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# The Manufacturing Sector and Job Training in California

*Elias S. Lopez, Ph.D., and Alicia Bugarin*

*Prepared at the Request of Assemblymember Bob Pacheco*

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## *Internet Access*

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# CONTENTS

**INTRODUCTION** ..... **1**

**CALIFORNIA'S MANUFACTURING INDUSTRY** ..... **3**

The Manufacturing Sector in Perspective ..... 3
Gains and Losses by Industry Type ..... 6
Gains and Losses by Occupation ..... 8
Gains and Losses by Region ..... 11
Gains and Losses by Age of Worker ..... 13
Gains and Losses by Gender of Worker ..... 15
Gains and Losses by Ethnicity of Worker ..... 17
Gains and Losses by Educational Attainment of Worker ..... 19

**WHO RECEIVES FORMAL TRAINING?** ..... **21**

**TRAINING PROGRAMS FOR THE MANUFACTURING SECTOR** ..... **25**

California's Employment Training Panel ..... 25
The Workforce Investment Act Funds Program ..... 28
California Community Colleges ..... 30

**CONCLUSION** ..... **33**

**OPTIONS** ..... **35**

**ENDNOTES** ..... **37**

# INTRODUCTION

The manufacturing sector is the second largest industry in California (after retail), employing over two million persons (including the self employed) and paying more than $86 billion in wages and salaries.[*] There is concern, however, that California's manufacturing sector is on the decline and that companies are moving elsewhere.

At the request of Assemblymember Bob Pacheco, this report examines the changes occurring in California's manufacturing sector. In particular, it attempts to provide answers to the following questions:

- Is the state's manufacturing sector on the decline?
- If so, are certain types of manufacturing more affected?
- Is the decline affecting some workers more than others?
- For those workers at risk, could the state provide more training opportunities as a means to increase productivity?
- Which state training programs target the manufacturing sector?

This report has three sections. The first explores the scope and size of declining manufacturing capacity in the state; the second presents data on the workers receiving formal training; and the third examines state training programs that offer formal training to workers in the manufacturing sector.

There are numerous ways to address the question of whether the state's manufacturing sector is losing jobs. The more typical approach is to look at the recent trends, month-to-month, or year-to-year. These approaches are preferred for short-term analyses or when trying to predict employment in the next business cycle. This, however, is not the recommended approach when trying to see if the job losses are part of a long-term trend. It is expected that the manufacturing sector will lose jobs during bad economic times, but if the losses continue during good times, then this is indicative of a worrisome long-term trend. To take a long-term perspective, we examine the employment levels of California's manufacturing sector from 1980 to 2000. In the 1980s, California's economy[†] expanded, creating 3.4 million new jobs. In the 1990s, the state's economy grew slowly, creating only 0.6 million jobs.

To determine the impact on workers, we analyze changes in employment, wages, and salaries since 1980. This analysis examines workers by types of manufacturers, regions in California, and by occupation, age, gender, ethnicity, and educational attainment.

[*] These numbers are for the year 2000.
[†] California's economy refers to all industries in California, inclusive of manufacturing.

**About the Data Sources:**

In this report we analyze the 1980, 1990, and 2000 Census public use files (the 5% sample)[*] to find out if California's manufacturing employment is in decline. These files are ideal for this analysis because they contain worker's occupational activity, age, gender, ethnicity, and wages. The dataset also includes self-employed workers. There are no other datasets that can compare with these files in terms of sample size. For California's manufacturing sector, the sample sizes are 107,595 persons for 1980, 114,985 for 1990, and 99,446 for 2000.[†]

We use a different data source, the 1996 Survey of Income and Program Participation (SIPP), to determine which workers have received formal training in California. This data is collected at the federal level, from which we have isolated and analyzed the sample for California. Despite the smaller sample size, the SIPP is used because of the scarcity of job training data in California.

Throughout this report, Whites refer to non-Hispanic White, Asian to non-Hispanic Asian, African American to non-Hispanic African American, and Native American to non-Hispanic Native American. Latinos could be of any race.

[*] The authors would like to acknowledge the IPUMS project for making the 5% PUMS readily available to researchers and for their user-friendly interface. Credit for access to the data go to: Steven Ruggles and Matthew Sobek et al, *Integrated Public Use Microdata Series: Version 3.0* Minneapolis: Historical Census Projects, University of Minnesota, 2003.

[†] For comparability over time, the 1950 industrial classification is used, a classification very similar to the 1977 Standard Industrial Classification (SIC) when it comes to manufacturing.

# CALIFORNIA'S MANUFACTURING INDUSTRY

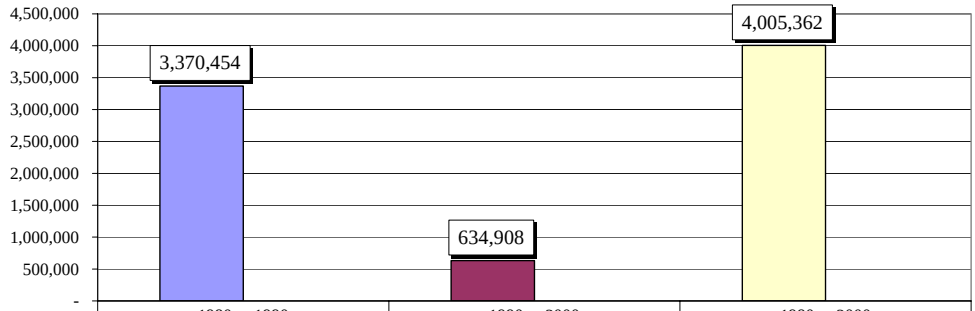
This section provides an overview of employment trends in California's manufacturing sector, and charts the trends since 1980. It examines employment gains and losses by types of manufacturing, by occupation, by region, and by the age, gender, ethnicity, and educational attainment of the worker.

## THE MANUFACTURING SECTOR IN PERSPECTIVE

The changes occurring in the state's manufacturing sector should be understood within the larger context of total employment in California. As it turns out, much of the job losses in the state's manufacturing sector are a result of the severe economic slowdown in the 1990s. Figure 1 shows that in the 1980s, California industries added over three million jobs, and employment rose at a rate of 2.7 percent a year. In contrast, the state gained only 0.6 million jobs between 1990 and 2000, a very modest growth rate of 0.4 percent annually.

**Figure 1**

**California, 1980 to 2000**
**Change in the Number of Persons Employed by Decade**
**(all industries, including the self-employed)**




| | 1980 to 1990 | 1990 to 2000 | 1980 to 2000 |
|---|---|---|---|
| Change in Employment | 3,370,454 | 634,908 | 4,005,362 |
| Annual Rate of Growth | 2.7% | 0.4% | 1.6% |

Source: California Research Bureau, California State Library, using the IPUMS for 1980, 1990, and 2000 (5% Sample).
Note: In 1980 there were 10,867,809 persons employed; in 1990 the corresponding number was 14,238,263; and in 2000 the respective number was 14,873,171.

In addition, it is important to keep the manufacturing industry in perspective relative to other industries. Even though California's manufacturing industry lost 126,190 jobs (Figure 3) over a 20-year span, it is still the second largest employer in California (Figure 2), employing over two million persons. This is second only to the retail industry.

**Figure 2**

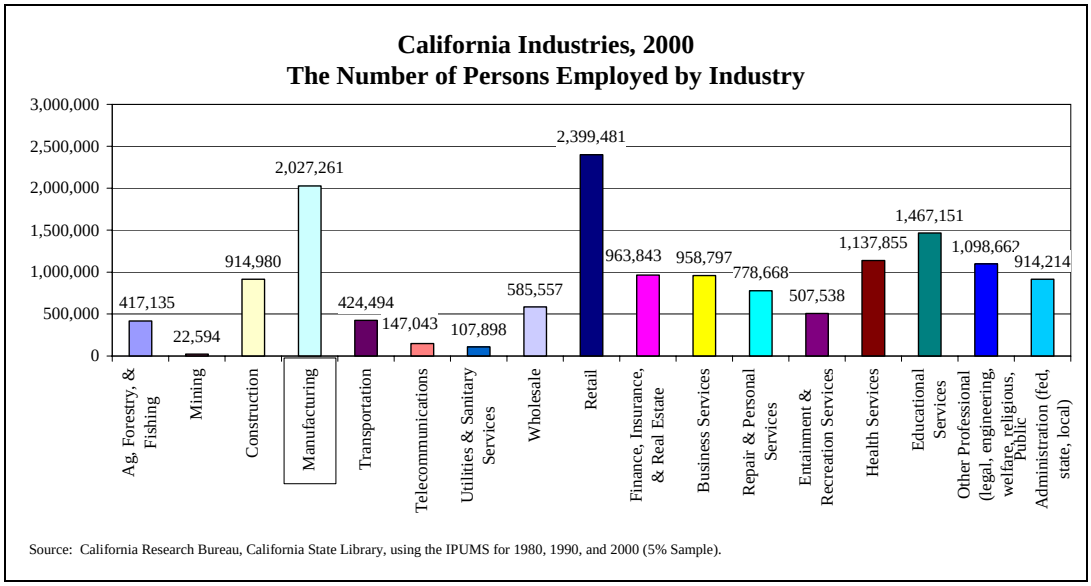
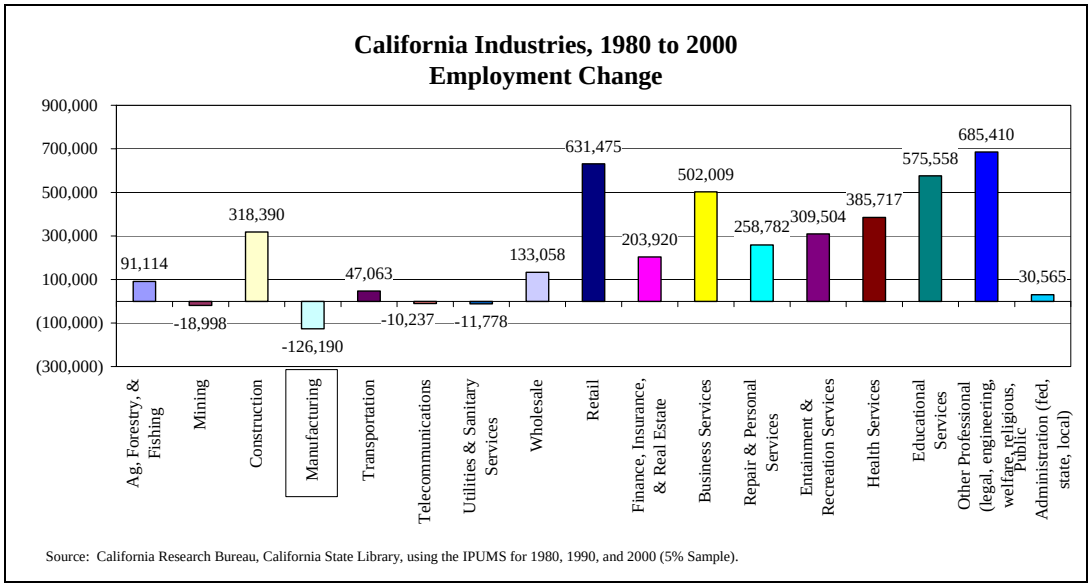



**Figure 3**



Moreover, the manufacturing industry pays among the highest wages and salaries, on the average. In 2000, its average wage was fifth highest among the 17 industry groups shown in Figure 4. In terms of the change in average wages and salary that took place between 1980 and 2000, the state's manufacturing industry ranks seventh highest (Figure 5).*

**Figure 4**

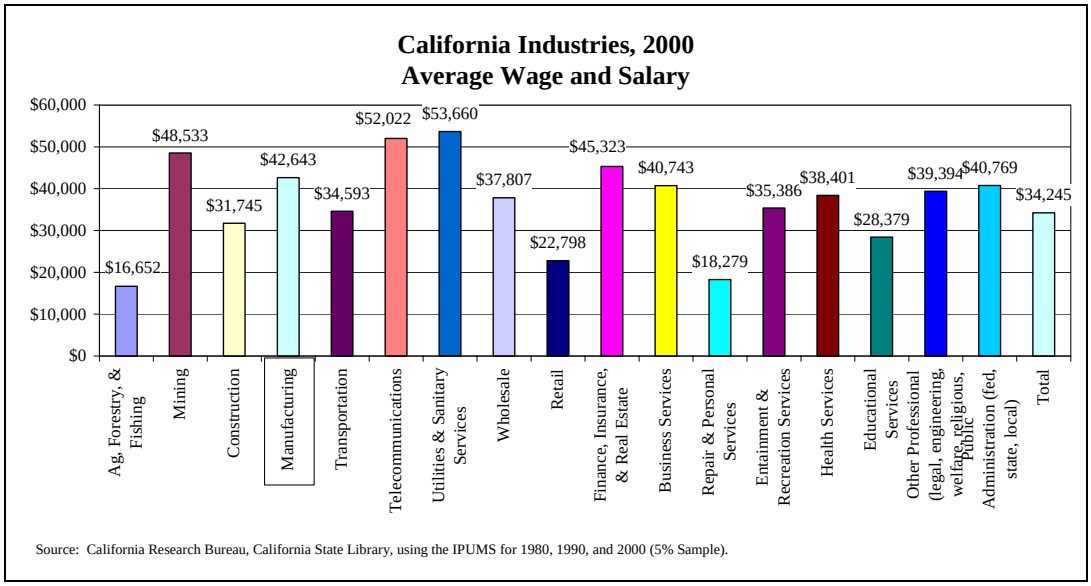
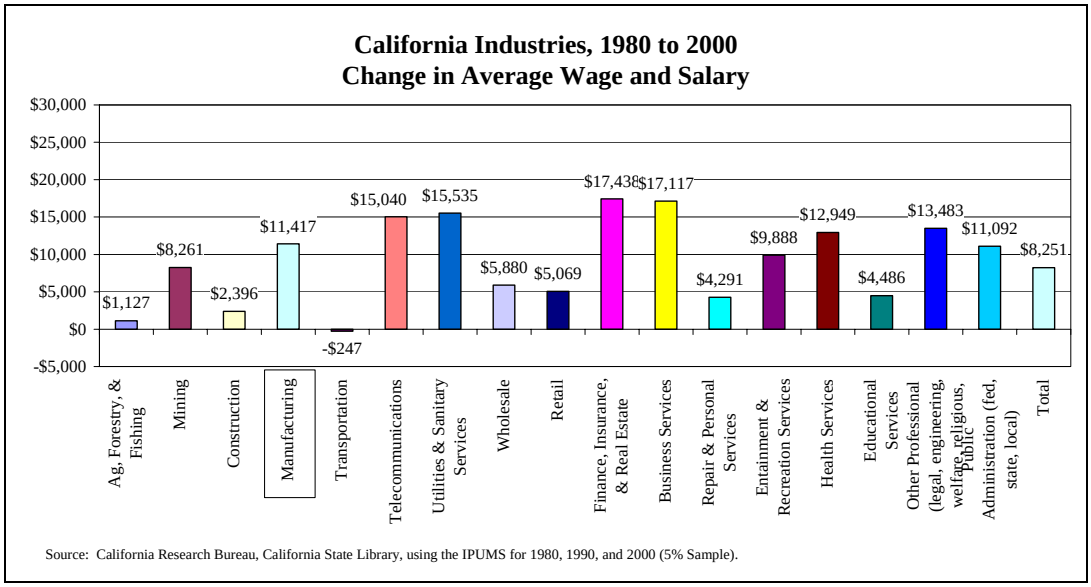



**Figure 5**




* Figure 5 takes the average wage in 1980 and subtracts it from the 2000 average wage. The 1980 wage and salary figures were converted to the equivalent dollar value in the year 2000 using the Consumer Price Index for all consumers.

## GAINS AND LOSSES BY INDUSTRY TYPE

California's manufacturing sector is diverse. Figure 6 summarizes the different types of goods that are manufactured in California. Aside from the Petroleum and allied products industries, each industry sector employs over 100,000 persons.

Not all the manufacturing industries are shrinking (Figure 7). The chemical, professional and photographic equipment, printing and allied products, and textile and apparel sectors all grew between 1980 and 2000. The largest loss in jobs has been in the manufacturing of transportation equipment, a loss of 168,971 jobs within a 20-year span (78 percent of the loss was among manufacturers of aircraft, related to defense downsizing).

**Figure 6**

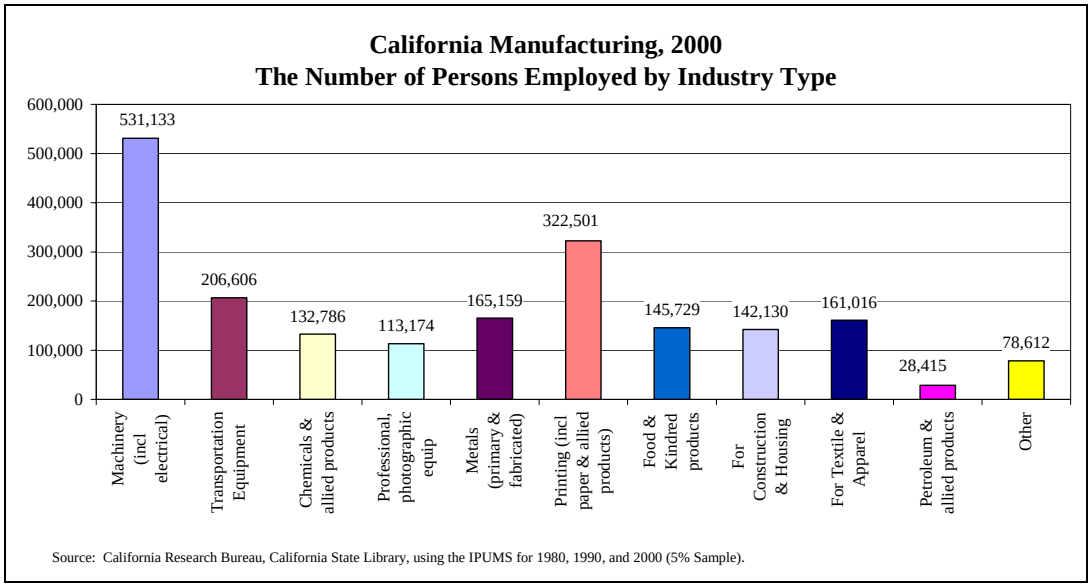
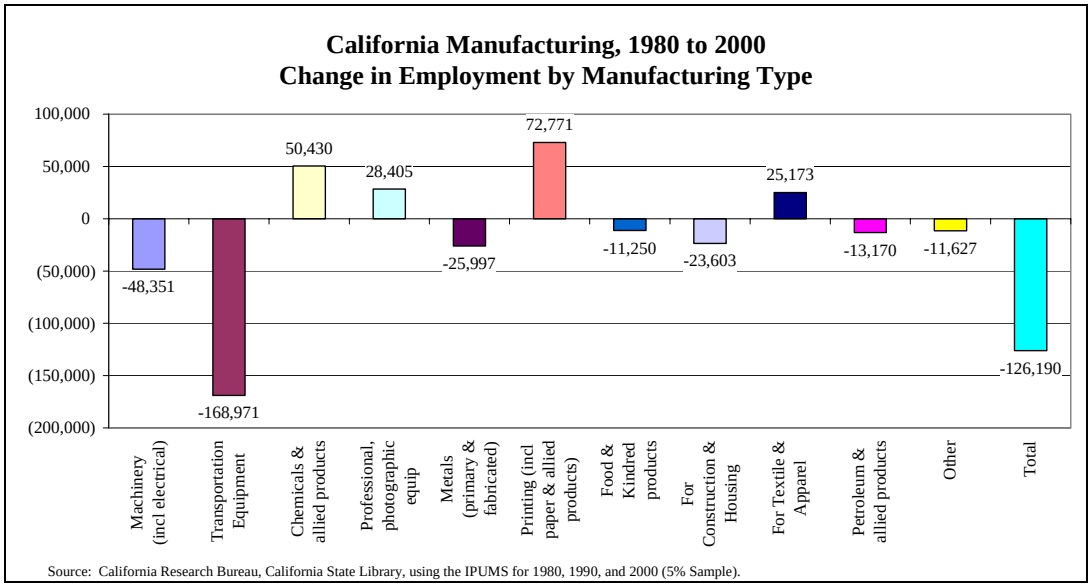



**Figure 7**



There are large differences in the average wages and salaries paid by the different manufacturing industries. At the higher end are companies that produce machinery, transportation equipment, chemicals, and petroleum and allied products. At the other end are jobs in the manufacturing of construction, textiles, and apparel products (Figure 8). The higher paying industries also had larger gains in average wages and salaries over the last 20 years (Figure 9).*

**Figure 8**

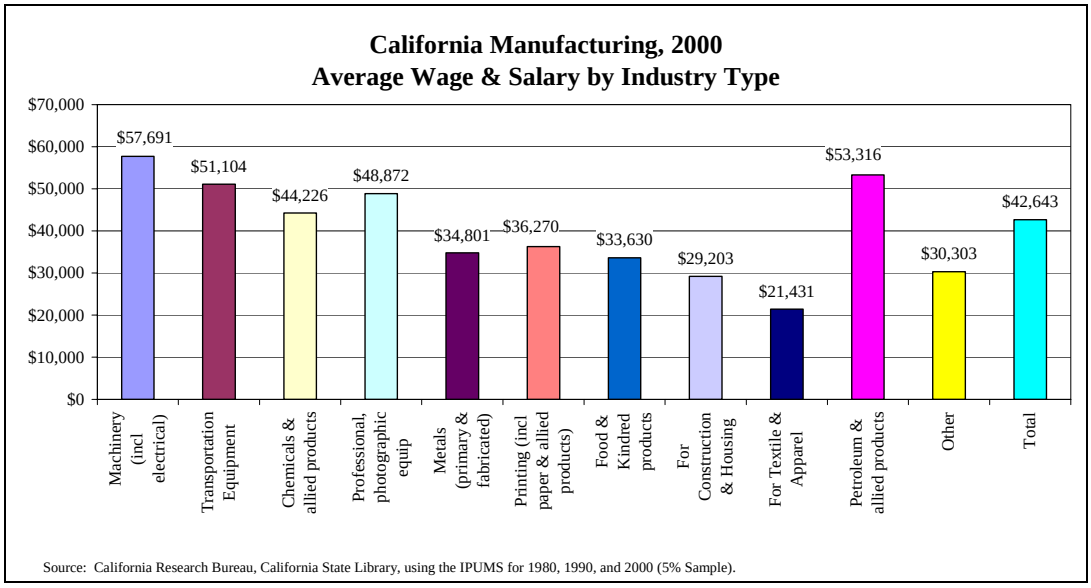
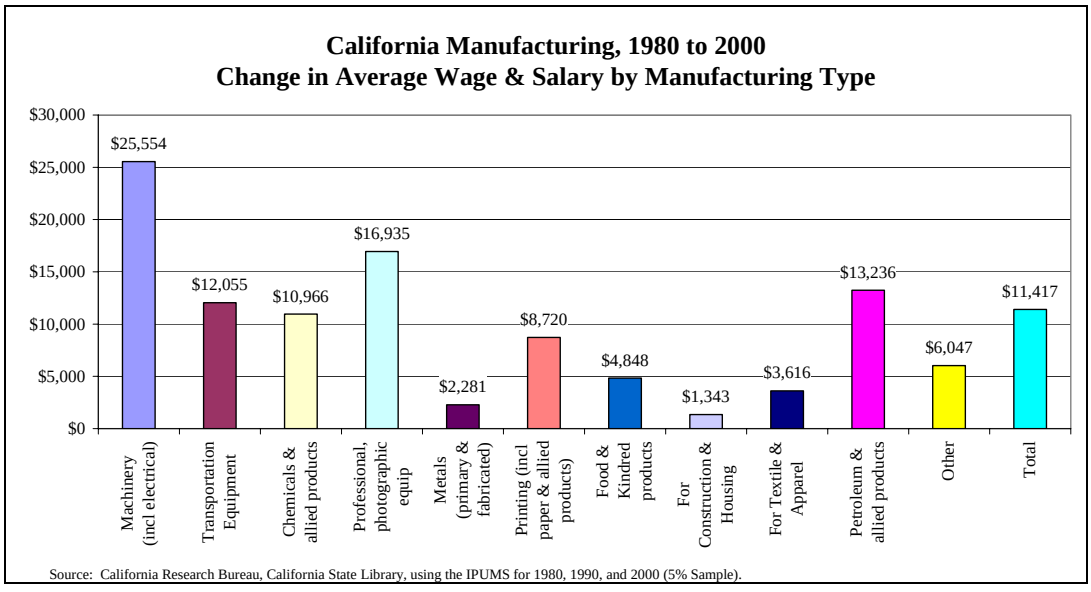



**Figure 9**

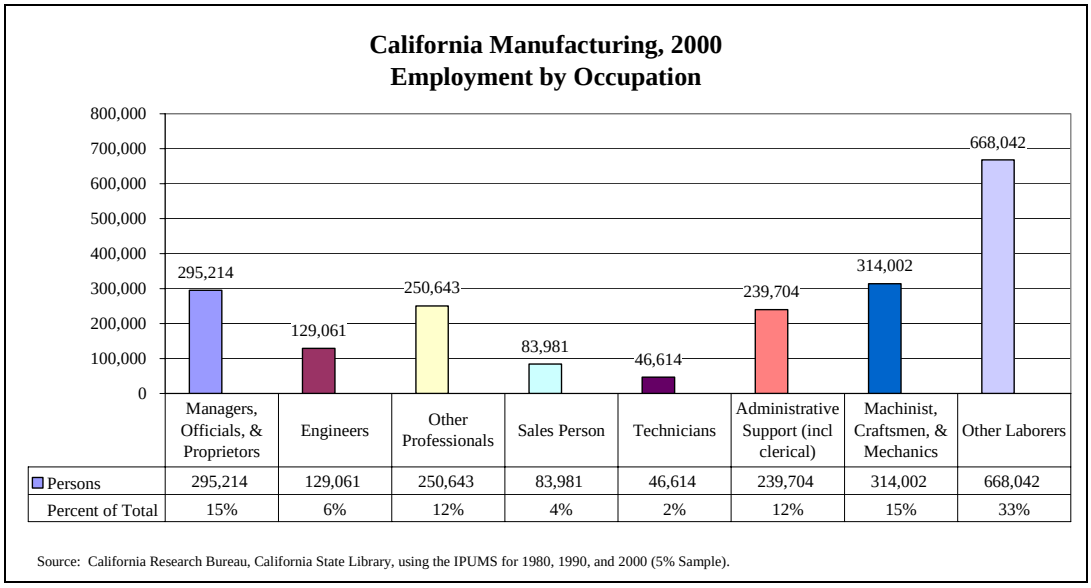



* Figure 9 takes the average wage in 1980 and subtracts it from the 2000 average wage. The 1980 wage and salary figures were converted to the equivalent dollar value in the year 2000 using the Consumer Price Index for all consumers.

## GAINS AND LOSSES BY OCCUPATION

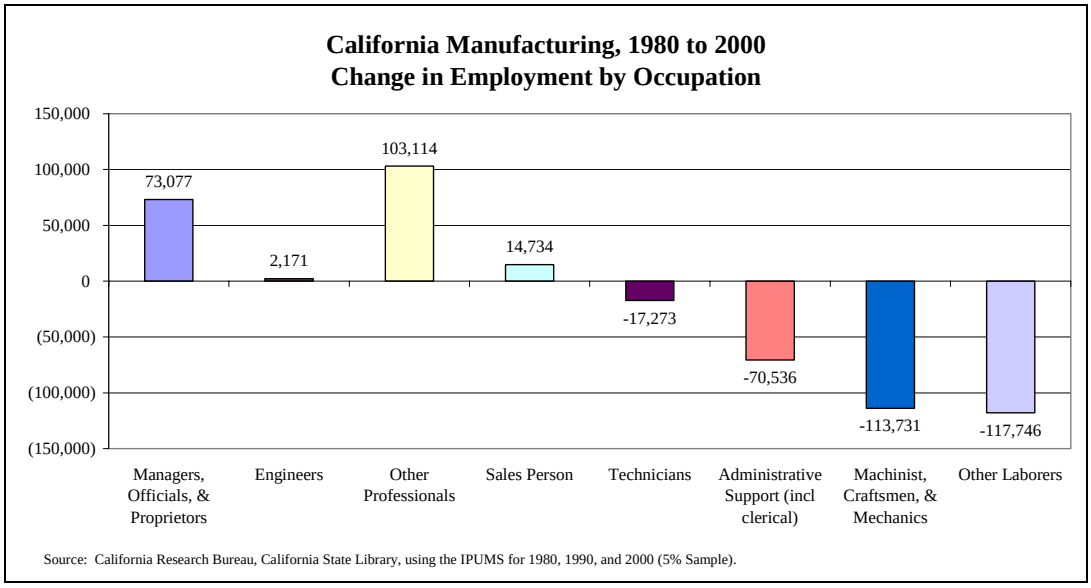
Job losses have occurred not so much at the headquarters and design level, but at the assembly level. Employment in the occupations that require high levels of education, such as managers, engineers, and other professionals (accountants, human resource personnel, etc.) increased or stayed about the same between 1980 and 2000. Most of the employment loss occurred in assembly line and support staff jobs such as machinist, other laborers, and administrative support.

**Figure 10**




Source: California Research Bureau, California State Library, using the IPUMS for 1980, 1990, and 2000 (5% Sample).

**Figure 11**




Source: California Research Bureau, California State Library, using the IPUMS for 1980, 1990, and 2000 (5% Sample).

Figure 12 shows the change in employment between 1980 and 1990, a decade in which manufacturing employment as a whole grew by 199,279 persons. Job losses at the assembly level also occurred in the 1980s, which means that the trend has been in motion for 20 years. The recession of the 1990s just accelerated this trend (Figure 13).

**Figure 12**

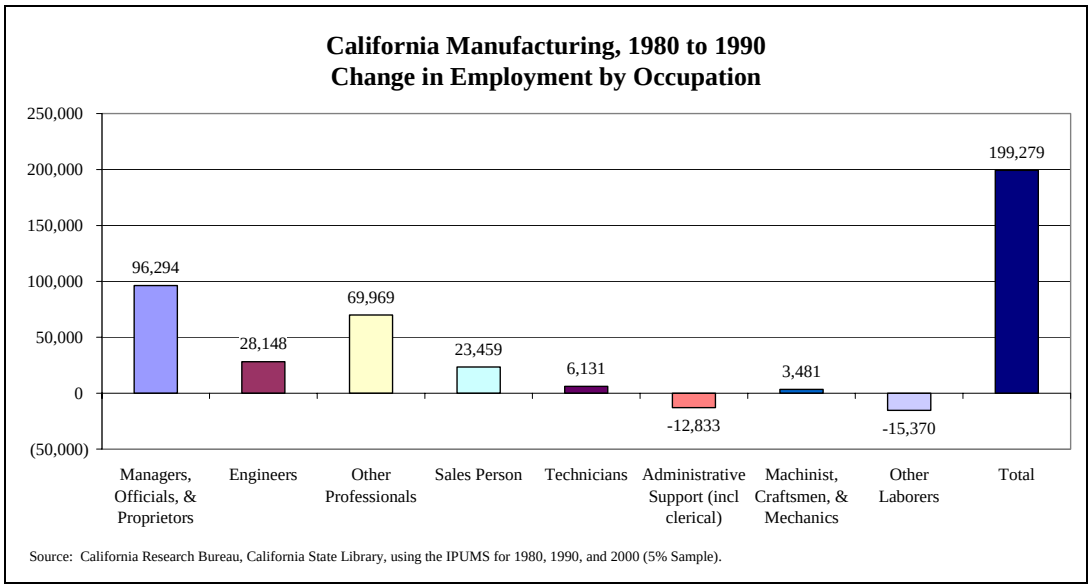
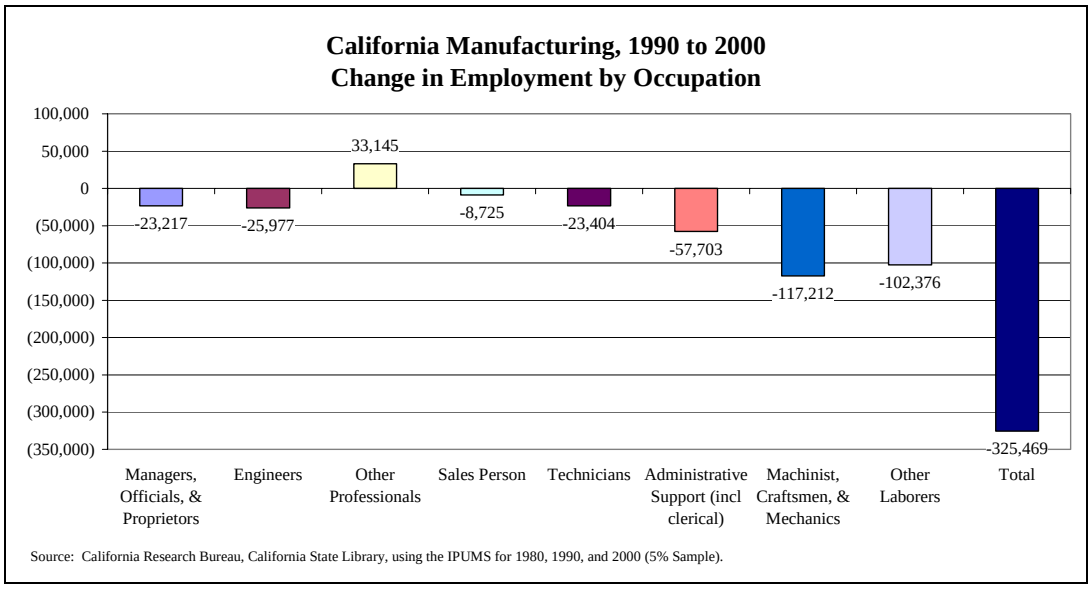



**Figure 13**



As is to be expected, occupations that require more education have higher wages and salaries (Figure 14). The higher paid occupations also have had larger increases in wage and salaries over time (Figure 15).* For example, the income of managers increased more than $30,000 over a 20-year period, an increase of $1,500 per year. In contrast, machinists and other laborers had wage increases of $1,252 ($63 increase a year) and $64 ($3 increase a year), respectively (Figure 15).

**Figure 14**

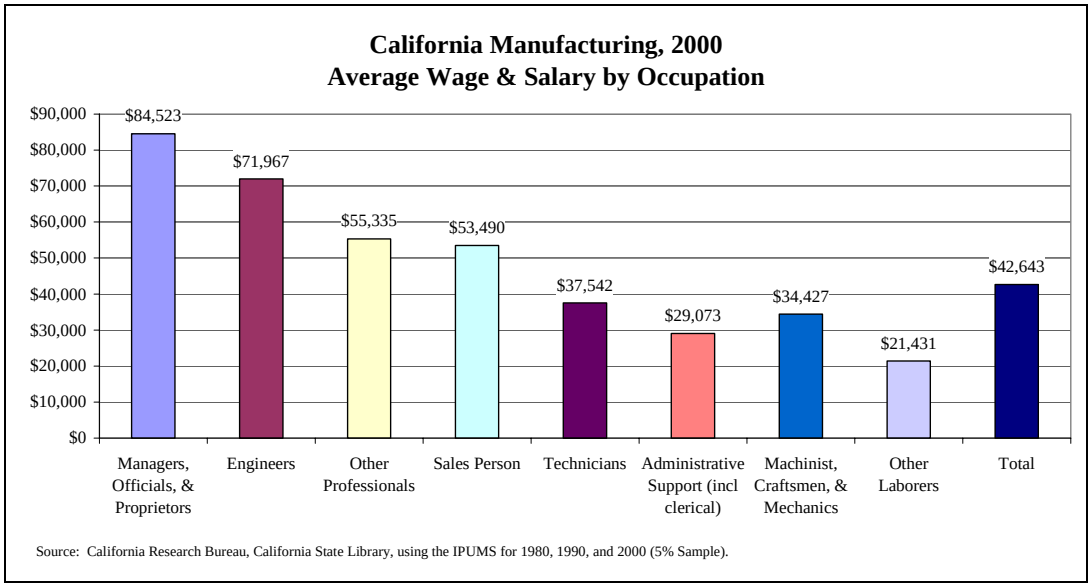
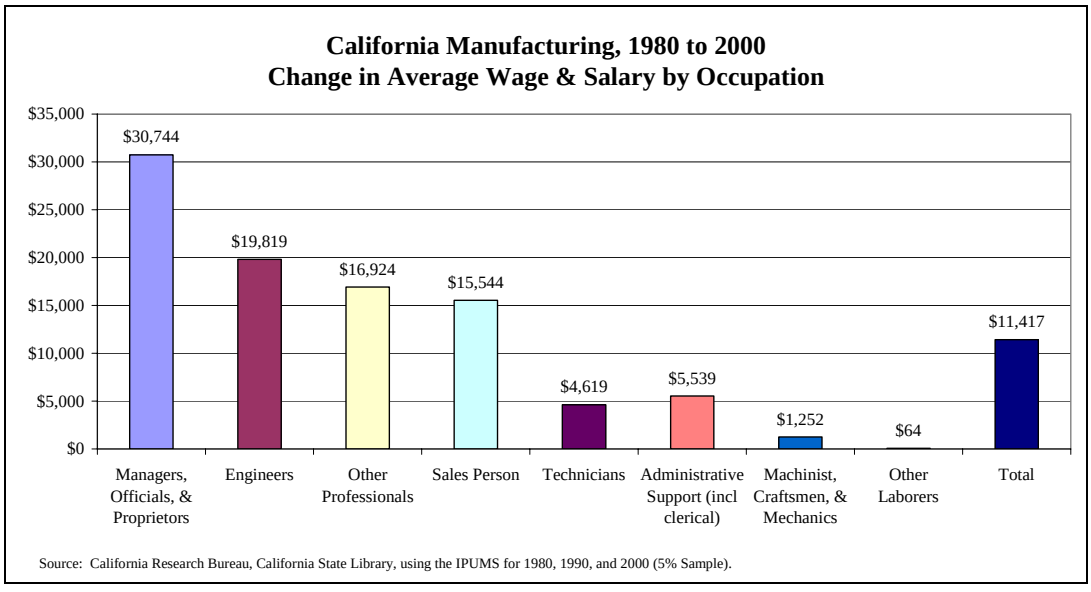



**Figure 15**



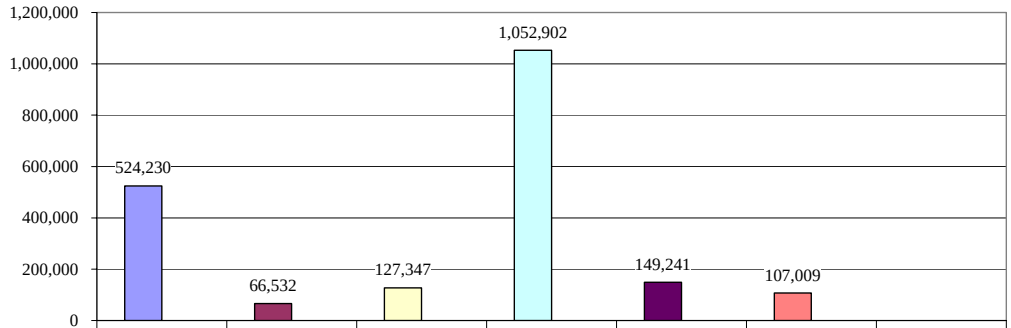

* Figure 15 takes the average wage in 1980 and subtracts it from the 2000 average wage. The 1980 wage and salary figures were converted to the equivalent dollar value in the year 2000 using the Consumer Price Index for all consumers.

## GAINS AND LOSSES BY REGION

Figure 16 shows employment levels by regions of California. Over half of the state's manufacturing jobs are in the Los Angeles region. Together with the Bay Area, these two regions have over 75 percent of the manufacturing jobs. From 1980 to 2000, however, only the Los Angeles region experienced a net loss of manufacturing jobs (Figure 17). The other regions had increases, albeit modest. The region with the smallest population, Sacramento, experienced the largest numerical increase.

**Figure 16**

**California Manufacturing, 2000**
**Employment by Region**

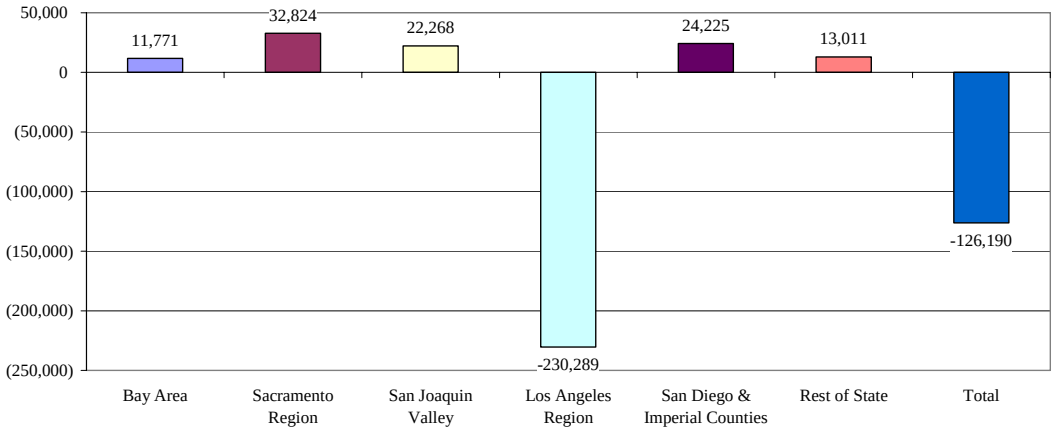



| | Bay Area | Sacramento Region | San Joaquin Valley | Los Angeles Region | San Diego & Imperial Counties | Rest of State | Total |
|---|---|---|---|---|---|---|---|
| Persons | 524,230 | 66,532 | 127,347 | 1,052,902 | 149,241 | 107,009 | 2,027,261 |
| Percent of Total | 26% | 3% | 6% | 52% | 7% | 5% | 100% |

Source: California Research Bureau, California State Library, using the IPUMS for 1980, 1990, and 2000 (5% Sample).

**Figure 17**

**California Manufacturing, 1980 to 2000**
**Change in Employment by Region**




Source: California Research Bureau, California State Library, using the IPUMS for 1980, 1990, and 2000 (5% Sample).

Among California regions, the Los Angeles area has the second lowest average manufacturing wages and salaries (Figure 18), and experienced the second lowest increase in average wages and salaries over the preceding 20-year period (Figure 19),* but is still losing jobs (Figure 17). Although wages and salaries may be a factor, especially in comparison to other countries, it is clear that there is more to the job loss than the cost of labor.

**Figure 18**

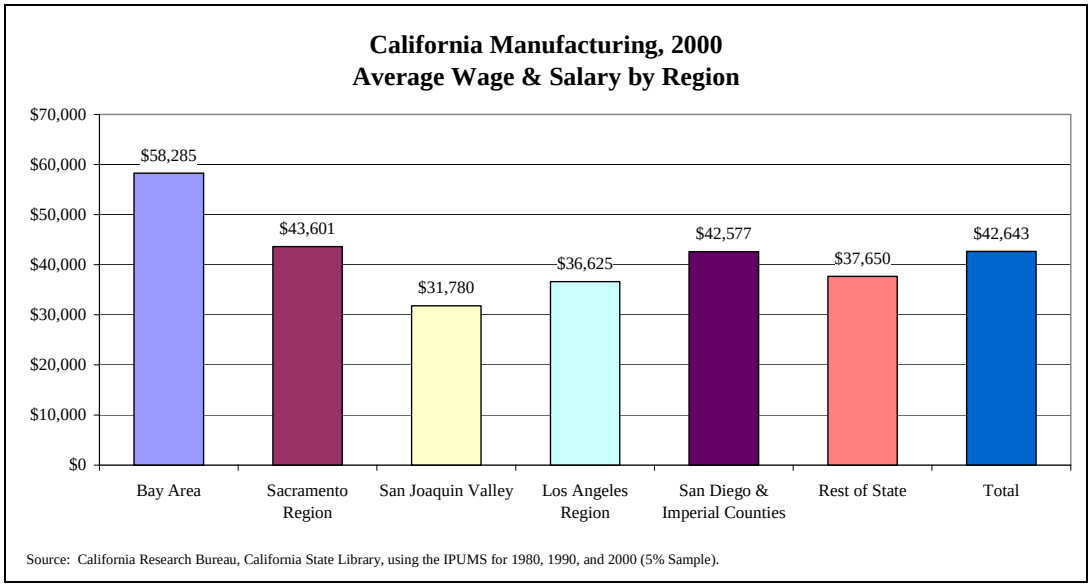
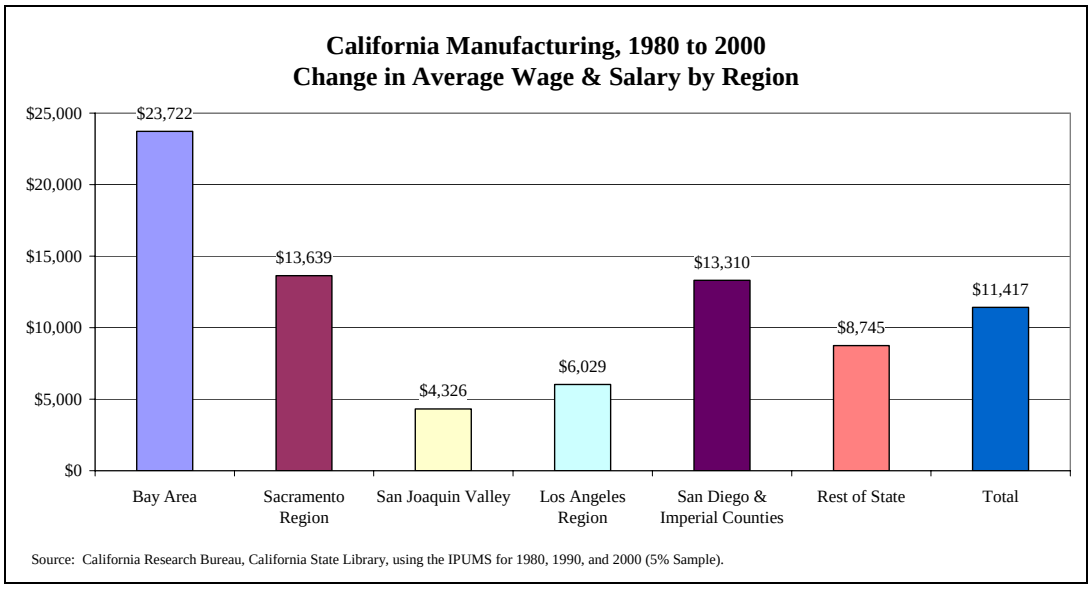



**Figure 19**



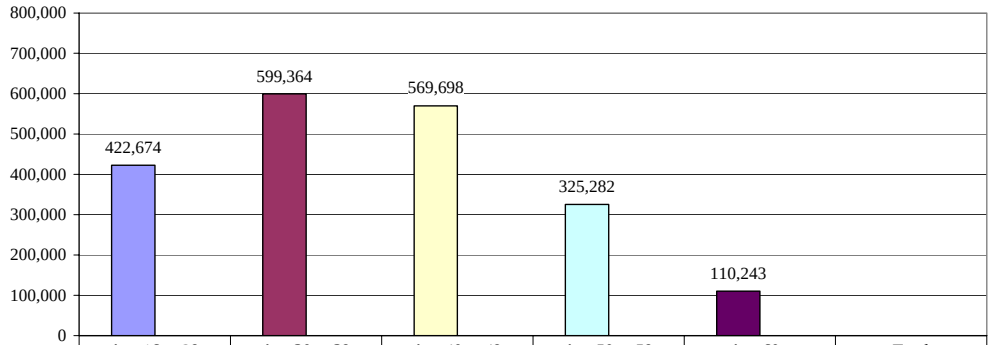

* Figure 19 takes the average wage in 1980 and subtracts it from the 2000 average wage. The 1980 wage and salary figures were converted to the equivalent dollar value in the year 2000 using the Consumer Price Index for all consumers.

## GAINS AND LOSSES BY AGE OF WORKER

Close to 60 percent of California's manufacturing workforce is between the ages of 30 and 49 (Figure 20). Since 1980, only these two age categories had positive increases (Figure 21). The largest loss is among the young, the 29 years old and under group.

**Figure 20**

**California Manufacturing, 2000**
**Employment by Age**

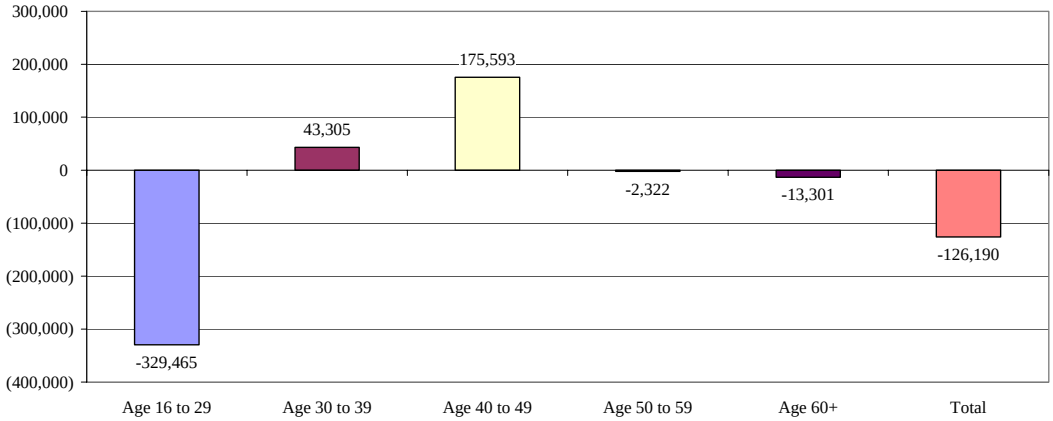



| | Age 16 to 29 | Age 30 to 39 | Age 40 to 49 | Age 50 to 59 | Age 60+ | Total |
|---|---|---|---|---|---|---|
| Persons | 422,674 | 599,364 | 569,698 | 325,282 | 110,243 | 2,027,261 |
| Percent of Total | 21% | 30% | 28% | 16% | 5% | 100% |

Source: California Research Bureau, California State Library, using the IPUMS for 1980, 1990, and 2000 (5% Sample).

**Figure 21**

**California Manufacturing, 1980 to 2000**
**Change in Employment by Age**




Source: California Research Bureau, California State Library, using the IPUMS for 1980, 1990, and 2000 (5% Sample).

That younger workers are underutilized is surprising since they offer the cheapest labor (Figure 22) and have had the lowest increases in pay (Figure 23).*

**Figure 22**

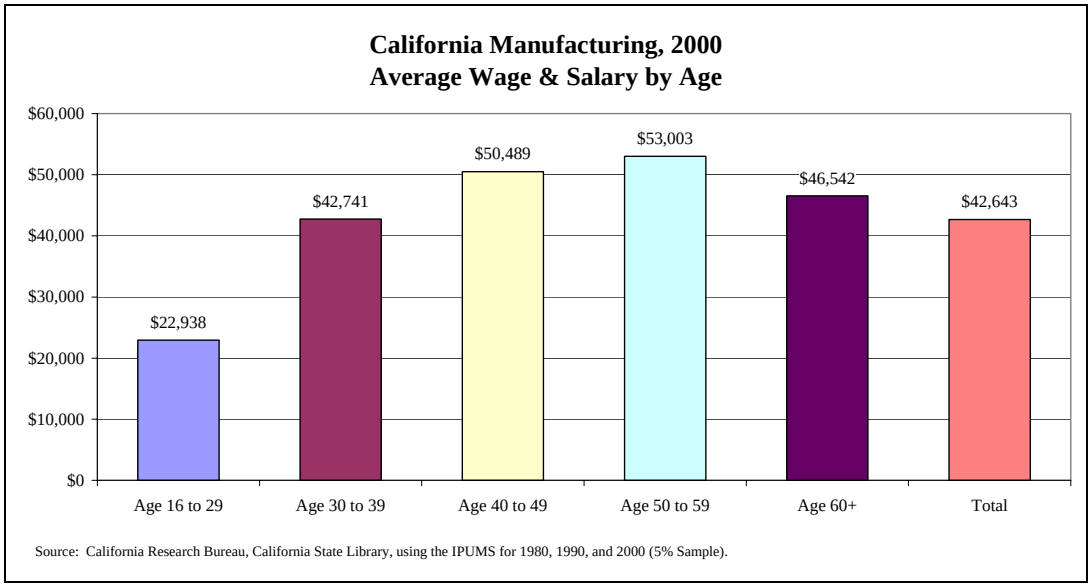
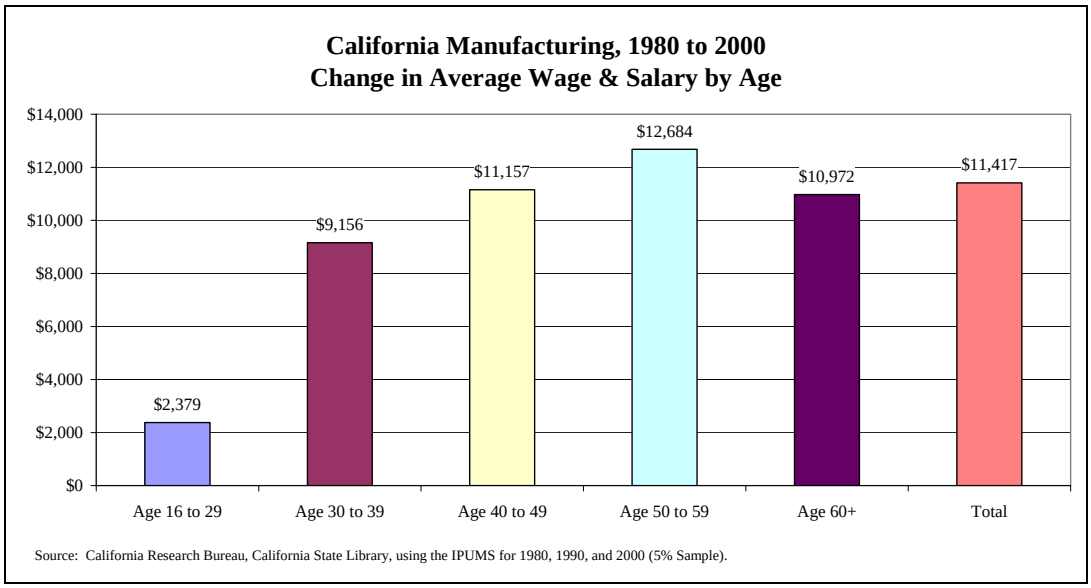



**Figure 23**



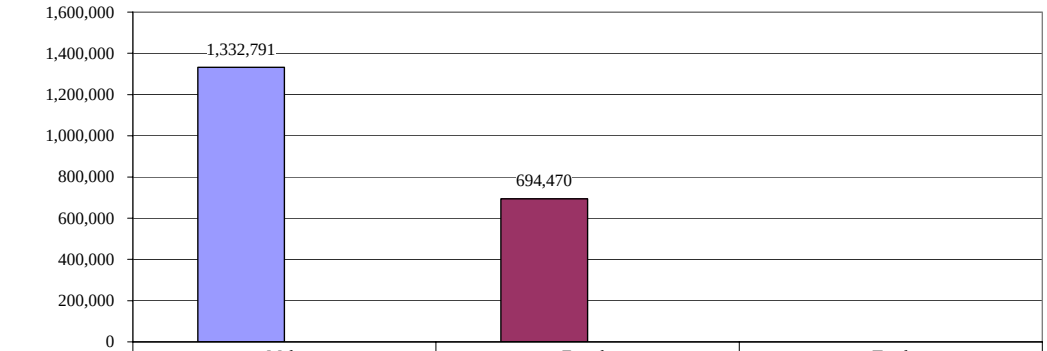

* Figure 23 takes the average wage in 1980 and subtracts it from the 2000 average wage. The 1980 wage and salary figures were converted to the equivalent dollar value in the year 2000 using the Consumer Price Index for all consumers.

## GAINS AND LOSSES BY GENDER OF WORKER

Manufacturing is a male-dominated industry, with females comprising 34 percent of the employees (Figure 24). Since 1980, both men and women have experienced manufacturing job losses, but the numerical decrease is greater for males (Figure 25).

**Figure 24**

**California Manufacturing, 2000**
**Employment by Gender**

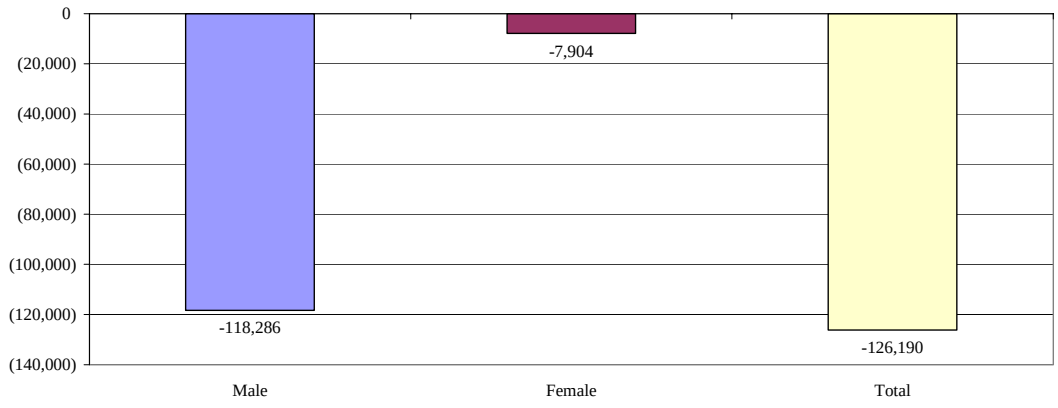



| | Male | Female | Total |
|---|---|---|---|
| Persons | 1,332,791 | 694,470 | 2,027,261 |
| Percent of Total | 66% | 34% | 100% |

Source: California Research Bureau, California State Library, using the IPUMS for 1980, 1990, and 2000 (5% Sample).

**Figure 25**

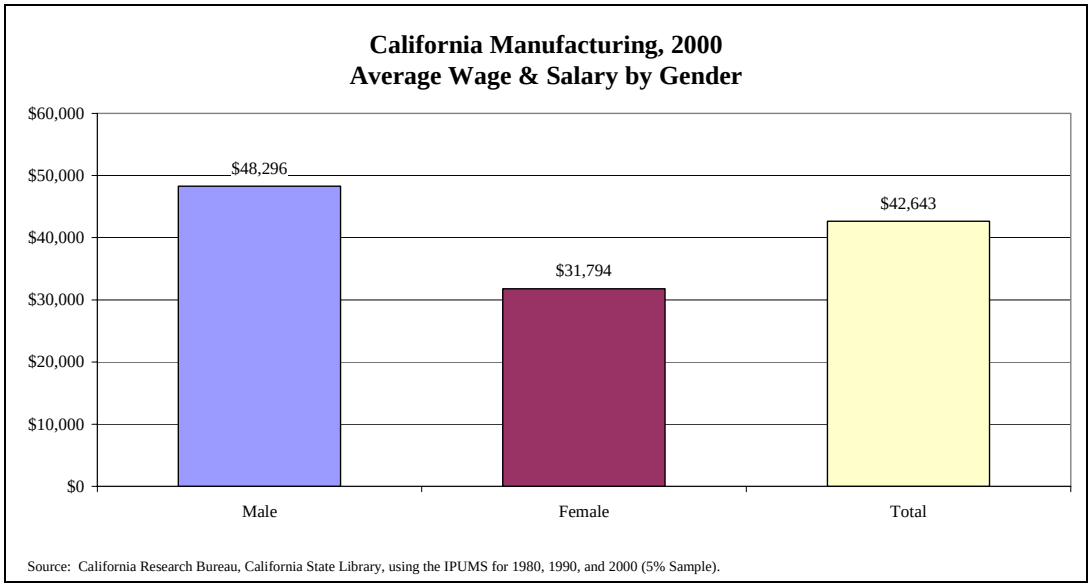
**California Manufacturing, 1980 to 2000**
**Change in Employment by Gender**




Source: California Research Bureau, California State Library, using the IPUMS for 1980, 1990, and 2000 (5% Sample).

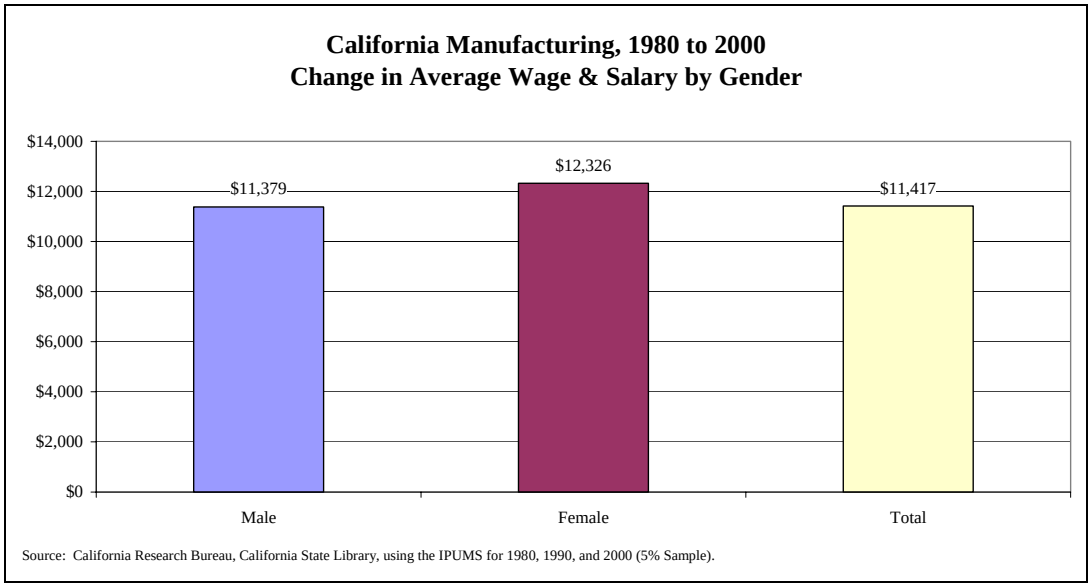
Males can earn on average $16,502 a year more in manufacturing jobs than females (Figure 26). The average wages and salaries of females, however, have increased slightly faster than males since 1980 (Figure 27).*

**Figure 26**




Source: California Research Bureau, California State Library, using the IPUMS for 1980, 1990, and 2000 (5% Sample).

**Figure 27**




Source: California Research Bureau, California State Library, using the IPUMS for 1980, 1990, and 2000 (5% Sample).

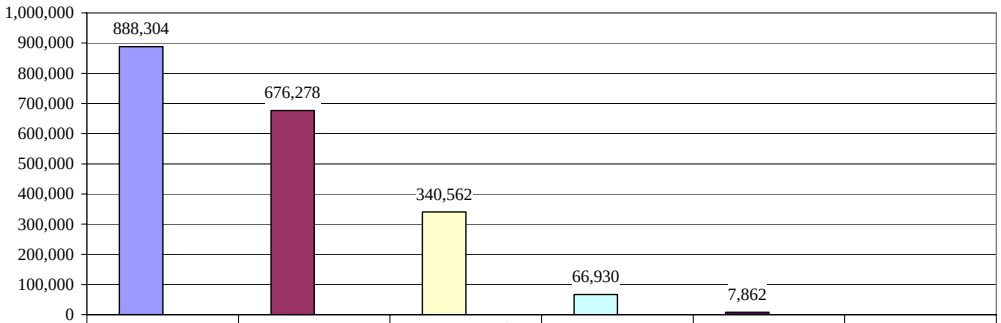
* Figure 27 takes the average wage in 1980 and subtracts it from the 2000 average wage. The 1980 wage and salary figures were converted to the equivalent dollar value in the year 2000 using the Consumer Price Index for all consumers.

## GAINS AND LOSSES BY ETHNICITY OF WORKER

The largest group of California manufacturing workers is White, followed by Latinos, Asians and Pacific Islanders, and African Americans (Figure 28). These four groups make up 97 percent of the workforce. The only two groups that had numerical increases in manufacturing over a 20-year period are Latinos and Asians (Figure 29).

**Figure 28**

**California Manufacturing, 2000**
**Employment by Ethnicity**

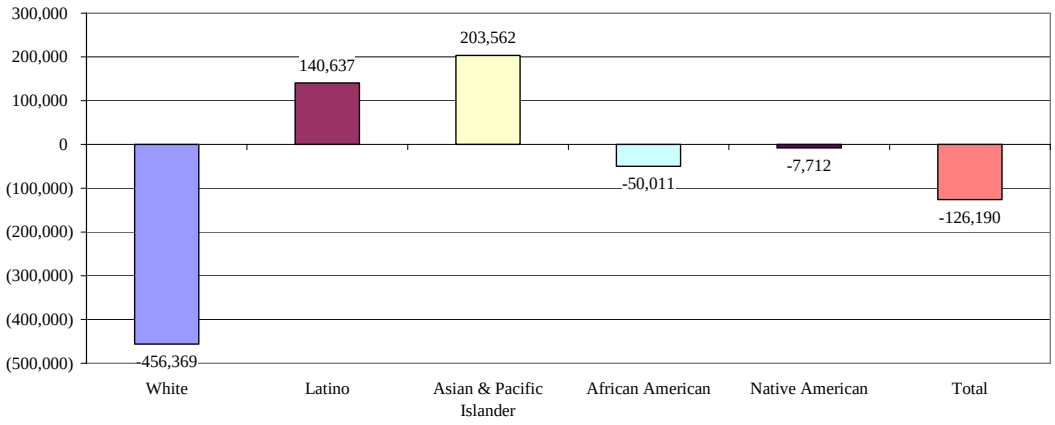



| | White | Latino | Asian & Pacific Islander | African American | Native American | Total |
|---|---|---|---|---|---|---|
| Persons | 888,304 | 676,278 | 340,562 | 66,930 | 7,862 | 2,027,261 |
| Percent of Total | 44% | 33% | 17% | 3% | 0% | 100% |

Source: California Research Bureau, California State Library, using the IPUMS for 1980, 1990, and 2000 (5% Sample).

**Figure 29**

**California Manufacturing, 1980 to 2000**
**Change in Employment by Ethnicity**




Source: California Research Bureau, California State Library, using the IPUMS for 1980, 1990, and 2000 (5% Sample).

White manufacturing workers earn the highest average wages, followed by Asians, African Americans, and Native Americans. Latinos earn the lowest (Figure 30), primarily a result of the lower levels of educational attainment. This relationship is also true for wage increases over time (Figure 31).*

**Figure 30**

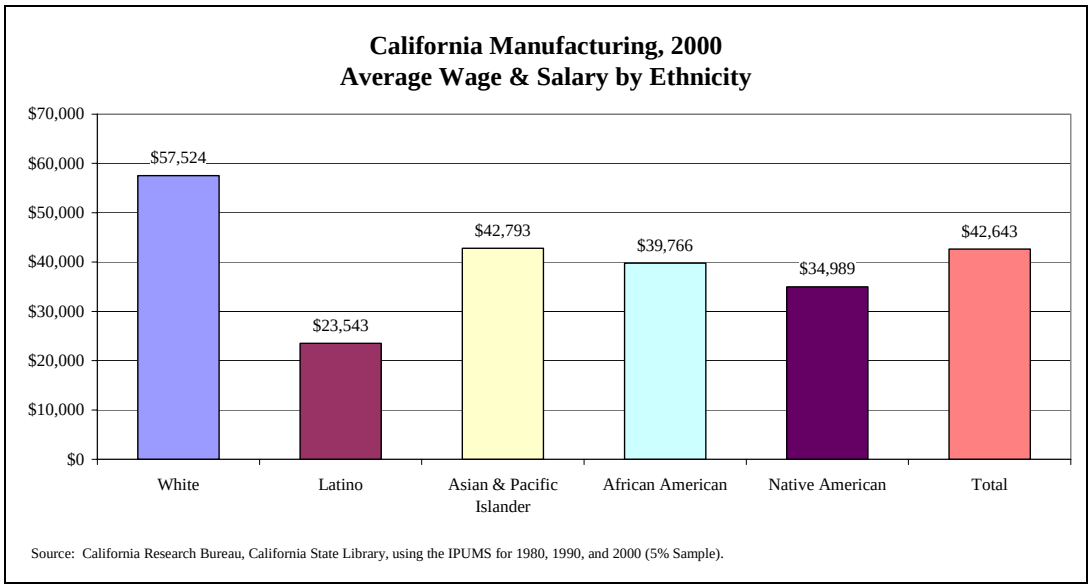
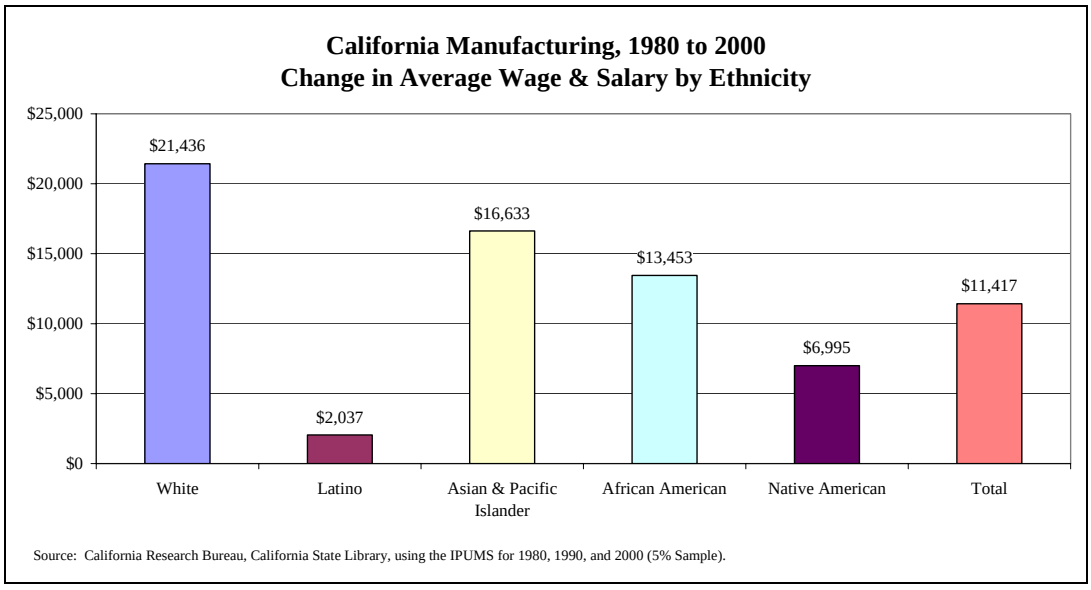



**Figure 31**



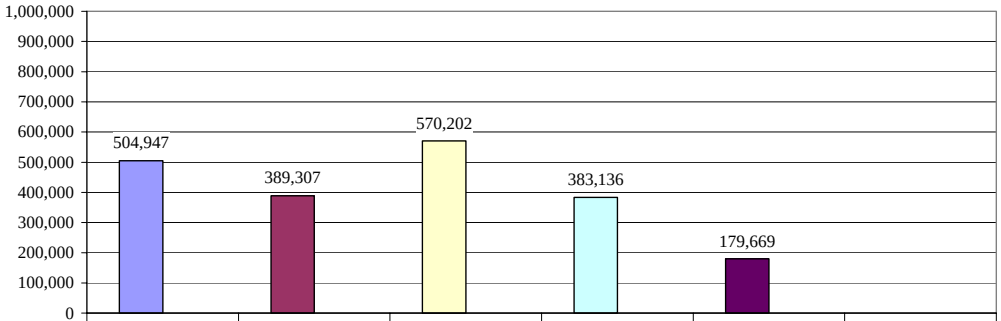

* Figure 31 takes the average wage in 1980 and subtracts it from the 2000 average wage. The 1980 wage and salary figures were converted to the equivalent dollar value in the year 2000 using the Consumer Price Index for all consumers.

## GAINS AND LOSSES BY EDUCATIONAL ATTAINMENT OF WORKER

Currently 44 percent of the workers in the manufacturing sector have a high school diploma or less, 28 percent have an Associate degree or some college, and 28 percent have a bachelor's degree or more. As Figure 33 shows, job losses have been concentrated among workers with an Associate degree or less. Workers with higher levels of education have stayed at the same employment level or increased in numbers. Employment in the bachelor's degree category in 2000 is very close to the 1980 level. The largest increases have been among workers with a Master's degree or more.

**Figure 32**

**California Manufacturing, 2000**
**Employment by Educational Attainment**

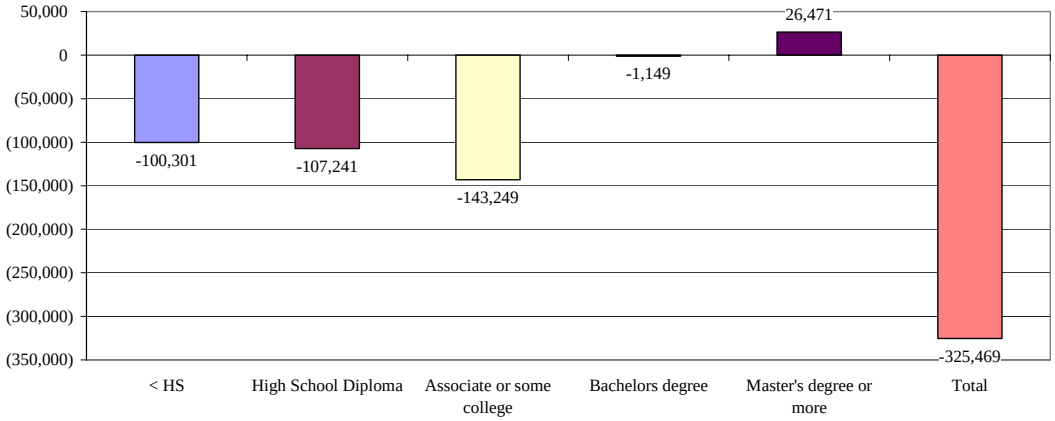



| | < HS | High School Diploma | Associate or some college | Bachelors degree | Master's degree or more | Total |
|---|---|---|---|---|---|---|
| Persons | 504,947 | 389,307 | 570,202 | 383,136 | 179,669 | 2,027,261 |
| Percent of Total | 25% | 19% | 28% | 19% | 9% | 100% |

Source: California Research Bureau, California State Library, using the IPUMS for 1980, 1990, and 2000 (5% Sample).

**Figure 33**

**California Manufacturing, 1990 to 2000**
**Change in Employment by Educational Attainment**




Source: California Research Bureau, California State Library, using the IPUMS for 1980, 1990, and 2000 (5% Sample).

As is to be expected, average wage and salary rises with educational attainment (Figure 34). Over time, workers with more education also have gained the largest wage and salary increases (Figure 35).* In contrast, the income of workers with a high school diploma or less decreased between 1980 and 2000.

**Figure 34**

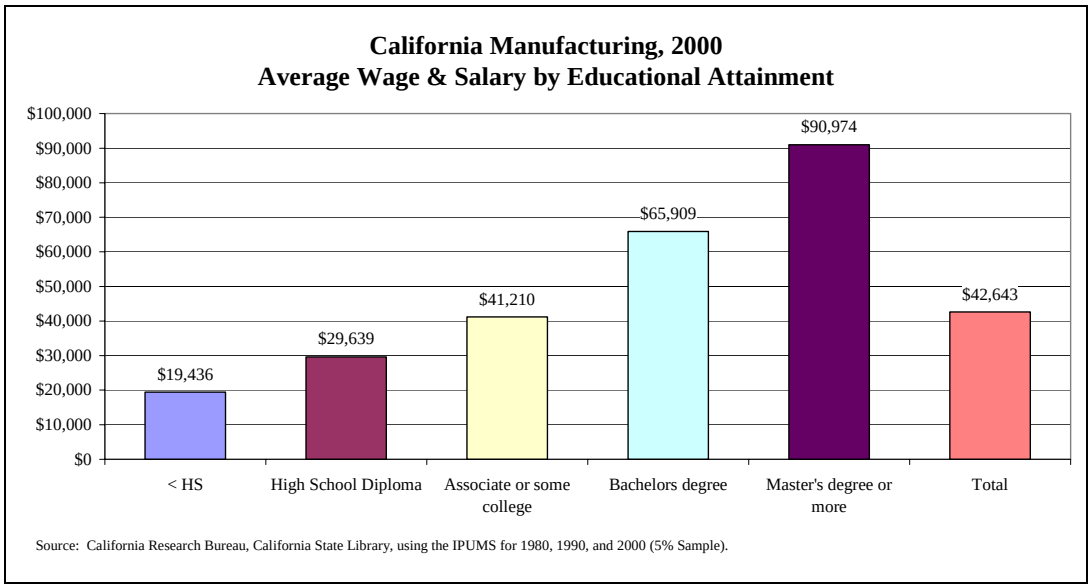
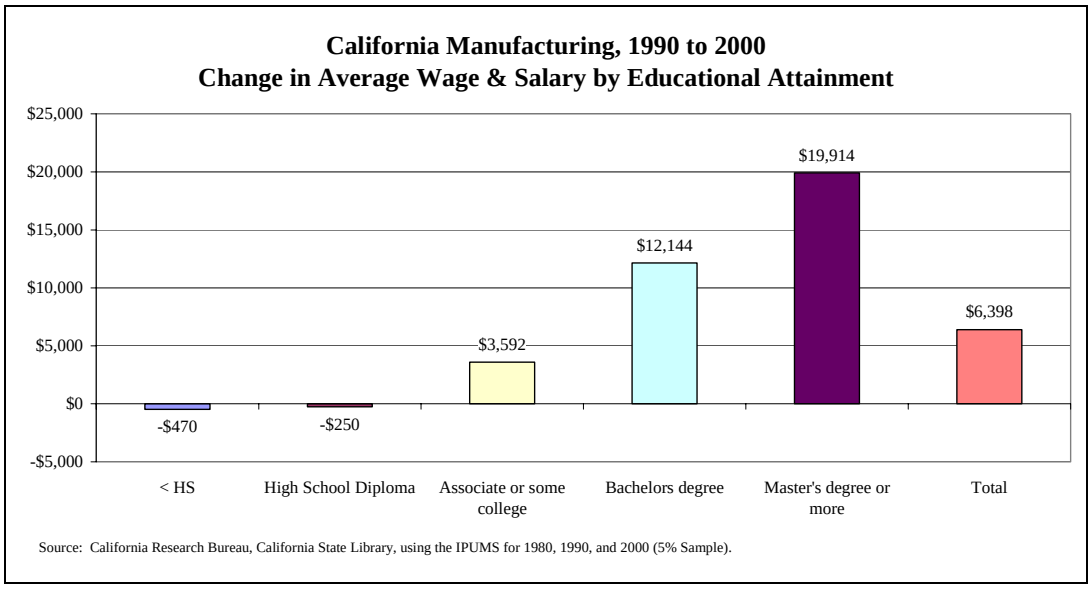



**Figure 35**




* Figure 35 takes the average wage in 1980 and subtracts it from the 2000 average wage. The 1980 wage and salary figures were converted to the equivalent dollar value in the year 2000 using the Consumer Price Index for all consumers.

## WHO RECEIVES FORMAL TRAINING?

Overall employment in California's manufacturing sector is declining, but the impact is uneven. Not all sectors are in the decline, nor does the decline affect everybody. Chemical, professional and photographic equipment, printing, and textile manufacturers employ 176,779 more people than they did in 1980. The demand for highly educated workers has also increased. The manufacturing sector now employs over 224,000 more persons in high-end occupations than 20 years ago.

The sector that is losing ground is assembly occupations. Even during the expansionary decade of the 1980s, the demand for machinist, craftsmen, and other laborers did not increase. The question is whether California can keep the assembly line manufacturing functions in the state.

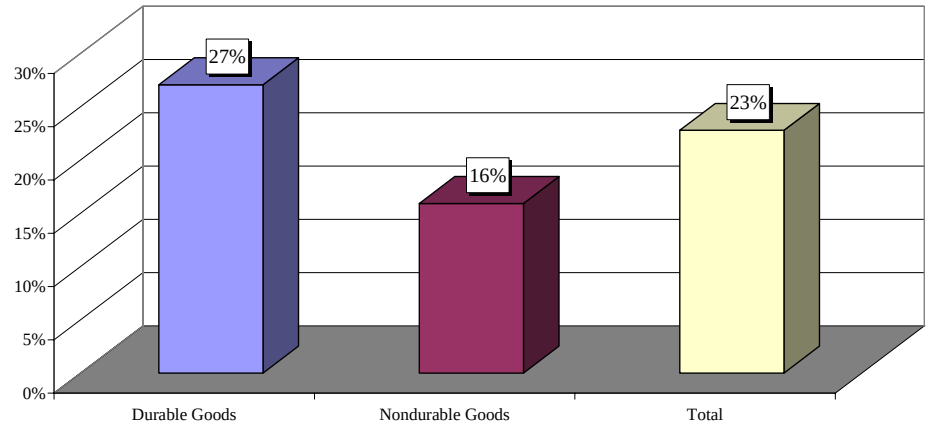
In this section, we focus on whether assembly line workers are the beneficiaries of formal job training.[*] Information on formal training comes from the 1996 Survey of Income and Program Participation, which asked participants if in the past year they had received any kind of training designed to improve their skills in either their current or most recent job. The question captured a wide range of training: training for basic job skills, training to upgrade or refresh existing skills, training to learn new technical skills, or training that teaches organizational policies.

[*] Due to the scarcity of information for California, our analysis relies on the 1996 Survey of Income and Program Participation.

According to the 1996 Survey of Income and Program Participation, around 23 percent of California workers in manufacturing receive job training in a year's time. This rate varies by the type of manufacturing, with durable goods* manufacturers providing job training at a higher rate.

**Figure 36**

**Percent of California Workers Provided with Training in the Manufacturing Sector, by Durable and Nondurable Goods, 1996**



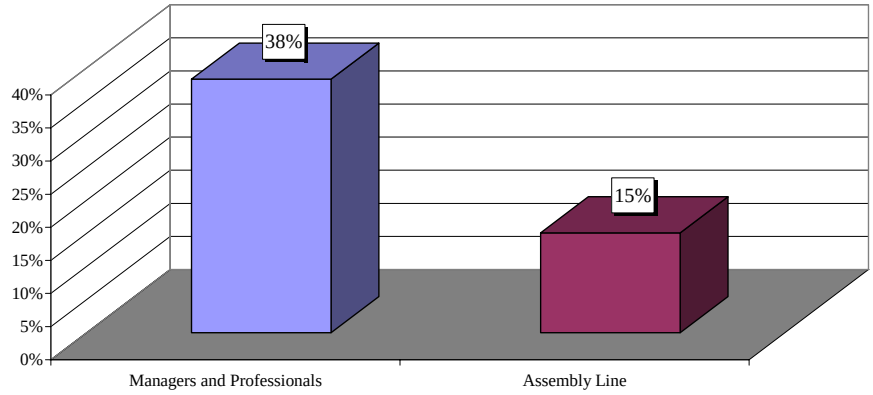

Source: California Research Bureau, California State Library using the 1996-2000 SIPP.

* Durable goods are manufactured items expected to last at least three years. The following industry groups fall in the durable goods category above: Machinery (including electrical), Transportation Equipment, Professional and Photographic equipment, Metals (primary and fabricated), and manufactured products for Construction (lumber and wood products, furniture and fixtures, stone, clay, glass, and concrete products).

Workers in higher paying manufacturing occupations receive more job training. Nearly 40 percent of executive, engineers, sales persons, technicians, and professional specialty workers received formal training in 1996. In contrast, only 15 percent of assembly line workers received some job training.

**Figure 37**

**Percent of California Workers Provided with Training in the Manufacturing Sector, by Occupation, 1996**

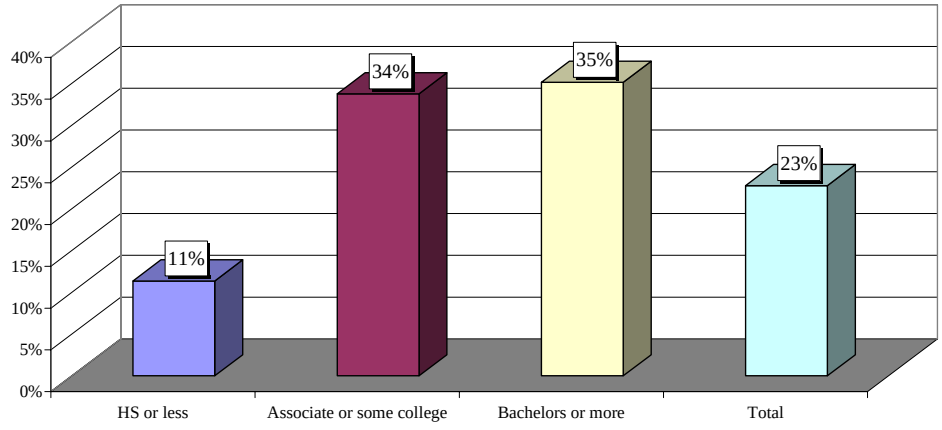



Source: California Research Bureau, California State Library using the 1996-2000 SIPP.
Note: Assembly Line workers include precision production, machine operators, and other laborers.
It also includes administrative support workers. Without administrative support workers, the rate above would be 12% instead of 15%.

Employers are more likely to train highly educated workers. Training is provided to only 11 percent of manufacturing workers who have a high school diploma or less, compared to 35 percent of workers who have a bachelor's degree or more.

**Figure 38**

**Percent of California Workers Provided with Training in the Manufacturing Sector, by Educational Attainment, 1996**

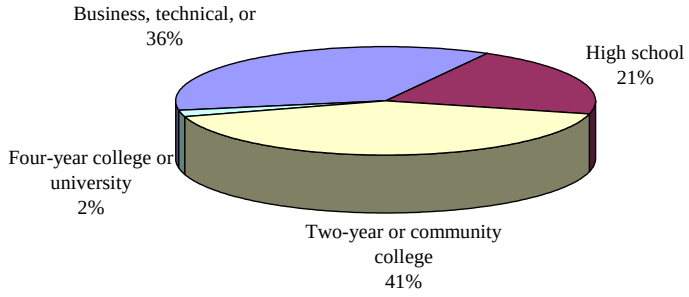



Source: California Research Bureau, California State Library using the 1996-2000 SIPP.

Most manufacturing workers receive their training at either a community college or a business or technical school.

**Figure 39**

**Institution Providing the Training for California Workers in the Manufacturing Sector, 1996**




Source: California Research Bureau, California State Library using the 1996-2000 SIPP.

## TRAINING PROGRAMS FOR THE MANUFACTURING SECTOR

In this report, we assume that assembly line workers could benefit from formal training. All workers, for instance, need to understand the manufacturing process, the concept of quality control, and the benefits of working in teams. In addition, all workers need to obtain and maintain basic computer skills to operate newer computer-controlled machines in the manufacturing process. Unfortunately, as shown in Figure 37, only 15 percent of workers in assembly line occupations receive formal job training.

In this section we will try to answer the following two questions:

- Which public programs are designed to meet the job-training needs of the manufacturing sector?
- Do these programs serve assembly line workers?

California's workforce development system consists of a variety of programs and institutions that educate, train and retrain workers. In the 2000/01 fiscal year, California invested approximately $5.6 billion in 39 state programs,[*] and provided services to about seven million people.[†] However funding decreased to approximately $5 billion for the 2001/2002 year, primarily due to federal and state general fund reductions.

Of the 39 state-funded employment and training programs, three programs are the most likely to provide training to workers in assembly line jobs. These programs are:

- The state's Employment Training Panel,
- Federal Workforce Investment Act funds directed by the Employment Development Department (EDD), and
- Vocational Education and Adult Education programs (non-credit) offered by California's community colleges and high schools.

### California's Employment Training Panel

The Employment Training Panel (ETP) was created in 1982 to address the displacement of workers resulting from manufacturing plant closures. The program has evolved to focus primarily on the retraining of incumbent workers in basic industries that are confronted with out-of-state competition, mostly in the manufacturing and high technology sectors.

[*] Following are the sources of the funding: $3.1 billion in State General Funds, $2.2 billion in federal funds, and $243 million from other funding sources.

[†] For more information see Alicia Bugarin, *California's Job Training, Employment, and Vocational Education Programs* (Sacramento: California Research Bureau, California State Library, 2001). (Available at http://www.library.ca.gov)

ETP is funded through a special tax* levied on the California employers who participate in the state's unemployment insurance system. This provides annual funding of $70 to $100 million.

ETP funds are primarily used to retrain incumbent workers, although up to ten percent of annual training funds may be used to train unemployed workers. To qualify for ETP retraining funds, a company must demonstrate that it is facing out-of-state competition. A company engaged in manufacturing is automatically deemed to meet the out-of-state competition requirement.

Employers who participate in the ETP program must also share in the cost of the training. This ensures that there is a commitment on the part of the employer. Indirectly ETP also serves as a catalyst that encourages employers to provide additional training. Independent evaluations of ETP show that successful training often leads to additional investment in training by employers and employees. In addition, the more involved in-house staff is in the training, the more likely it is that training will continue after ETP funding ends.[1]

Independent researchers have verified the value of ETP-funded training for businesses and workers alike.[2] They have found that participating companies have expanded their payrolls compared to similar businesses that did not participate in ETP-funded training. Wage increases for workers completing ETP programs are approximately 20 percent higher than wage increases for workers in similar companies. ETP-funded training significantly reduces unemployment and increases job security and upward mobility. Overall, there has been a return on investment of over $5 for every $1 in ETP funds spent on training, as measured in benefits to companies, workers, and California's economy.[3]

### *ETP and the Manufacturing Industry*

The Employment Training Panel funds job training for workers in all industry sectors in California, but the majority of funds support job training in the state's manufacturing sector. As shown in Figure 40, data from ETP's completed contracts for FY 2002-2003 indicate that 52 percent of all ETP funds were allocated for workers in manufacturing. In FY 2002-2003:

- Contractors were reimbursed $27.8 million for the successful training and retention of almost 23,700 workers in the state's manufacturing sector (52 percent of all funds expended and 53 percent of all workers trained).
- 47 percent of all businesses served in the previous year were in manufacturing, and 60 percent of all fund allocations approved by ETP in FY 2003-2004 were targeted at the manufacturing sector.

* A 0.1 percent tax is levied as part of the unemployment insurance paid by employers. Each private, for profit, California employer is required to contribute one-tenth of one percent of the first $7,000 of wages for each employee. There is an annual maximum of $7 per employee.

The majority of ETP funds are spent in the manufacturing sector, as shown in Figure 40.

**Figure 40**

**Employment Training Panel (ETP)**
**Funds Spent on Training by Industry**
FY 2002/2003

| Industry | ETP funds (in millions) | Workers Trained |
|---|---|---|
| Manufacturing | $27.8 | 23,694 |
| High Technology | $4.5 | 7,529 |
| Trade | $5.1 | 3,900 |
| Services | $8.6 | 4,987 |
| Other | $7.3 | 4,458 |
| Subtotal | $53.3 | 44,568 |

Source: Employment Training Panel
Note: The $53.3 million reflects numbers for contracts completed in FY 2002/2003.
High Technology includes: software development, multimedia/entertainment, computer programming and systems design, and telecommunications.
Trade includes: retail and wholesale.
Other includes: agriculture, construction, transportation, and finance.

In FY 2002/2003, ETP funded 108 completed job training contracts in the manufacturing sector. Of these, 72 were with subcontractors who provided the training; the other 36 contracts were with individual employers who provided the training themselves. There were an additional 57 completed multiple employer contracts that provided training for various industries, including manufacturing. Of these multiple employer contracts, three were with community colleges, one with a Workforce Investment Board and the rest were with private colleges or private training organizations.

Only two of the FY 2002/2003 ETP contracts were for training new employees; the rest were for retraining incumbent workers. The average wage after retraining ranged from $6.75 to $45.67. The occupations of the trainees ranged from lower-paid, lower-skilled machine operators and manufacturing assemblers, to higher skilled, high-wage engineers, information technology specialists, and scientists.

However from the data collected by the Employment Training Panel (ETP), it is not clear how many or how well assembly line workers are served. This is because assembly line workers are not a specific category for data collection purposes. Thus, ETP's data is insufficient to discern how many of its trainees are assembly line workers.

In recent years, funds for the ETP have been transferred to pay for other programs, thus diminishing the impact that ETP might have on assisting workers in the manufacturing sector. For example, in FY 2003/2004, of the $99,848,000 in Employment Training Funds available, only $18,185,000 (approximately 18 percent) was allocated for job

training through ETP; the rest was transferred and appropriated to other departments. This reduction in funding significantly reduces the ability of ETP to pay for the training of workers in the manufacturing sector. For example, since FY 2001/02, $61.6 to $56.4 million has been transferred annually to the Department of Social Services (DSS) to support the CalWORKS employment and training program. An additional $3.2 to $2.9 million has been transferred annually since FY 2001/2002 to the Department of Industrial Relations (DIR) for administrative support of the Division of Apprenticeship Standards. For more detail, see Figure 41.

**Figure 41**

**Fund Transfers to Other Programs**

| Employment and Training Panel (ETP) Appropriation | FY 2001-02 | FY 2002-03 | FY 2003-04 | Proposed FY 2004-05 |
|---|---|---|---|---|
| **Employment Training Funds (ETF)** | **$148,987,000** | **$117,270,000** | **$82,432,000** | **$77,786,000** |
| **ETF Appropriations to Other Programs:** | | | | |
| Department of Social Services | ($61,650,000) | ($30,000,000) | ($56,432,000) | ($56,432,000) |
| Department of Industrial Relations | ($3,226,000) | ($3,136,000) | ($2,930,000) | ($2,957,000) |
| Statewide General Administrative (Pro Rata) | $0 | ($87,000) | ($155,000) | ($45,000) |
| State and Local Labor Market Information | ($3,393,000) | ($3,306,000) | $0 | $0 |
| EDD Tax Collections Branch | ($4,678,000) | ($4,708,000) | ($4,730,000) | ($4,750,000) |
| **Total Fund Transfers** | **($72,947,000)** | **($41,237,000)** | **($64,247,000)** | **($64,184,000)** |
| **ETP Funds Left After Transfers** | **$76,040,000** | **$76,033,000** | **$18,185,000** | **$13,602,000** |
| Funds Disencumbered from Prior Year | $18,420,000 | $22,400,000 | $31,076,000 | $14,300,000 |
| Reimbursements* | | | | $40,000,000 |
| Other administrative adjustments | | ($4,712,000) | $373,000 | $397,000 |
| **Subtotal** | **$94,460,000** | **$93,721,000** | **$49,634,000** | **$68,299,000** |
| Program Administration | ($10,275,308) | ($9,546,399) | ($8,763,947) | ($8,600,000) |
| Marketing and Research | ($1,000,000) | ($1,500,000) | ($1,149,343) | ($950,000) |
| **Total Funds Available for Training** | **$83,184,692** | **$82,674,601** | **$39,720,710** | **$58,749,000** |

Source: Employment and Training Panel

*Reimbursements from workers' compensation reform savings

## The Workforce Investment Act Program

Another program that could be an avenue for training assembly line workers is the federal Workforce Investment Act (WIA), which has required local areas to provide job training services through a "one-stop delivery system" since 1998. The goal of the program is to help job applicants and workers seeking to improve their job skills through access to a broad array of public and private job training programs. "The system is also designed to serve employers seeking qualified workers or funding to train prospective or incumbent workers." [4]

In state Fiscal Year 2002/2003, $561 million in federal funds was appropriated for California's WIA program. The program served a total of 71,753 adults and 41,148 dislocated workers. The funding and job seekers are separated into three categories:

(1) adults (those 19 and older, including TANF* recipients), with local expenditures of $136,605,746,

(2) dislocated workers, with local expenditures of $124,116,512, and

(3) youth (age 14-21), with local expenditures totaling $145,142,574.

In addition, there are other WIA funds available for special projects such as the North Valley Training Consortium (NOVA) project for Welfare-to-Work. This is a job training program designed and implemented between a community college or adult school and the employer. In addition, the project continues the training even after the participants are employed to further enhance their existing employment prospects.

Under WIA, employees can receive the following sequence of services.

> *Core Services*: initial assessments, job search assistance, employment counseling, and information about access to supportive services such as transportation assistance, earned income tax credits, publicly funded health insurance, and subsidized child care.
>
> *Intensive Services*: development of individual employment plans, short-term pre-vocational services (English as a second language and in-dept assessments), work experience activities (on the job training and internships), and career counseling planning services.
>
> *Training Services*: If an individual meets the requirements for intensive services and has not been able to obtain employment, that person is eligible for occupational skills training, on-the-job training, skills upgrading and retraining, adult education and literacy activities, and customized training.

Employers can use one-stop WIA centers to recruit employees, to access job training services to retrain current employees, and/or to establish on-the-job training programs or informational workshops. The WIA provides states and local areas with considerable flexibility to expand services to unemployed and low-wage workers. Adults can receive an array of pre and post-employment services as described above, including individualized job preparation services, skills training, work-related basic education, English as a second language (ESL), paid and unpaid work experience, on-the-job training, incumbent worker training, customized training, supportive services including childcare**,** and needs-related payments including cash assistance and food stamps.

* The Welfare Reform Law of 1996 created the Temporary Assistance for Needy Families (TANF) program. TANF became effective July 1, 1997, and replaced what was then commonly known as welfare: Aid to Families with Dependent Children (AFDC) and the Job Opportunities and Basic Skills Training programs.

How well is WIA serving the state's manufacturing sector, especially assembly line workers? It is difficult to tell from the available data. The Employment Development Department (EDD) does not collect data on participants' prior occupations (before enrollment in the job training programs). EDD's two main service categories are unemployed adults and dislocated workers. In the 2002 program year, 71,753 adult participants were served, roughly 79 percent of whom were unemployed at the time of enrollment; of these 41,148 participants received Dislocated Worker services, approximately 93 percent of whom were unemployed when enrolled. This data suggests that EDD administers the WIA program primarily to serve employees who have been laid off or are otherwise unemployed, more than incumbent workers who need to upgrade their skills.

EDD also uses WIA funds to support special projects that target unemployment due to natural disasters, mass layoffs, plant closings, or other events precipitating increases in the number of unemployed persons. Several of EDD' special projects target manufacturing. For example, the Welfare-to-Work Project in Silicon Valley placed 82 job-training participants in entry-level manufacturing jobs. Other special job training projects focus on the re-employment needs of laid-off workers, not the continual skills enhancement that can help an employee move up the career ladder and a business to become more competitive.

**California Community Colleges**

California community colleges provide technical accredited training/instruction to interested students enrolled in local community colleges. In FY 1999/2000, there were approximately 1.5 million student enrollments in community college[*] credit vocational and technical education classes. A total of $565 million was appropriated to support this program.[†]

Community colleges also provide non-credit and adult education instruction, including basic skills and English as a Second Language (ESL). Instruction is designed to improve literacy skills and employability for adults. In FY 1999/2000, there were approximately 341,000 student enrollments in non-credit vocational and technical education classes. Funding was approximately $279 million from the state's General Fund, local property tax revenues and student fees.

California's community college population can be grouped into five main categories (which overlap somewhat): recent high school graduates, experimenters, experienced workers seeking advancement, dislocated workers and other individuals switching occupations, and populations with special needs. Community colleges keep the following data on vocational students: course completion rates, transfer eligibility,

[*] 1,159,737 secondary students and 423,248 adult students enrolled in vocational and technical education courses during the 1998-99 program year.

[†] $505 million came from the state's General Fund, local property tax revenues and student fees, $55 million from federal Carl D. Perkins Vocational and Technical Education Act funds, and $5 million from Proposition 98 funds.

enlistment in military, attainment of certification/degree rates, and post college job placement rates and earnings. However, they do not gather data about the occupation status of the student prior to and while attending a community college.

How are these programs serving the manufacturing sector and assembly line workers? It is difficult to tell with the available data. Information is not collected to determine prior occupation of enrollees. Moreover most assembly line workers in the manufacturing sector do not fall in any of the student categories. Therefore, there is insufficient information to conclude whether California community colleges programs are serving assembly line workers or not.

Community colleges are well positioned to market specialized training programs to local employers, but the state funding formulas do not reward this type of activity. For example, in 2000-01, revenue from employer contract services totaled $18.9 million statewide, or 0.4 percent of total revenue.[5] This is not an impressive number. Twenty community college districts do not generate any funds from contract education services, suggesting minimal if any contacts with local employers. One community college noted that contract education is a break-even proposition for the school, at best.[6]

The Chancellor's Office has also established 15 Centers for Applied Competitive Technologies (CACTs) throughout the state. The mission is to assist California manufacturers to remain competitive in changing markets and global economy. They do this through seminars, workshops, and demonstration tours. The focus of these centers, however, appear to be on the highly educated workers in manufacturing and not the lower-skill assembly occupations.[*]

[*] For more information on these centers visit the following website: http://www.cact.org/.

# CONCLUSION

California's manufacturing sector has lost 126,190 jobs since 1980, after experiencing an expansion in the 1980s and a decline in the 1990s. The result is that the state's manufacturing sector employs fewer persons today than it did in 1980.

Not all manufacturing in California is in decline, however. Manufacturers of chemicals, professional equipment, printing and allied products, and textiles have increased in employment. Highly skilled, high paying occupations have also increased. The manufacturing sector currently employs 193,096 more managers, engineers, sales persons, and other professionals than it did in 1980. The headquarters, design, and sales types of jobs are increasing while manufacturing production facilities are leaving the state.

Where are the employment losses taking place? The largest losses are occurring in assembly level occupations. This includes technicians, administrative support, machinist, and other laborers. A total of 319,286 assembly jobs have been lost since 1980.

The concern in California should not be whether the manufacturing sector is going to disappear. On the contrary, it is clear that there is increasing need for highly educated persons in manufacturing. The worry is whether California can keep assembly jobs.

In this report, we have presented information on wages and salaries to see if the loss in assembly type jobs might be correlated with the cost of labor. Over a 20-year period, the average annual wage of a machinist increased by only $1,252 (an annual increase of $63 a year), while the wages of "other laborers" remained nearly level, increasing by only $64 (an annual increase of $3 a year).

This report has shown that the manufacturing wages and salaries of assembly workers have not had a significant increase in the past 20 years. If the manufacturing costs of doing business are increasing in California, then it does not seem to be because of the wages and salaries of assembly workers. Future research needs to look at other labor related costs (workers compensation, unemployment tax, health insurance cost), environmental compliance, litigation costs (liability insurance), and tax related costs (sales tax, corporate income tax, and property tax).

The state can help offset some of these other costs by assisting in worker productivity. According to employers, workforce training is crucial for business development.[7] The state can provide high quality, targeted job training for assembly workers. However, most of the training provided to workers is geared to highly educated workers. Only 15 percent of assembly line workers receive job training.

## OPTIONS

The Survey of Income and Program Participation (SIPP) suggest that assembly workers are seldom offered job training in California's manufacturing enterprises (Figure 34). Yet, job training is a critical element in increasing business productivity, and increased productivity supports higher wages and generates larger profits.

1. Employers could be offered incentives to help low-skilled workers improve their skills. The state could assist employers by creating more public-private partnerships, offering training at the work location, and minimizing the paper work involved with some of these programs. The Community Colleges might want to consider playing a larger role in creating these partnerships.

2. Employees could also be offered incentives and assistance so that they are not dependent on their employers to update their skills. This might include a training voucher, to be used at approved providers of training, either public or private.

3. Local workforce development organizations (also known as "one-stops") could fund more training programs in conjunction with employer training departments, or through employer organizations or unions. These programs could target low-wage assembly workers.

4. California community colleges, vocational schools, Workforce Investment Act One-Stop Centers, and the California's Employment Training Panel comprise California's public infrastructure for skills training. This is a very disjointed set of institutions and programs, lacking an effective continuum of services. These institutions should develop partnerships among themselves with the manufacturing sector to train assembly workers.

5. The Employment Training (ETP) was originally created to address the displacement of workers resulting from plant closures. The program has now evolved to focus on retraining incumbent workers in basic industries confronted with out-of-state competition, mostly in the manufacturing and high technology sectors. Recently ETP funds have been redirected to fund other programs, diminishing the funds available to train workers.

6. Increase the full-time-equivalent (FTE) reimbursement amount for courses in the Community College that target the manufacturing industry to cover the actual costs of providing those courses.

# ENDNOTES

[1] Richard W. Moore, Daniel R. Blake, G. Michael Phillips, and Daniel McConaughly, *Training That Works: Lessons From California's Employment Training Panel Program.* (Kalamazoo, Michigan: W.E. Upjohn for Employment Research, 2003).

[2] Ibid.

[3] Ibid.

[4] Elise Richer, Hitomi Kubo, and Abbey Frank. *All in One Stop?, The Accessibility of Work Support Programs at One-Stop Centers,* (Center for Law and Social Policy, September 2003), 1.

[5] Patrick J. Murphy, *Financing California's Community Colleges*, (San Francisco: Public Policy Institute of California, 2004), 61.

[6] Patrick J. Murphy, *Financing California's Community Colleges*, (San Francisco: Public Policy Institute of California, 2004), 62.

[7] California Budget Project, *Maximizing Returns: A Proposal for Improving the Accountability of California Investments in Economic Development*, (Sacramento: California Budget Project, June 2002).