UCLA
California Policy Options

Title
The California Economy: The Long Term Outlook

Permalink
https://escholarship.org/uc/item/75j8p51h

Author
Kimbell, Larry J

Publication Date
1997

THE LONG TERM FORECAST FOR THE CALIFORNIA ECONOMY

Larry J. Kimbell and Mary Richardson

Introduction

This chapter presents a summary of the UCLA Anderson Forecast for California and the Nation, released in September 1996. First, we cover the outlook for the main macroeconomic indicator of growth, real gross product in the two economies. The outlook calls for moderate growth by comparison with the long term history of each economy, but slightly faster growth than in the past several years. The acceleration in growth is especially noticeable in California, which suffered a severe recession in the early 1990s. The case for faster growth is made because of several factors, but most important is the prospect that technological innovations can be distributed at less cost and shorter lags because of dramatic increases in access to information stemming from the communications revolution represented by the Internet. Creative destruction attends rapid technological change, so we close this section with some unanswered policy questions relating to the stresses this change seems likely to bring.

Second, we consider the question: What industries hold promise for "good "jobs in the twenty-first century? To shed some light on this question we review the industry employment forecast that underlies the macroeconomic outlook. Good jobs offer high pay, generous health and other benefit coverage, stable tenure, and safety

for workers and the environment, and provide a good fit for the labor supply expected in the coming decades. Many of the projected job gains are in industries with low pay and poor benefits. Some of the few industries offering high pay tend to be very unstable (e.g., entertainment). Strong excess demand for a few people with select skills seems likely to persist with chronic problems finding good jobs for most people. Can policies be found that will enrich the mix of jobs available to most of the labor force?

Third, one of the most difficult among very long term problems is how to build a productive workforce that can provide adequate retirement benefits to baby boomers without taxing workers to death. There are no good and non-controversial solutions. We advocate that California should welcome immigrants now, even though this will probably worsen the near term labor market tensions, to prepare a better integrated society when the need will become more apparent than it may be today. The inter-generational conflict posed when the infamous pig finally dies in the tail of the python is certain to be very intense.

Long Term Macroeconomic Forecasts for California and the Nation

Methods Used for Long Term National Projections

To forecast long term real GDP growth for the nation, we usually have followed the basic model pioneered by Robert Solow[1] in the 1950s. This year, with the help of Rajeev Dhawan, Research Associate at the UCLA Anderson Forecast, we extended this model to incorporate some concepts developed in the "New Growth Theory," led by Paul Romer[2]. The Solow approach proceeds using four steps; the extension motivated by New Growth Theory involves the last step.

1. Project the labor force. Accept a consensus view of the demographic outlook for detailed age, sex, race and ethnicity breakdowns. Project labor force participation rates by analyzing trends for key demographic groups.
2. Project the unemployment rate. Since that the economy tends to fluctuate around the natural rate of unemployment, assume that in the long run, unemployment will be approximately six percent.
3. Project the capital stock. An initial estimate of the capital stock is updated by accumulating gross investment less depreciation. The gross investment forecast in the original Solow model, depended on an exogenous assumption about the share of real GDP devoted to investment. We use a complete, detailed breakdown of national saving and types of investment, using the WEFA Group macroeconometric model of the United States. This requires assumptions about personal saving, fiscal and monetary policy, foreign investment, and therefore an integrated account of the "demand side" is generated, in addition to the "supply side" story told by the Solow model.
4. Project an exogenous rate of technological change. In other words, project total factor productivity, or the "Solow residual," since it measures how much potential GDP grows in excess of a weighted average of capital and labor. This is the step where raw intuition is left most naked, since it asks: Will technological change grow faster or slower? The New Growth Theory extension inspired by Romer is made here, since we analyze the outlook for research and development expenditures, as one of the fundamental factors determining the discovery of new technological innovations. We also consider the costs of spreading new ideas to firms and industries beyond those than paid for the original R&D effort. Specifically, we assume that the Internet will play a significant role in reducing the world wide spread of new ideas with shorter lags and smaller costs than previously.

Methods Used for Long Term California Projections

Regional data on macroeconomic concepts are very limited; (1) the data do not cover the final demand components of gross product accounts, consequently, there are no data on capital stocks or gross investment; (2) there are no estimates of exports and imports to and from other states, and no equivalent for net foreign investment. Regional economies differ significantly from national economies conceptually as well. Investment draws from a national pool of saving, so local regional saving is less influential on local regional investment than is true for the nation. These differences lead to the following simplified Solow model for California long term forecasting:

1 Project the labor force. The demographic projections are similar to those made for the U.S., with the strategic exception that population migration responds much more to the economy in the State than the Nation. Migration is much more of a factor in the California forecast.
2. Project the unemployment rate, based on the same reasoning applied to the nation, i.e., assume full employment. Reconcile civilian employment with the outlook for industry employment, made from bottom-up projections of job growth.
3. Project real wages per employee, drawing upon the national productivity trends assumed in the national forecast.
4. Project the ratio of real Gross State Product to aggregate real wages, based on analysis of trends in the U.S. economy and historical state-national differentials.

Highlights of the UCLA Anderson Long Term Forecast for California and the Nation

The macroeconomic performance of the U.S. and California economies show strong similarities with a few strategic differences:

Real gross domestic (U.S.) or state (California) product trends from the mid-1960s to the early-1990s show a pronounced slowdown in each economy. As shown in Charts 1 and 2, we forecast that these downward trends will change into slight upward trends during the next quarter century. These trends and forecasts are depicted by fitting a second degree-time trend to the fluctuating line showing moving 5-year annual rate percent changes in annual data from 1965 to 1995 historically, and 1995 to 2020, as projections. The fitted line for each economy is drawn with a lighter line on the chart for the other economy to assist comparisons.

Chart 1
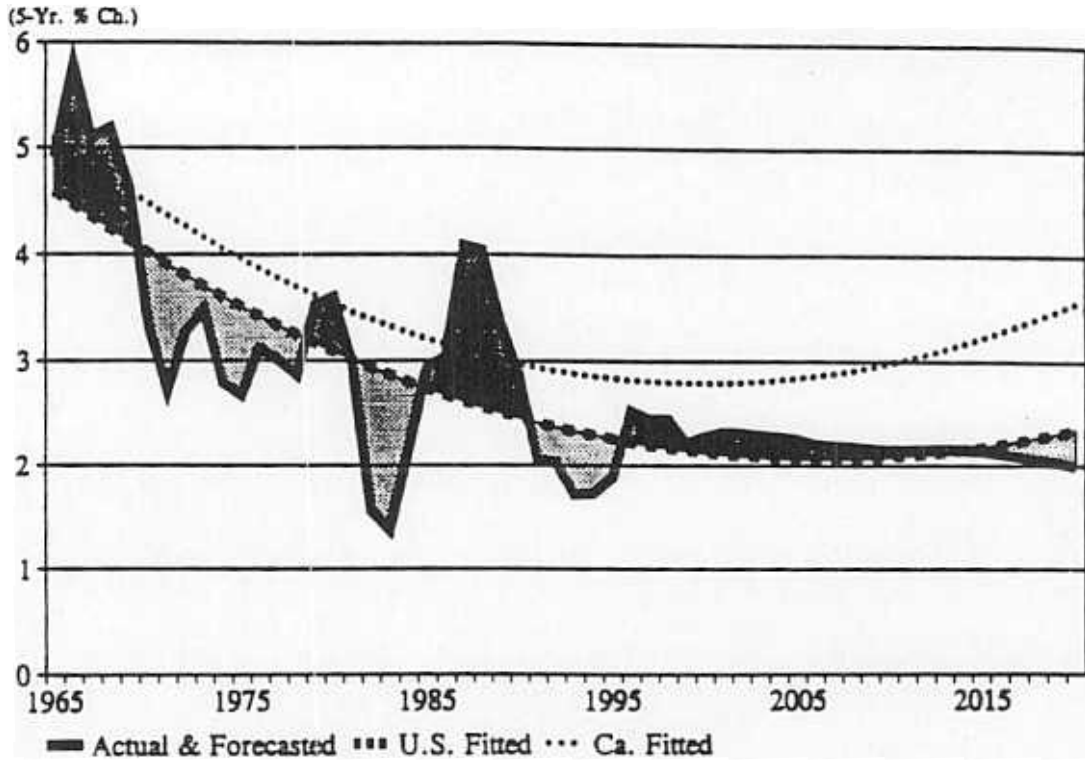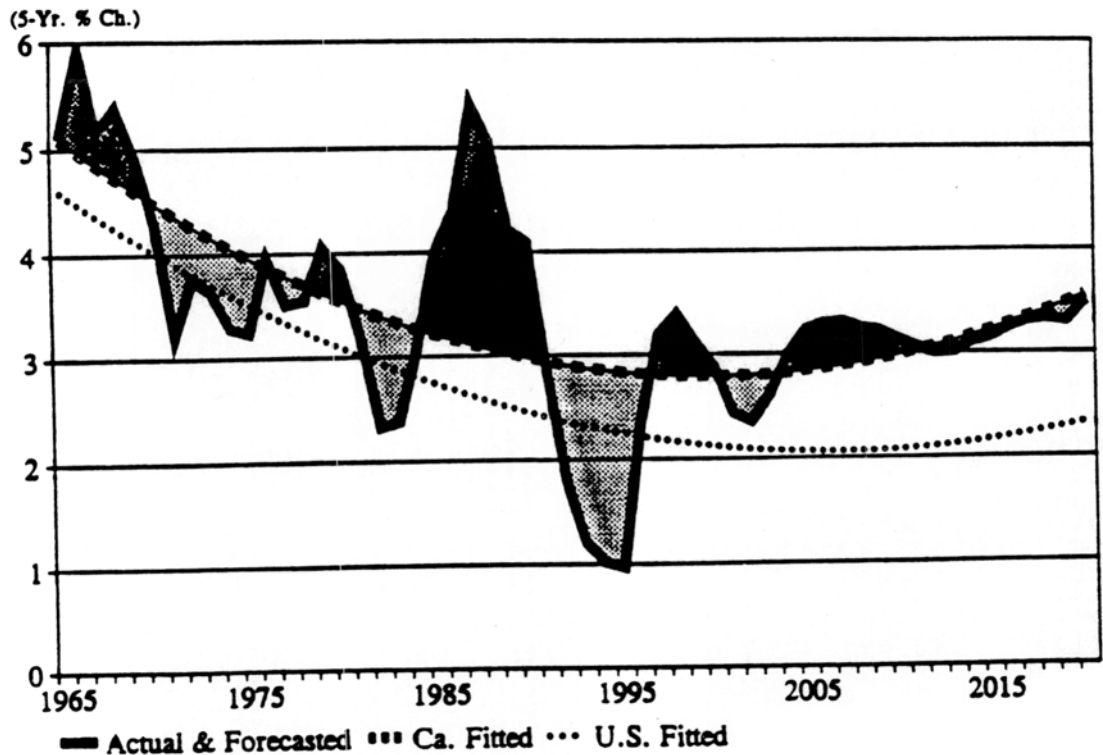## U.S. Real GDP Growth Trends
Starting to Accelerate?

(5-Yr. % Ch.)

— Actual & Forecasted **•••** U.S. Fitted **···** Ca. Fitted

Chart 2
California Real GSP Growth Trends
Starting to Accelerate?

(5-Yr. % Ch.)

— Actual & Forecasted **•••** Ca. Fitted **···** U.S. Fitted

6

California real gross state product (GSP) obviously fluctuates more than the U.S. real gross domestic product (GDP), with the widest departure being the most recent recession period. The U.S. suffered a mild and short recession from July 1990 to March 1991, typical of postwar U.S. recessions in general. California suffered a severe and long depression, the worst episode for the state since the Great Depression of the 1930s. The depression in Los Angeles, in particular, was one of the most severe regional recessions since the 1930s, worse than the decline suffered by Houston when oil prices collapsed in the mid-1980s, and worse than the job drop in Pittsburgh, when the steel industry almost disappeared in the early 1980s.

California has a clear tendency to grow faster than the U.S. From 1965 to 1995, California real GSP grew at the average annual rate of 3.4 percent, 0.5 percent faster than the 2.9 percent averaged in the U.S. The outlook calls for both economies to show a slight improvement in aggregate real gross product terms, with the acceleration noticeably faster in California. For the decade ending in year 2000, U.S. real GDP will average an annual growth rate of 2.1 percent; in the following decade, we project growth of 2.2 percent. The decade ending in year 2000 includes California's Depression of the early 1990s, so its growth will average only 1.9 percent. The following decade, this growth will accelerate to average 2.9 percent, a full percent faster than the average in the previous decade, and 0.7 percent faster than the U.S. in the first decade of the twenty-first century.

Faster Technological Change: A Case for Optimism

Paul Romer developed endogenous growth theory to explain the Solow residual. According to Romer, the reason that the aggregate production function shows increasing returns to scale, even

when micro production functions show constant returns to scale, is that research and development (R&D) investment creates positive externalities. In other words, R&D that is profitable to a single firm has added, spillover benefits not captured by this firm alone. Technical change spreads from the R&D investments done by one firm or one sector to other unintended beneficiaries. The discoveries of this original firm can be used by others without duplicating the original effort. In this way, general purpose technologies (microelectronics, electric motor) play the role of enabling technologies that affect the productivity of other downstream sectors. Zvi Griliches[3] from Harvard University has calculated that growth in per-capita R&D capital stock accounts for 31 percent of the measured technological advance (Solow residual) and 22 percent of the growth in per-capita output for the U.S. economy.

The Internet provides an example of a technology which diffused from a particular sector of single purpose users to a wider group of multipurpose users.[4] The original Internet was developed by scientists interested in distributing their research findings around the world; today the private and public sectors, and millions of individuals, use the Internet for research, advertising, practical information gathering, entertainment and socializing. This recent expansion in the use of information technology leads us to expect a faster rate of technical change in the future, based on decreasing costs of information.

Table 1 shows a summary comparison of the macroeconomic growth determinants for California and the Nation that is limited to data available for both economies but which emphasizes the Solow model factors as much as possible given the data limitations. The acceleration in real GDP for the nation is projected in spite of slowing employment growth. Each decade from the decade of the 1960s through the second decade of the twenty-first centry will show slower employment growth than the previous decade, if our forecast is realized. The same cannot be said for California, which is very likely, in our opinion, not to continue growing more slowly than the U.S., as

it has in the 1990s. The first decade of the twenty-first century is predicted to show employment growth almost twice as fast as the one percent growth anticipated for the 1990s.

The optimism about the aggregate outlook in both economies depends critically on the assumption that real wage gains will mirror better productivity gains, based on accelerating technological change. Real wages per employee in the current decade will grow only 0.4 and 0.2 percent annually in California and the U.S., respectively. Both economies will see real wage gains of 1.0 percent or higher in the coming decade, with still slightly faster growth projected for the following ten years, from 2010 to 2020.

We regard this optimism as reasonable for the base case forecast. But there is no certainty in forecasting. Keep in mind the downside risk that negligible real wage growth might occur. *Almost all policy problems we consider below will be significantly more challenging if we are too optimistic.*

Table 1. Macroeconomic Comparisons Between California and the United States

	1960-1970	1970-1980	1980-1990	1990-2000	2000-2010	2010-2020	1965-1995	1995-2020
				Average Annual Rate of Growth over Period				
Real Gross Product								
CA.	4.7	3.5	4.0	1.9	3.2	3.3	3.4	3.2
U.S.	4.1	3.1	2.9	2.1	2.2	2.1	2.9	2.2
Difference	0.6	0.4	1.1	-0.2	1.0	1.3	0.5	1.0
Nonfarm Employment								
CA.	3.6	3.7	2.4	1.0	1.9	1.7	2.6	1.8
U.S.	2.7	2.5	1.9	1.4	1.3	0.9	2.2	1.1
Difference	0.9	1.2	0.5	-0.4	0.6	0.8	0.4	0.7
Real Wage per Employee								
CA.	1.6	-0.8	0.7	0.4	1.4	1.5	0.3	1.3
U.S.	2.0	-0.1	0.4	0.2	1.0	1.1	0.4	0.9
Difference	-0.4	-0.7	0.3	0.2	0.4	0.4	-0.1	0.4
Consumption Price Deflator								
CA.	2.4	7.3	5.1	2.8	2.7	2.2	5.0	2.6
U.S.	2.4	7.1	4.7	2.9	2.7	2.2	5.0	2.5
Difference	-0.1	0.3	0.3	-0.0	0.0	-0.0	-0.0	0.1
Ratio of Personal Income to Wages & Salary Disbursements								
CA.	0.4	0.9	-0.1	0.7	0.1	-0.3	0.6	-0.1
U.S.	0.0	1.0	0.5	0.4	0.2	0.0	0.5	0.1
Difference	0.3	-0.1	-0.6	0.3	-0.1	-0.3	0.1	-0.2
Ratio of Gross Product to Personal Income								
CA.	-0.6	-0.2	0.6	-0.1	-0.3	-0.1	-0.2	-0.1
U.S.	-0.3	0.0	-0.2	-0.1	-0.3	-0.1	-0.2	-0.2
Difference	-0.3	-0.2	0.7	-0.0	-0.0	0.0	0.1	0.1
Gross Product Price Deflator								
CA.	2.6	7.3	4.7	2.8	2.5	1.9	5.0	2.4
U.S.	2.7	7.0	4.5	2.7	2.5	1.9	5.0	2.3
Difference	-0.1	0.3	0.2	0.1	0.0	0.0	-0.0	0.1

Loss of Aerospace Research and Development in California:
A Case for Pessimism

It has been estimated that the decline in the R&D sector that occurred between the mid-1960s and mid-1970s accounted for 23 percent of the slowdown in technological advance in the industrial sector and 18 percent of the drop in per-capita growth during that period.[5] With a level of R&D intensity 1.5 times that of the entire manufacturing sector, aerospace is one of the most prominent high R&D industries. The cost to California's economy of downsizing aerospace was estimated in a report done by the UCLA Anderson Forecast for Northrop-Grumman in September, 1996. Given that the share of aerospace in California's manufacturing has fallen from 19 percent, at its peak level in 1986, to less than 10 percent in 1995, the decline of aerospace had a negative effect on the overall R&D intensity of the California economy. According to the simulation conducted in this study, the decline of aerospace has lowered the income growth rate by 0.2 percent per year, which adds up to a cumulative loss of 1.8 percent over the 1986-1995 time period. This loss is approximately 15 percent of the real wage growth over this period.

A return to the pre-1990s strategic arms race and space exploration effort which fueled growth in aerospace appears unlikely, however, the remaining high-tech manufacturing industry also invests significantly in R&D. The current infusion of venture capital into new and existing businesses in the high technology area suggests an optimistic scenario for future R&D spending. The "strike it rich" mentality of the current bull market in equities has been centered importantly in new public offerings in technology-based enterprises, many of which are located in California[6].

The pattern of California's economic recovery points to less optimism for the future of R&D in the state. The manufacturing industries which are showing the highest rates of growth in terms of

employment are low technology industries in the nondurable sectors such as textiles, apparel, and lumber and wood. The R&D intensity of the low technology industrial sector is negligible compared to aerospace. While loss of high technology employment may be made up numerically by a gain in low technology sector, overall R&D intensity of the California economy will suffer as a result[7] (Lieser, T., 1996).

Policy Issues Raised by the Accelerating Technological Change

The endogenous growth model belongs with the "Schumpeterian" theories of economic growth. Technological innovations that create new entrepreneurial opportunities also destroy existing firms and industries. During a rapid transition, several people can be reasonably afraid of losing their jobs for every one job created. According to this school, technological advance is the most powerful competitive force in capitalist economies and the innovator is the most dynamic economic actor. Innovators usually develop their innovations within the R&D departments of large corporations[8]. These advances help to maintain profit rates by counteracting the tendency of increases in capital to yield diminishing returns[9] (Samuelson, 1967).

The Internet has already made billions for a few entrepreneurs in California and a few select places in the world. What policy choices might spread the wealth to a wider and more diverse group of beneficiaries? The demographic outlook calls for a significant increase in the labor force participation rate of females aged 45-64 in the next two decades, reflecting a presumption that baby boomers will continue longer than their parents. Is this the ideal labor supply for an industry emphasizing long hours, high risk taking and high mobility between jobs? Can training programs match sources of larger labor supply with the narrow range of highly technical skills where demand

is exploding? Will existing educational institutions be able to adapt quickly? Is there a risk if many institutions rush to get into training for a shortage that may be brief? The Internet seems more likely to worsen the widening income gap between high and low wage earners, at least in the next decade.

The Search for Good Jobs in California

Next, we consider the question: What industries hold promise for "good "jobs in the twenty-first century? To shed some light on this question we review the industry employment forecast that underlies the macroeconomic outlook discussed in the previous section.

It is easier to defend desirable characteristics of jobs than provide an operational definition. Good jobs offer high pay, generous health and other benefit coverage, stable tenure, and safety for workers and the environment, and provide a good fit for the labor supply expected in the coming decades. Furthermore, the only dimension we actually forecast is the average wage per employee by broad industries. But our projections clear on this dimension – the trend in industry mix is quite adverse to the outlook for high wage jobs. Two industries dominate the projected change in mix; manufacturing, a relatively high wage industry, will decline in importance. Services, slightly below the average nonfarm wage, will rise in share. From 1996 to 2020, we project that the fraction of nonfarm jobs in manufacturing will fall from 14 percent to 9 percent. Services will rise from 30 percent to 40 percent.

Although some sectors within services such as motion pictures, pay wages as high as leading sectors of manufacturing, such as aerospace, the jobs are not as stable and the skill mix does not match those being released from manufacturing. Service sector employment is marked by wide wage dispersion, with a low average wage. For example, although average wages in California's motion picture industry exceed the average wage of aerospace workers by a substantial margin, more than 50 percent of workers in the motion picture industry earn a wage that is approximately one-half of the median wage in the aerospace sector.[10] Another sector within the services industry is high paying but has recently become less stable than before, viz., the health care industry. This is a large sector, employing almost 900 thousand people in 1996, approximately half the total employment in all of manufacturing. By 2020, we project that health services will provide jobs to almost 1.8 million, almost the same number as the manufacturing sector, which shows little change. Very intense pressures to hold down costs have made this sector more competitive, but at the expense of reducing the number of stable high paying jobs, here and in the nation more widely.

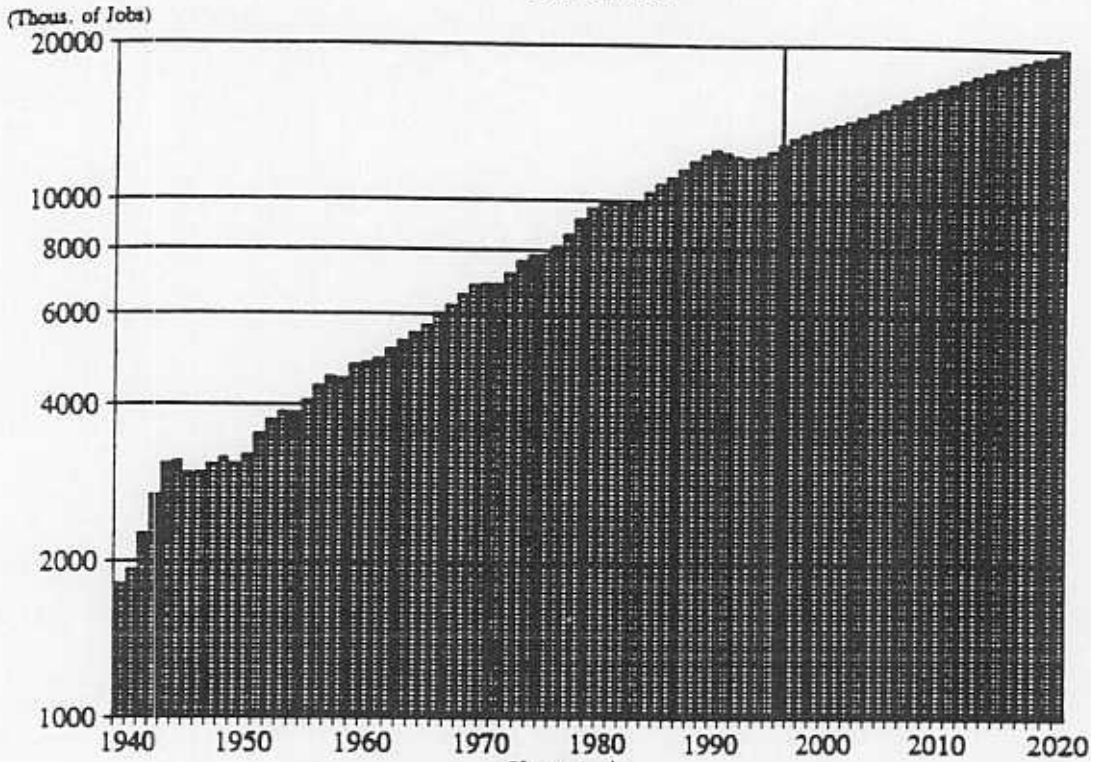Chart 3

Nonfarm Employment in California
1939 to 2020

(Thous. of Jobs)

Chart 4
Manufacturing Employment in California
1939 to 2020

(Thous. of Jobs)
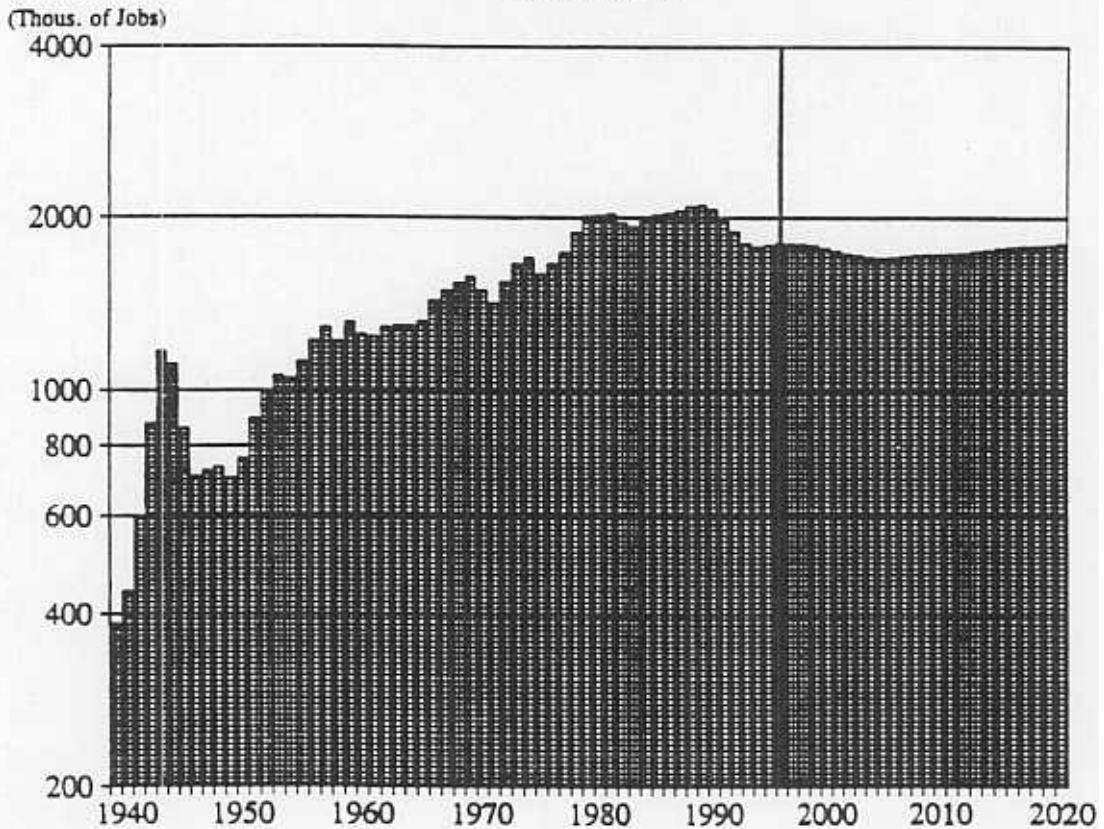
Chart 5.

Mfg. Share of California Nonfarm Jobs

1943

38 Mfg.

62 Other

1965

23 Mfg.

77 Other

1995

14 Mfg.

86 Other

2020

9 Mfg.

91 Other
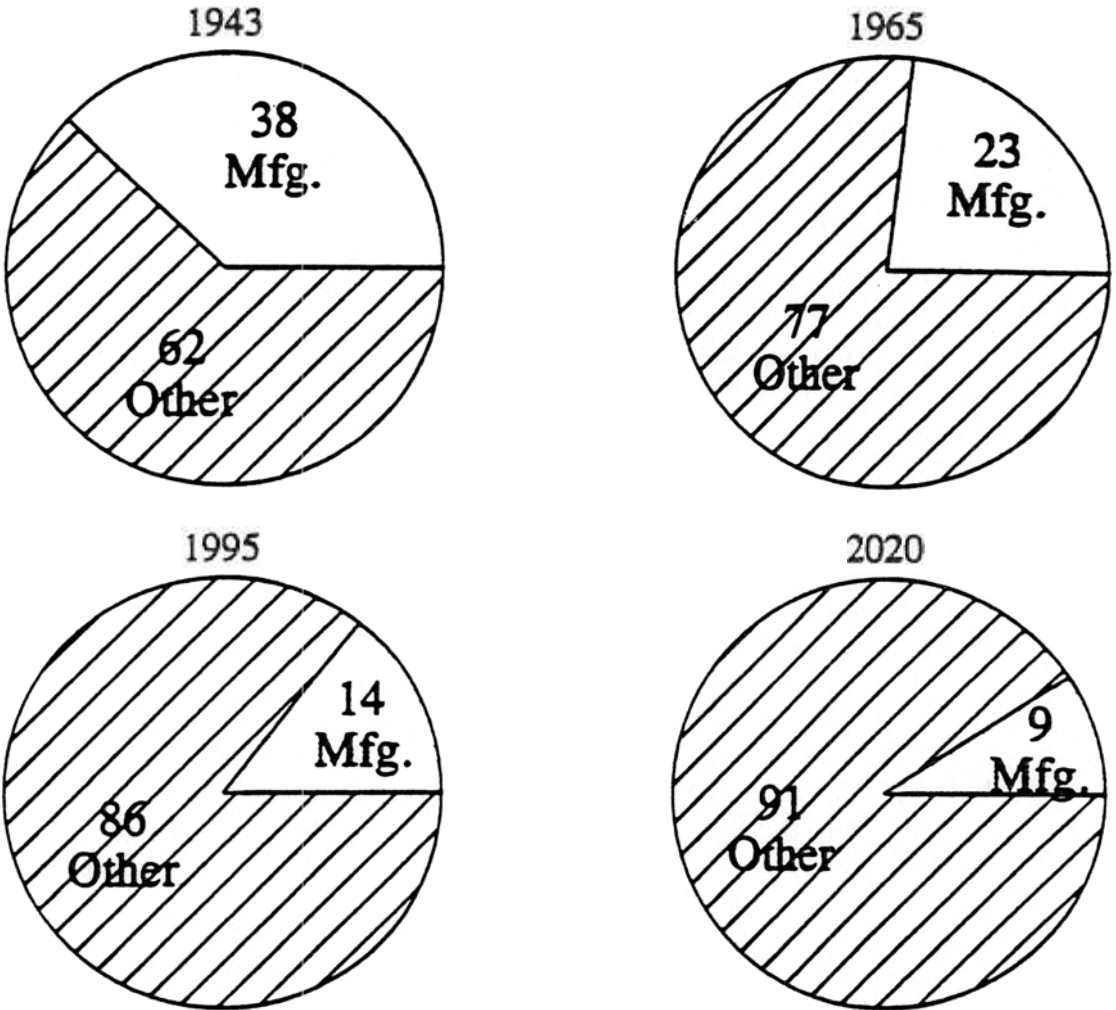
Chart 6

Real Wage Growth over 5 Year Periods
In the United States and California

(Thous. of Jobs)

— United States ••• California
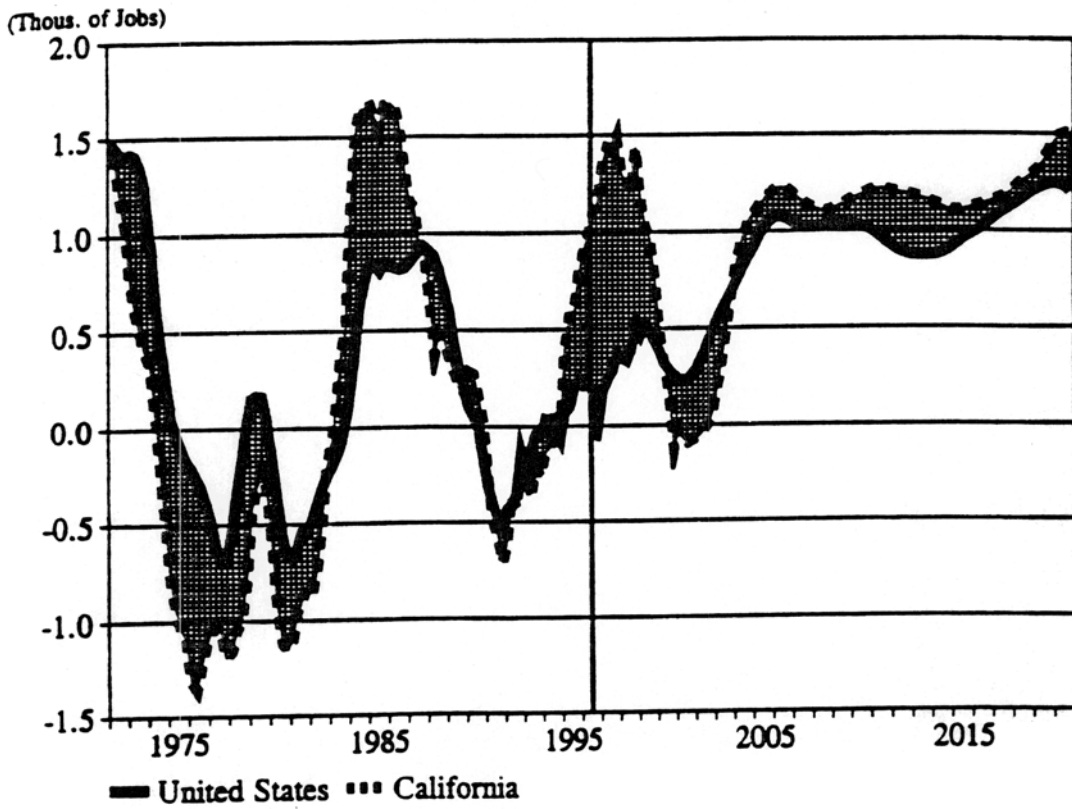
Chart 7

Employment in Apparel Mfg. and
Aircraft & Parts Mfg. in California

(Thous. of Jobs)

— Apparel ••• Aircraft & Parts
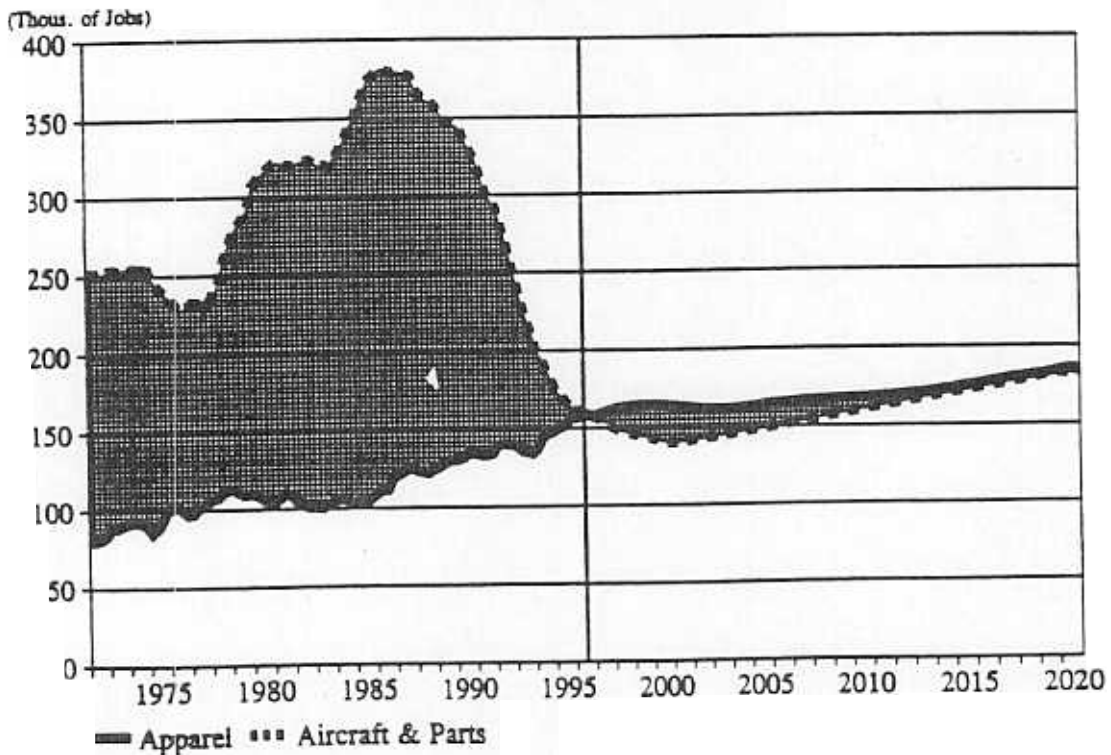
Chart 8
Employment in Motion Pictures and
Aircraft Mfg. Industries in California

- Motion Pictures ••• Aircraft & Parts Mfg.
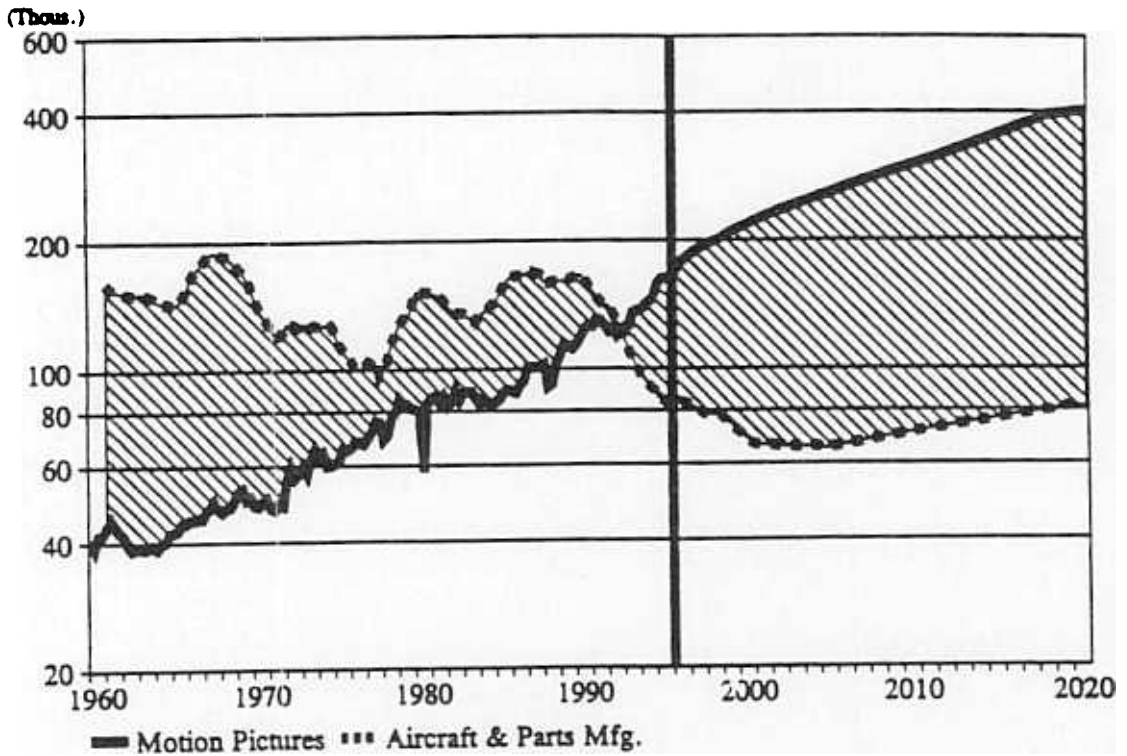
Chart 9

Employment in Business Services and
Durable Good Mfg. Industries in California

- Business Services ••• Durable Good Mfg.

18
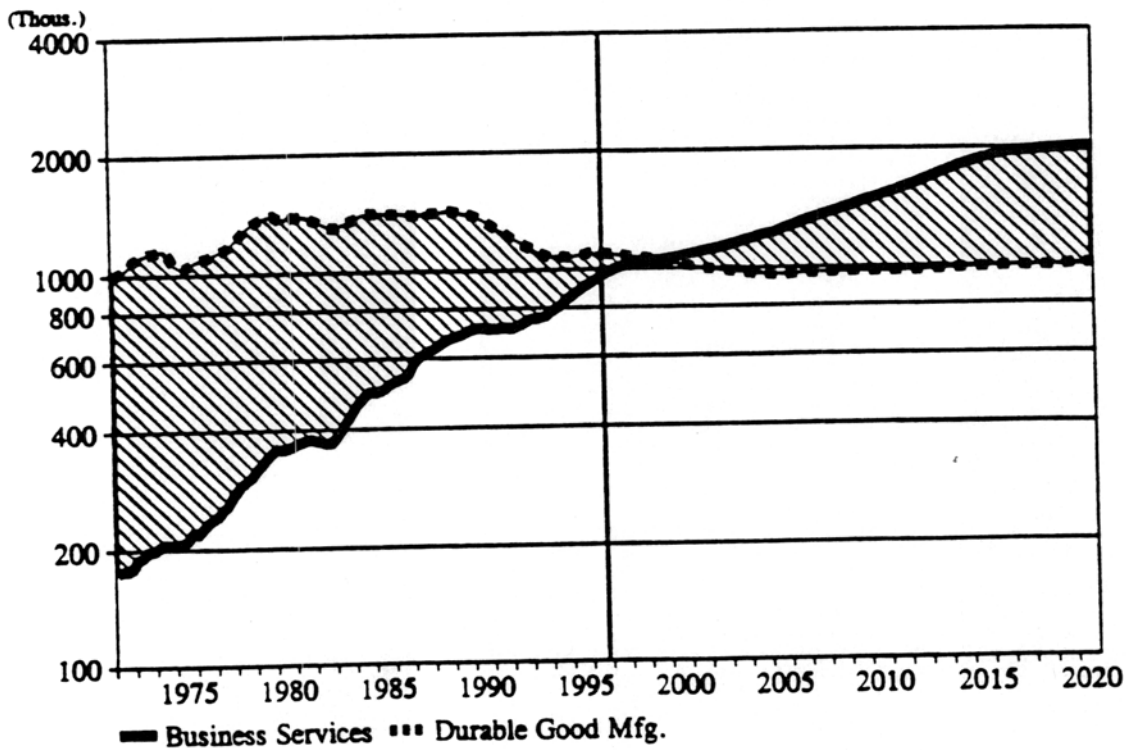
_Chart 10
Real Personal Income and Taxable Sales
(Per Capita) in California

(Thou. 92 $)

■ Real Wage per Employee
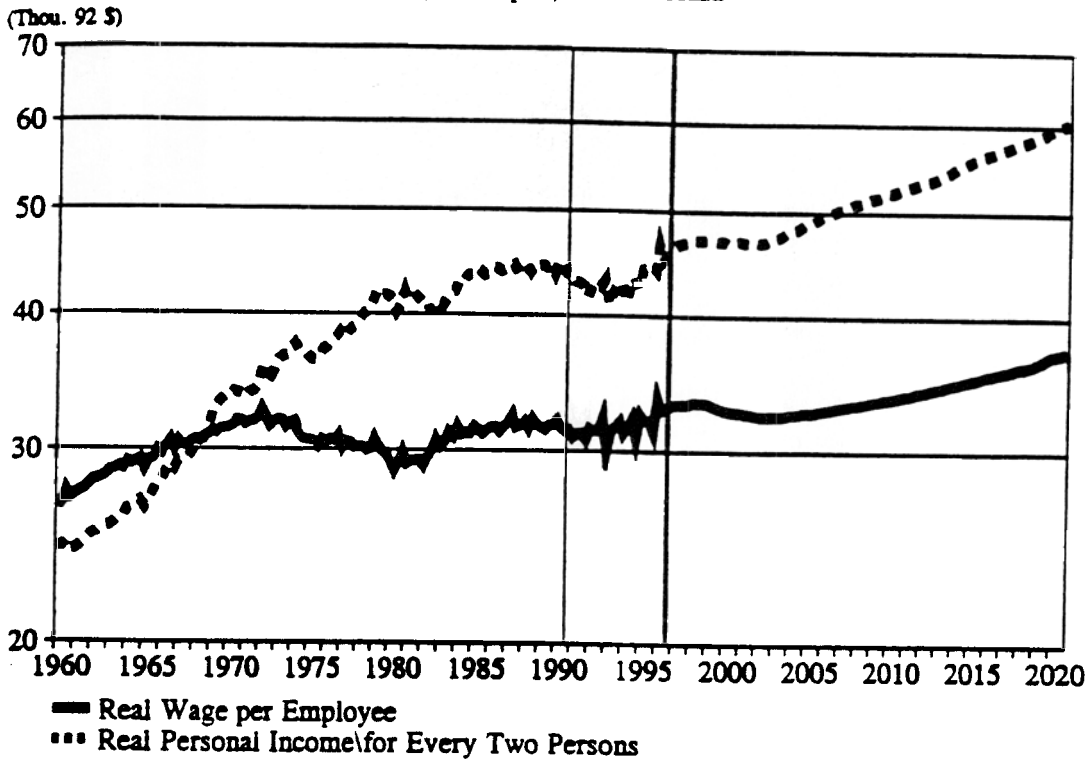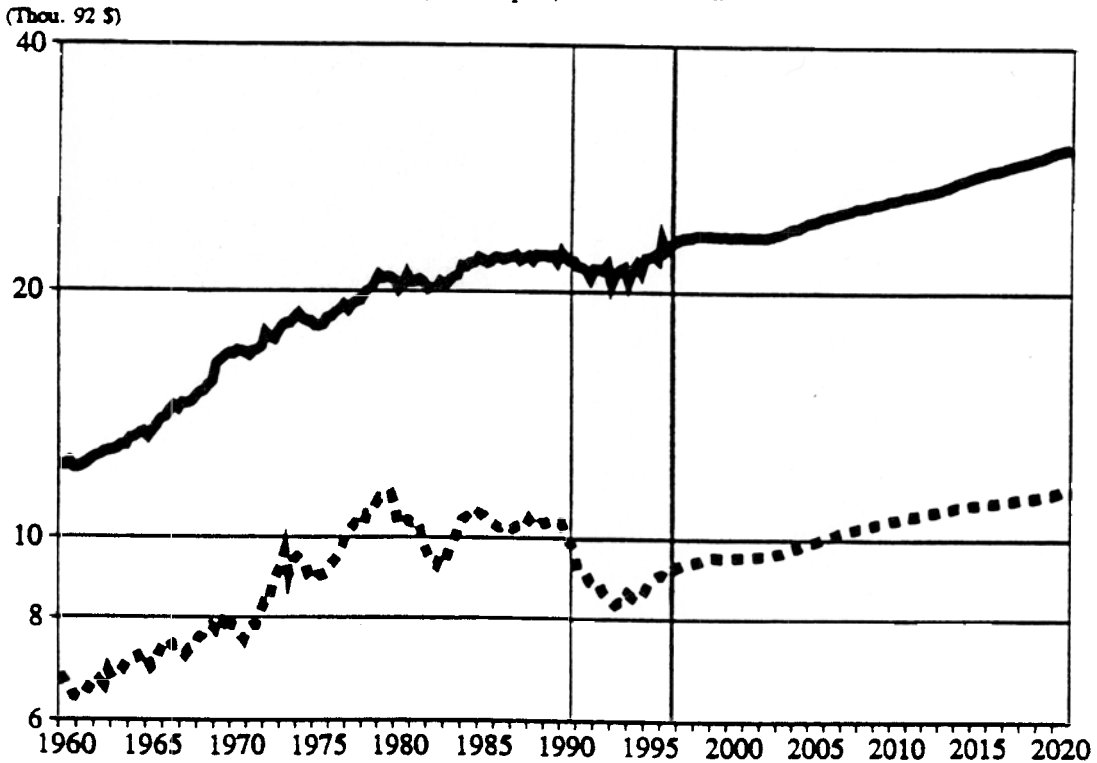••• Real Personal Income\for Every Two Persons

Chart 11

Real Personal Income and Taxable Sales
(Per Capita) in California

(Thou. 92 $)

19

A UCLA Anderson Forecast study examined growth prospects for jobs in Los Angeles County.[11] This study compared earnings in occupations which were projected to contribute most to job growth in Los Angeles between 1995 and 2005, with occupations which were projected to show either the highest amount of job losses or the slowest gains. Two trends emerged which contribute to wage dispersion and wage stagnation in southern California. First, the "high growth" occupations displayed a bipolar educational profile, containing jobs for well-educated professional/technical workers as well as less educated service workers. Second, despite the higher educational level of people in the "high growth" occupations, their average wages were lower than the wages earned by people in the "no growth/low growth" occupations.

A report on income distribution in California prepared by the Public Policy Institute of California[12] explores the issue of wage dispersion using five measures of inequality, 26 definitions of income and two data series. The authors conclude that until the late 1980s, the trend in California was remarkably similar to the national trend, but, since then inequality has risen much faster in the state than in the nation. This change has held for adjusted household incomes and for male earnings. The recent divergence in inequality trends between California and the nation does not arise from faster growth at the top in California. Instead, the greater increase in the state results from a precipitous drop in income at the mid-to-lowest levels of the distribution. The inequality gap between the nation and California began to widen as early as 1987, even before the recent deep recession. Research on causes of inequality at the national level is inconclusive, but suggests that the following factors are involved: import competition, immigration, decline in unionization, and technological change.

Should Immigrants to California Be Welcomed Even Before Baby Boomers Retire?

One of the most important policy issues facing California over the next half century is how to prepare for the large number of baby boomers who will retire and die during this period (recall that the oldest boomers are now 50 years old, so those who survive will be 100 in 50 more years.) Before then, they certainly will need more health care than they do now. For years we will be dependent on a young and probably quite alienated population of workers. Unless current trends are changed those workers will be taxed to death unless serious changes are made soon.

Although the same baby boom phenomena took place in California, this would not be a major problem for us to solve if we were alone in creating the hugh bulge; one state can attract or repel interstate migrants much more readily than the nation as a whole. The bulge in the population distribution, when shown moving through the years, is called "the pig in the python" because of the seemingly inexorable movement to older ages as time goes by. This age cohort is now enjoying some of the best years of their working lives. They have all matured, since the youngest are now 34, so rowdy teenage training and control problems are over. None is elderly, since the oldest is 50. These halcyon days will last until about 2015, when massive numbers of boomers (those who survive), will start reaching age 65, the "normal retirement" age. Indeed, many very respected policy analysts call this process the "fate" of the boomers, since it seems inevitable. Social security is alleged to be threatened with bankruptcy, because current tax rates applied to a much smaller working population do not project nearly enough revenue to support the rapidly rising health care costs of these cohorts. But nothing is inevitable and our purpose is to get policy makers focused on some very difficult choices long before the train wreck has become virtually inevitable.

The problem is very familiar: many more people were born in the United States from 1947 through 1962 than in earlier or later decades. Some familiar demographic projections, presented in Table 2, will remind us of the magnitude of the burden of caring for this aging population. Between 2000 and 2030 the U.S. population aged 16-64 will grow, according to U.S. Census "middle" projections, by 15 percent, from 177 million to 203.5 million. During these thirty years, the population 65+ will grow 100 percent, from 34.7 million to 69.4 million. The dependency ratio of elderly to working age population will therefore rise 74 percent. According to projections by the Health Care Financing Administration, health care costs, already 14 percent of GDP, will rise to 30 percent unless major policy changes are made. No option is pleasant.

1. We can cut social security benefits drastically, undoubtedly rationing health care for all ages, but especially near the end of life.
2. We could raise social security taxes on the working population, but taxing workers (and employers) 30 percent of the wages paid, then also asking them to pay income and other taxes for defense, etc., is a recipe for intense conflict if not inter-generational war. Reconsider now the long term macroeconomic projections discussed in the first section above. Even with optimistic assumptions we are talking about a partial solution. How easy will it be to get baby boomers to save at a higher rate before they retire? Should we count on finding policies to raise productivity far faster than assumed above? This would be a highly desirable goal, but the search for the explanation for the Asian growth miracle has frustrated the best minds in economics, and it would be dangerous to "...bet the ranch" on this possibility.
3. These are the commonly considered options. We could also attack the older-population dependency ratio itself, by policies that lower the number of people in the numerator or raise the number of people in the denominator. Fewer baby boomers living in the U.S. from 2015 to 2050 means more than expected must die or emigrate abroad.

We still have time to raise more workers. If we aggressively encourage procreation, and succeed in raising the birth rate overnight, we can create the second coming of the baby boomers, setting the stage of another similar problem 80 year or so from now. Finally, the only sensible solution to us, we can encourage a large enough young working age population to immigrate to the United States. This has been forcefuly advocated by David Hayes-Bautista (1994), inter alia.

How many people do we need to die or to emigrate, to give birth to or to immigrate? The arithmetic is sobering. Column 2 in Table 2 shows how few elderly would be needed to keep the dependency ratio constant at its 2000 year level, or equivalently, how many are allowed if only 15 percent growth is realized. The answer is 29.5 million fewer than the Census projects. If almost 30 million baby boomers die much younger than expected or emigrate to foreign countries, this could happen. Would you like to run for the Presidency with this as a formal policy objective of your administration? Column 3 shows the number of working age population that we need to give birth to, or to migrate to the United States during the next three decades to make the population 16-64 grow 100 percent. This calculation yields 150 million more young workers than the Census projects. Is this option any more palatable ? No.

Table 2. Three U.S. Population Projections, 2000 to 2030

	Population in Year				percent Change 2000-2030		
Scenario #		(1)	(2)	(3)	(1)	(2)	(3)
		Census Proj.	Fewer 65+	More 16-64	Census Proj.	Fewer 65+	More 16-64
Age	2000	2030	2030	2030			
16-64	177.0	203.5	203.5	353.8	15	15	100
65+	34.7	69.4	39.9	69.4	100	15	100
Total	274.6	346.9	317.4	497.2	26	16	81
Ratio, 65+ to 1	0.20	0.34	0.20	0.20	74	0	0

What about the income distribution problem mentioned above. Will encouraging immigration widen the gap for native born Americans? This is clearly a perceived threat, evidenced in anti-immigrant votes in California recently. The decline in earnings at the bottom of the wage structure is blamed on immigration, especially Latino immigration. In 1970 Latinos made up only 14 percent of Southern California, by 1996 Latinos constituted 38 percent of the five-county Southern California area[13]. More than half of Latinos in Los Angeles County in 1990 were immigrants, predominantly Mexican immigrants.[14] Seventy percent of adult immigrant Latinos in Los Angeles County have not graduated from high school.[15] Notice that the low educational level of recent Latino immigrants could account for part of the drop in earnings at the bottom of the earnings distribution even if immigration had absolutely no impact on the wages of domestic workers or, more likely the wages of previous immigrants. Adding workers at the lower end of the wage distribution widens the gap by definition.

Although the research in this area reports mixed findings, several recent studies which analyzed the earnings of local Latino immigrants show evidence of upward mobility. Dowell Myers.[16] makes the point that immigrant experience is better represented by looking at the upward trajectories of cohorts than by trends in the aggregate.

Although California could face an easier burden supporting retired boomers than the United States, because of our younger population and previous migrations, we can still lead the nation in more intelligent policies for the future. We emphasize that low earnings of recent Latino immigrants are less of a perceived threat if one adopts a long time horizon, looking out 30 to 50 years. Low earnings have characterized recent immigrants for decades, and may represent a transitional phase in the assimilation experience, with second and third generations showing rapid increases in earnings as education and integration takes place. *We need to welcome young*

workers to immigrate now so that education, particularly English language skill, acculturation, and socialization, can be more efficient and complete than if we wait until later. Policy leaders who do not join us in this recommendation are challenged to explain what other alternative solutions have more appeal to them.

Bolton, N., "Aging and Dependency, Part Two", *The UCLA Business Forecast for The Nation and California*, September 1995.

Bolton, N., "Aging and Dependency in California, 1990 to 2030", *The UCLA Business Forecast for The Nation and California*, June 1995.

Grilliches, Zvi, "The Search for R&D Spillovers", *Scandinavian Journal of Economics* v 94 (supplement), 1992.

Hayes-Bautista, D.E., Schink, W.O., and Rodriguez, G., *Latino Immigrants in Los Angeles: A Portrait from The 1990 Census*, Alta California Policy Research Center, 1994.

Kimbell, L. and Dhawan, R., "An Optimistic Long-term Forecast", *The UCLA Business Forecast for The Nation and California*, September 1996.

Lieser, T., "The California Long-Term Outlook: Projections to 2010", *The UCLA Business Forecast for The Nation and California*, September 1996.

Mishel, L. and Bernstein, J., "Declining Wages for High School and College Graduates: Pay and Benefits Trends by Education, Gender, Occupation, and State, 1979-1991", Economic Policy Institute Briefing Paper, 1991.

Myers, D., "The Changing Immigrants of Southern California", First Report from the Research Project, California Immigration and the American Dream: Integration and Advancement of The New Arrivals, School of Urban and Regional Planning, University of Southern California, October 1995.

Reed, D., Haber, M.G., and Mameesh, L., *The Distribution of Income in California*, Public Policy Institute of California, San Francisco, July 1996.

Rodriguez, Gregory, "The Emerging Latino Middle Class", Pepperdine University's Institute for Public Policy, October 1996.

Romer, P.M., "Endogenous Technological Change", *Journal of Political Economy* 98, 1990.

Romer, P.M., "Increasing Returns and Long Run Growth", *Journal of Political Economy* 94, 1986.

Samuelson, P., *Economics*, McGraw-Hill, New York 1967.

Schumpeter, J.S., *Capitalism, Socialism and Democracy*, Harper and Row, New York 1975.

Scott, A., *From Silicon Valley to Hollywood: Growth and Development of the Multimedia Industry in California*, The Lewis Center for Regional Policy Studies, School of Public Policy and Social Research, UCLA, Working Paper No. 13, November 1995.

Storper, M. and Walker, R., *The Capitalist Imperative: Territory, Technology and Industrial Growth*, Basil Blackwell, New York, 1989.

Solow, R., "A Contribution to the Theory of Economic Growth", *Quarterly Journal of Economics* 70(1), February 1956.

UCLA-Anderson Business Forecasting Project, "An Analysis of the Impact of Aerospace Industry Downsizing on California's Economy" prepared for Northrop-Grumman Corporation, September 5, 1996.

UCLA-Anderson Business Forecasting Project, "Los Angeles City and County Employment and Occupation Trends: 1995 to 2005", A Report to the Private Industry Council of Los Angeles City, November 28, 1995.

[1] Solow, R., "A Contribution to the Theory of Economic Growth", *Quarterly Journal of Economics* 70(1), February 1956.

[2] Romer, P.M., "Endogenous Technological Change", *Journal of Political Economy* 98, 1990. Romer, P.M., "Increasing Returns and Long Run Growth", *Journal of Political Economy* 94, 1986.

[3] Grilliches, Zvi, "The Search for R&D Spillovers", *Scandinavian Journal of Economics* v 94 (supplement), 1992.

[4] As an example of how the Internet has widen potential access to information, we mention some of our recent work at the UCLA Anderson Forecast, led by Stephen Day Cauley. We have implemented a model for estimating the value of each specific home in California, based on the specific characteristics of that home, and millions of recent real estate transactions. Using the Internet, this information could soon be supplied, virtually free, to millions of home owners.

[5] UCLA-Anderson Business Forecasting Project, "An Analysis of the Impact of Aerospace Industry Downsizing on California's Economy" prepared for Northrop-Grumman Corporation, September 5, 1996.

[6] Lieser, T., "The California Long-Term Outlook: Projections to 2010", *The UCLA Business Forecast for The Nation and California*, September 1996.

[7] Lieser, T., "The California Long-Term Outlook: Projections to 2010", *The UCLA Business Forecast for The Nation and California*, September 1996.

[8] Schumpeter, J.S., *Capitalism, Socialism and Democracy*, Harper and Row, New York 1975.

[9] Samuelson, P., *Economics*, McGraw-Hill, New York 1967.

[10] UCLA-Anderson Business Forecasting Project, "An Analysis of the Impact of Aerospace Industry Downsizing on California's Economy" prepared for Northrop-Grumman Corporation, September 5, 1996.

[11] UCLA-Anderson Business Forecasting Project, "Los Angeles City and County Employment and Occupation Trends: 1995 to 2005", A Report to the Private Industry Council of Los Angeles City, November 28, 1995.

[12] Reed, D., Haber, M.G., and Mameesh, L., *The Distribution of Income in California*, Public Policy Institute of California, San Francisco, July 1996.

[13]Rodriguez, Gregory, "The Emerging Latino Middle Class", Pepperdine University's Institute for Public Policy, October 1996.

[14] Hayes-Bautista, D.E., Schink, W.O., and Rodriguez, G., *Latino Immigrants in Los Angeles: A Portrait from The 1990 Census*, Alta California Policy Research Center, 1994.
[15]Hayes-Bautista, D.E., Schink, W.O., and Rodriguez, G., *Latino Immigrants in Los Angeles: A Portrait from The 1990 Census*, Alta California Policy Research Center, 1994.

[16] Myers, D., "The Changing Immigrants of Southern California", First Report from the Research Project, California Immigration and the American Dream: Integration and Advancement of The New Arrivals, School of Urban and Regional Planning, University of Southern California, October 1995.