	154.9	-22.6	25.5	19.9 -22.0
Stone, clay, glass	60.0	49.3	-10.7	20.4	16.2 -20.6
Metals, elec & nonelec mach	762.5	755.9	-6.6	132.5	107.3 -19.0
Transportation equip	277.4	258.1	-19.3	112.6	88.9 -21.1
Other manufac industries	146.6	152.8	4.1	7.8	5.7 -26.9
Total (All Manufacturing)	2033.0	1927.4	-5.5	556.4	452.2 -18.7

Source: EDD Annual Planning Information, 1984-1985, op.cit: California Department of Labor and Industrial Relations, Union Labor.

industry, textiles and apparel, rubber, transportation, and metal working.

ANALYSIS AND IMPLICATIONS

The consequences of the industrial developments in California documented in this paper are significant. The state's manufacturing sector is being reorganized quite dramatically; parts of the state (including rural lumber areas and urban industrial zones, especially in some sections of Los Angeles and the Bay Area) are being effectively deindustrialized, with considerable community cost; and the job market in manufacturing is becoming increasingly polarized, losing middle-range blue-collar jobs, while gaining high-wage, technical jobs and low-wage production jobs. Some areas of the state are experiencing unprecedentedly rapid economic development, while others (including that once pre-eminent 20-mile industrial corridor in Los Angeles) are crumbling with industrial decay and blight.

It is to be noted that the incidence of plant closure and job loss in California has certainly been aggravated by the sharp downturn and recession of the early 1980s. The need to rationalize output in the face of falling demand has been a significant factor in many closings in the state. As the economic cycle turns upwards, it is likely that many workers will be recalled, while newer industries will resume their growth pattern. In 1984, this is happening, and the *overall* level of employment in California manufacturing is beginning to recover.

At the same time, it is also apparent that broader structural changes are occurring in California industrial sectors and to the occupational pattern of manufacturing jobs in the state. That such structural changes coincide with a recessionary downturn is not surprising, since cyclical downturns often provide the impetus and the opportunity for fundamental change.

The impact of restructuring and job loss on union organization in California has been substantial. Traditional centers of industrial unionism (auto, steel, other types of metal working, and forest products) have seen sharp declines in jobs and union membership. To date, manufacturing unions have not been able to gain any significant foothold in California's high-technology sector (with a few longstanding exceptions, such as aerospace).

Geographical reorganization is an important element in understanding the structural change experienced within the state's manufacturing sector. California has been affected by broad developments in the spatial location of production and the regional and international division of labor. In many cases (e.g., Atari, Firestone,

Tandon, Ford, General Electric, etc) closures and job losses in California have been prompted by the search for cheaper, nonorganized labor. This is effectively a "decentralization" of production from California to such lower-wage areas as Taiwan, Hong Kong, Puerto Rico, Mexico, and the U.S. South and Nevada (a right-to-work state).

While "decentralization" is very prevalent in high-technology job shifts, somewhat different trends are evident in other industries, particularly the metal working ones. Companies in this sector have relocated work to gain cheaper labor, but more recently some plant closures and job losses in California have also been caused by corporate strategy to "recentralize" work to heartland operations, using new production methods (such as flexible manufacturing, modular assembly, increased robotization, and just-in-time delivery. Examples here include shifts of work by GM and Caterpillar back to unionized plants in the Midwest.

California has also been affected, as elsewhere, by corporate strategies to maximize profits and control regardless of local and community costs. Again, there have been several cases where profitable plants have been closed in the state as a consequence of high profit hurdles, or changed corporate master plans (e.g., Colgate-Palmolive, Hussmans, General Electric).

The key basic job sectors that have seen losses of employment were, arguably, important in providing the base for the culture, living patterns, and institutions in the California of the 1950s and 1960s. Some of these living patterns or institutions, such as the working-class suburban tract home or the dominance of patriarchal attitudes, certainly had adverse aspects. At the same time, this working-living arrangement provided reasonable material and job security, the ability to rear and educate children, and a sense of community. It is not clear whether the lifestyle and material conditions associated with the new high technology industries will provide a better context for the development of workers and communities. But it is certain that the new industries are quite different, posing potentially severe issues of adjustment.

In the very near future, it is likely that the application of new technology will add a new twist to industrial restructuring and change in California manufacturing. In basic industries, further jobs are likely to be lost, with those remaining subject to either deskilling or reskilling. And, in high-technology, especially in electronics and computers, the application of new technology may well significantly reduce the potential for job expansion. If the the new Apple MacIntosh plant in Fremont (which employs only about 85 people in a highly automated facility) is an example, high-technology firms will be able to produce increased volume of output without a corresponding increase in the number of workers.

Coupled with the introduction of new technology in the state is the introduction of new relationships of ownership and labor. Again, reflecting California's particular history and location, the state is the site for several key joint ventures (including GM-Toyota at Fremont; Kawasaki Steel and California Steel in Fontana; and Nippon Kokan and Martin Marietta in Torrance). These joint-ventures seek to bring in new production and working arrangements, replacing the traditional ways of organization and production. For instance, at the reopened GM-Toyota plant in Fremont, a separate contract has been negotiated with the United Automobile Workers allowing major changes in work rules, including the introduction of team work and the use of only three major job classifications (compared with over seventy before). The plant will assemble about the same number of automobiles as previously (about 200,000 a year), but with about half the production workforce (Shapira and Lawrence, 1983; Cheevers, 1984).

Finally, perhaps the overriding implication and policy issue is the growing tension between community and capital which is increasingly evident in California, again as elsewhere. The traditional pattern of work (at least in the post-World War II period) was one of long-term commitment of workers to companies, especially in unionized basic industries. There were of course many instances of cyclical and seasonal layoffs, but structures were established, such as unemployment insurance (UI) or supplementary unemployment benefit (SUB), to deal with these. Eventually, the seniority system brought the worker back onto the job. The emerging pattern, however, seems to be one of segmentation and polarization, with growing instability for many workers. Yet the support systems and institutions established in the earlier era cannot adequately deal with this development (e.g., pensions that take ten years on the job to vest, health insurance tied to the job, short-term unemployment benefits systems, and inadequate retraining programs). Among the those institutions arguably still immersed in an earlier era is much of the trade union movement, which is still seeking ways to respond to and organize new workers in new environments.

The challenge of this disjuncture between capital and community undoubtedly requires a new policy approach. Rather than uprooting or subordinating workers and communities primarily to the requirements of capital, there is a need to implement an alternative strategy which will increase social, community, and worker control over capital investment and disinvestment decisions. This strategy should seek to curb nonproductive corporate strategies, provide good jobs and raise standards of living equally shared, increase worker and community involvement in decisions affecting them, and, in general, take a longer-term view about the kind of society we wish to

foster.

The specific measures which should be incorporated in such an alternative strategy are numerous, and impossible to adequately discuss here (see: Blakely and Shapira, 1984). But the strategy should include the elimination of tax loopholes that provide incentives to close plants, move production overseas, and participate in wasteful conglomerate acquisitions. In addition, as part of a new thrust to give workers and communities the capacity to know about, participate in, and bargain over investment and disinvestment decisions that affect them, legislation requiring advance notice of plant closures and the introduction of new technology needs to be introduced. Deliberate public strategies to reinvest in and rebuild key basic industries, such as steel, should also be considered (see, for example, Senate Office of Research, 1983).

Public policies might also be introduced to generate new, more socially useful directions for the high technology industry -- for example, to develop innovative advanced technology products which will directly improve working and living conditions and create employment, as opposed to developing new weapons systems or causing job displacement in industry (see: Gordon and McFadden, 1984; Shaiken, 1985). Finally, workers need immediate relief from the process of restructuring, including the protection of health benefits and pensions and improved social services and retraining programs, so that individuals and their families are not crippled through job loss.

The task of developing and implementing the kinds of policies just described is certainly going to be difficult. But this is a challenge which must be faced and, ultimately, won. For unless there is a movement to mold the institution of capital to the needs of workers and communities, capital will continue, as it has done in California, to reorganize workers and communities in its own interests, regardless of the cost or human consequence.

NOTES

[1] This research includes Buss and Redburn (1983) on Youngstown; Folbre, et al. (1984) on Maine; Jusenius and Ledebur (1974) on Ohio; Harrison (1981) on New England; Hochner and Zibman (1981) on Philadelphia; Lauria and Fisher (1983) on Iowa; Massachusetts Mature Industries Commission (1984) on Massachusetts; Rhode Island Strategic Development Commission (1983) on Rhode Island; Sheets, et al. (1983) on Chicago; and Yago, et al. (1984) on New York.

[2] Letter from Karl Marx to Fredrich Sorge, November 1880, in Marx, Karl and Fredereich Engels, *Letters to Americans, 1848-1895: A Selection* (New York: International Publishers, 1953, p. 126). I am indebted to Edward Soja, Rebecca Morales, and Goetz Wolff (1983) for drawing my attention to this quote.

[3] From a historical vantage point, perhaps the best single reference on California's dynamism and leading role remains Carey McWilliams, *California: the Great Exception* (first published in 1949; reprinted Santa Barbara: Peregrine Smith, 1976).

[4] The role of military production in the development of the California economy cannot be underestimated. Markusen et al. (1984) argue that the California economy has been "heavily indebted" to defense production for stimulating its growth since World War I. Currently, California receives a disproportionate share of military production contracts with its aerospace, electronics, communications, and computing industries.

[5] Figures 3 and 4 are based on an analysis of California employment statistics at the three-digit standard industrial classification (SIC) levels. A two-step process is employed. First, high-technology industries are defined as those manufacturing industries with a proportion of technology-oriented employment greater than or equal to the average of all manufacturing industries and a ratio of research and development expenditures to sales close to or above the average for all industries (a definition developed in Riche, et al, 1983). Basic industries then comprise the residual. Second, a distinction within basic industries between capital-intensive, labor-intensive, and resource-based is made following Lawrence's (1984) schema, with a few adaptations. It is recognized that this approach is not perfect -- some industries could fit into two or even three categories -- and more precise definitional work needs to be done. But, rough as it is, this approach does illustrate the trends affecting the main groups of industries within the Californian manufacturing base (See Appendix 1 for detailed breakdown).

[6] For California studies on the adverse consequences of displacement and the difficulty in maintaining wage levels in new jobs, see: California Employment Development Department, 1983; and Los Angeles Business-Labor Council, 1984.

[7] Some points to bear in mind about the EDD Plant Closure series are:

- (i) They are not comprehensive: they are collected by rather ad hoc methods, since there is no mandatory requirement for firms to report closures or layoffs to any state or federal agencies; consequently, the statistics reflect the level of resources put into collection (like crime statistics) and probably miss large numbers of small-to-medium sized closures.
- (ii) There is little detail available: firm names are not identified and there is no direct correlation with other factors, such as unionization, wages, ownership, etc.
- (iii) Although the recorded job loss is taken back to peak employment within the last 24 months, partial closures are not reported (e.g. companies like Kaiser Steel or Atari which permanently lay off most of their workers, but still continue on a skeleton basis).
- (iv) The actual underestimation is hard to know. But, if the ratio of closures reported by Harris (1983) is accurate, California may have lost about 150,000 jobs a year in manufacturing between 1978-82. EDD reports a loss running at only about 30,000 jobs a year.

[8] Plant-level statistics derived from the Plant Closures Data Base, Plant Closures Research Group, Department of City and Regional Planning, University of California, Berkeley.

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APPENDIX 1: CLASSIFICATION SCHEME USED IN ANALYSIS

Figures for California derived from EDD Annual Planning Information
(Employment in Thousands)

	1972	1979	1983	1972-79	1979-83
<i>HIGH TECHNOLOGY SECTORS</i>					
281 Industrial Inorganic Chem	5.1	7.1	7.1	2.0	0.0
282 Plastics Material & Syn	3.1	4.2	3.3	1.1	-0.9
283 Drugs	10.5	15.7	17.8	5.2	2.1
284 Soap, Cleaners, Toilet	11.4	13.4	11.9	2.0	-1.5
285 Paint & Allied Products	7.7	8.3	6.7	0.6	-1.6
287 Agricultural Chemicals	5.5	5.2	4.3	-0.3	-0.9
28X Other Chemicals & Allied	9.1	10.4	10.9	1.3	0.5
291 Petroleum Refining	22.5	24.2	27.5	1.7	3.3
355 Special Industry Mach	8.9	12.2	12.7	3.3	0.5
357 Office & Computing Mach	52.1	92.2	107.4	40.1	15.2
361 Electrical Distr Equip	7.6	9.2	7.6	1.6	-1.6
362 Industrial Elec Apparatus	9.0	14.2	11.9	5.2	-2.3
365 Radio & TV Receiving Eq	15.0	18.0	13.6	3.0	-4.4
366 Communication Equip	90.6	123.5	153.0	32.9	29.5
367 Electronic Comp & Access	52.0	114.6	138.3	62.6	23.7
369 Misc Elec Equip & Sup	4.9	8.0	8.8	3.1	0.8
372 Aircraft & Parts	135.4	140.4	134.4	5.0	-6.0
376 Guided Miss. & Space Vech	50.7	50.9	65.6	0.2	14.7
382 Measuring & Control Instr	25.1	41.9	47.8	16.8	5.9
38X Other Instrum & Related	27.1	50.2	55.6	23.1	5.4
<i>CAPITAL INTENSIVE SECTORS</i>					
265 Paperboard Containers	14.9	17.4	15.0	2.5	-2.4
271 Newspaper Printing & Pub	34.8	41.6	43.0	6.8	1.4
275 Commercial Printing	32.8	47.4	49.4	14.6	2.0
27X Other Printing & Publ	23.6	29.9	34.2	6.3	4.3
301 Tires & Inner Tubes	7.7	4.8	1.3	-2.9	-3.5
321 Glass & Glass Products	14.2	18.0	16.3	3.8	-1.7
331 Blast Furnace & Steel	20.9	21.2	9.9	0.3	-11.3
332 Iron & Steel Foundries	7.1	9.1	6.7	2.0	-2.4
335 Nonferrous Rolling & Draw	14.8	15.5	13.1	0.7	-2.4
336 Nonferrous Foundries	7.1	10.4	9.6	3.3	-0.8
33X Other Primary Metals	3.2	4.4	4.0	1.2	-0.4
341 Cans & Shipping Containers	12.1	11.0	9.1	-1.1	-1.9
342 Cutlery, Handtool, Hdwr	15.8	18.6	14.1	2.8	-4.5
344 Structural Metal Products	39.7	52.4	44.0	12.7	-8.4
345 Screw Machine Products	8.7	13.6	11.1	4.9	-2.5
346 Metal Forging & Stamp	11.0	14.6	14.2	3.6	-0.4
347 Metal Services, NEC	12.8	20.2	18.4	7.4	-1.8
34X Other Fabricated Metal	16.3	19.9	17.6	3.6	-2.3
352 Farm & Garden Machinery	2.9	5.4	4.8	2.5	-0.6
353 Const. & Rel. Machinery	13.8	21.4	14.3	7.6	-7.1
354 Metalworking Machinery	14.8	20.6	16.2	5.8	-4.4
356 General Industry Machinery	15.3	20.6	17.8	5.3	-2.8
358 Refrigeration & Serv Mach	5.0	7.6	8.4	2.6	0.8
35X Other Machinery Exc Elec	27.6	46.8	38.4	19.2	-8.4
363 Household Appliances	7.2	5.7	4.6	-1.5	-1.1

(continued)

APPENDIX 1: CLASSIFICATION SCHEME USED IN ANALYSIS

(continued)

		1972	1979	1983	1972-79	1979-83
364	Lighting & Wiring Equip	16.2	23.5	19.5	7.3	-4.0
371	Motor Vehicles & Equip	38.2	49.6	29.3	11.4	-20.3
373	Ship & Boat Bldg & Rep	14.8	23.1	18.4	8.3	-4.7
37X	Other Transport Equip	11.7	13.5	10.4	1.8	-3.1
LABOR INTENSIVE SECTORS						
225	Knitting Mills	3.5	2.9	2.7	-6	-2
227	Floor Covering Mills	4.9	6.3	3.6	1.4	-2.7
22X	Other Textile Mill Prods	4.8	6.8	6.5	2.0	-3
232	Men's and Boys Apparel	12.0	14.5	12.0	2.5	-2.5
233	Women's & Misses' Apparel	44.1	66.7	64.9	22.6	-1.8
234	Women's & Childs Undgmts	4.2	4.2	4.0	0.0	-2
236	Children's Outwear	1.7	1.4	2.0	-3	0.6
23X	Other Apparel & Textile	19.7	23.8	21.6	4.1	-2.2
251	Household Furniture	28.4	37.0	30.8	8.6	-6.2
254	Partitions and Fixtures	4.9	6.8	6.6	1.9	-2
25X	Other Furniture & Fix	7.0	13.1	14.0	6.1	0.9
302	Rubber Foot & Fab Rub	7.6	10.6	9.8	3.0	-8
307	Misc Plastics Products	32.0	51.5	50.1	19.5	-1.4
30X	Other Rubber & Plastics	1.1	1.1	0.8	0.0	-3
310	Leather & Leather Prods	7.1	12.3	9.3	5.2	-3.0
343	Plumbing & Heating Fab Pr	6.3	8.2	6.7	1.9	-1.5
394	Toys & Sporting Goods	13.5	15.8	18.8	2.3	3.0
39X	Other Misc Manufacturing	19.6	26.3	21.4	6.7	-4.9
RESOURCE INTENSIVE SECTORS						
201	Meat Products	19.4	20.1	16.3	0.7	-3.8
202	Dairy Products	15.0	13.5	13.8	-1.5	0.3
203	Prsrvd Fruits & Vegtbls	51.2	58.3	52.9	7.1	-5.4
204	Grain Mill Products	7.8	8.5	8.3	0.7	-2
205	Bakery Products	19.2	18.8	19.0	-4	0.2
208	Beverages	18.5	23.8	25.5	5.3	1.7
209	Canned, Cured, Froz Fish	7.5	10.1	9.4	2.6	-7
20X	Other Food	29.3	33.3	29.6	4.0	-3.7
241	Logging Camp & Saw Mill	25.0	27.2	19.2	2.2	-8.0
243	Millwork & Plywood	14.7	18.0	14.2	3.3	-3.8
244	Wooden Containers	5.0	4.7	3.7	-3	-1.0
24X	Other Lumber & Wood Prod	19.7	18.7	12.7	-1.0	-6.0
264	Misc Converted Paper Prod	12.5	14.8	15.2	2.3	0.4
26X	Other Pulp, Paper, PBoard	8.7	7.0	6.4	-1.7	-6
29X	Other Petroleum & Coal Pr	3.1	3.3	3.5	0.2	0.2
324	Cement, Hydraulic	3.7	3.6	3.3	-1	-3
325	Structural Clay Products	4.3	3.8	2.5	-5	-1.3
326	Pottery & Related	5.3	6.4	4.5	1.1	-1.9
327	Concrete & Plaster Prods	16.1	17.3	14.4	1.2	-2.9
32X	Other Stone, Clay & Glass	9.7	10.8	8.4	1.1	-2.4

APPENDIX 2: U.S. AND CALIFORNIA CAR PRODUCTION 1968-1983

	Car Production U.S.	Calif Calif	Calif Share	State Rank	Calif Sales	Ratio Calif Production to Sales
1968	8848507	699947	7.91%	3	897211	.78
1969	8224267	647327	7.87%	3	918458	.70
1970	6550077	556018	8.49%	3	868402	.64
1971	8557878	559442	6.54%	5	937987	.60
1972	8827694	741137	8.40%	3	995824	.74
1973	9667118	821118	8.49%	4	1104689	.74
1974	7309763	549740	7.52%	4	817583	.67
1975	6740584	406250	6.03%	6	742697	.55
1976	8537759	653665	7.66%	4	877508	.74
1977	9293674	757497	8.15%	3	1022498	.74
1978	9153299	748399	8.18%	4	1111539	.67
1979	8418369	707186	8.40%	5	1045072	.68
1980	6416885	261242	4.07%	12	902453	.29
1981	5755813	260238	4.52%	7	845239	.31
1982	4973870	297920	5.99%	6	806847	.37
1983	7112352	114101	1.60%	12	922285	.12

Source: Automotive News Market Data Book 1968-84

MAJOR AUTO-RELATED PLANTS CLOSINGS IN CALIFORNIA, 1970-1983

Company	Plant/City	Year	Jobs Lost	Union/Local
Chrysler	Los Angeles	1970		UAW
Internat Harvester	San Leandro (Trucks)	1975	2500	UAW 76
Ford	Pico Rivera	1980	2300	UAW 923
General Motors	Oakland (Parts)	1980	400	UAW 76
Mack Western	Hayward (Trucks)	1981	1400	UAW 76
General Motors	South Gate	1982	4350	UAW 216
General Motors	Fremont (Trucks)	1981	1660	UAW 1364
General Motors	Fremont (Cars)	1982*	4200	UAW 1364
Ford	Milpitas	1983	4900	UAW 560
Chrysler	San Leandro (Parts)	1983	125	UAW 76
Total			21835	

Summary: Major auto assembly plants in California in 1970 = 6

Major auto assembly plants in California in 1984 = 1**

Projected number of major plants in 1985 = 2

* Fremont will reopen in 1985 under NUMMI (GM-Toyota Joint Venture). Projected employment is 2500.

** General Motors, Van Nuys Plant has remained open.

Source: Plant Closures Database, Department of City and Regional Planning, University of California, Berkeley

**APPENDIX 3: CLOSURES AND JOB LOSSES IN BASIC STEEL
CALIFORNIA, 1972-84***

Company	Plant/City	Year	Jobs	Union/Local
U.S. Steel	Pittsburg			USW 1440
	Rod Mill	1979		
	Pipe Finishing	1979		
	Rope Mill	1984	150	
	Torrance Works	1979	800	USW 1414
	Los Angeles			
	American Bridge	1979	1000	USW 2058
	Antioch			
	American Bridge	1979	400	
	Alameda			
	Container Plant	1977	100	
	So San Francisco			
	Fabrication	1983	220	USW
Armco	La Habra Plant	1977		
Bethlehem	Torrance Fabr Works	1976	1000	
	Pinole Point Fab	1975		
	Los Angeles/Vernon			
	Industrial Fastner	1981)		
	Wire Mill	1978)	1800	USW
	Rolling Mill	1983)		
	So San Francisco			
	Fabrication	1977	300	USW 1069
Jones & Laughlin	Los Angeles			
	Stainless Steel	1974		
Kaiser Steel	& Strip Plant			
	Fontana *			
	CR Sheet Mill	1979)		
	Fabrication	1981)		
	Rolling Mills	1982)	6800	USW 2869
	Coke Ovens	1984)		
	Pipe Production	1984)		
	Steel Production	1984)		
Pacific States Stl	Los Angeles/Monteb			
	Auto Stamping	1982	140	
	Union City			
Southwest Steel	Steelmaking & Bar	1979	1500	
	Los Angeles			
	Rolling Mills	1977	900	

Summary: Jobs in California Basic Steel in 1972 = 28,000
Jobs in California Basic Steel in 1983 = 16,600

* Kaiser Fontana has been purchased by a consortium including Kawasaki Steel and may reopen -- expected employment is 400

Source: Plant Closures Database, Department of City and Regional Planning, University of California, Berkeley