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JOBS AND WAGES IN CALIFORNIA OVER THE 2000-2005 PERIOD

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Executive Summary

This study uses household survey data and payroll data through June of 2005 to evaluate changes in employment, wages and composition of jobs in California.

The key findings are:

- 1. Employment grew in California, but the labor market remains slack.** California added 300,000 jobs between June 2004 and June 2005, a marked uptick from the previous two years. But 2% fewer working-age Californians were employed in the first half of 2005 as compared to the first half of 2001, showing remaining slackness in the job market. In the United States as a whole, the sizeable job growth notwithstanding, there is a 2% gap in the employment rate as well.
- 2. In California, real wages grew until 2003, but have fallen since.** Adjusted for inflation, the average wage fell by 0.7% between the first halves of 2004 and 2005. This decline comes on top of a 0.5% decline between the first halves of 2003 and 2004. Wages also fell in the United States as a whole by 0.5% between first halves of 2004 and 2005.
- 3. Increases in the California minimum wage in 2001 and 2002 helped low-end workers, but those gains are being eroded by inflation.** The bottom third of the U.S. workforce experienced wage declines for three years in a row. In contrast, the bottom third in California saw an increase in purchasing power between 2001 and 2003. However, these gains were partly lost over the past two years as the state minimum wage has stayed at \$6.75 per hour despite inflation.

4. In California, real wages within job categories declined between the first halves of 2003 and 2005. The ongoing slack in the labor market—as evidenced by a low employment-to-population rate for working-age adults—means employers face little incentive to raise pay.

5. Job categories that were growing between 2004 and 2005 paid \$2.50 less in California than ones that were shrinking. California saw growth in higher-wage jobs and a reduction in low-paying jobs early in the recovery from 2002-2004. But those trends have been reversed in the past year, with a net growth of service and sales jobs in the food service, retail and accommodation industries that pay under \$12 an hour combined with a net loss of higher-paying professional and managerial jobs in high-end business services.

6. The housing boom has played a crucial role in this recovery—a cause for concern. Net new jobs in construction and real estate accounted for 21% of all jobs added by California's growing job categories in the past three years, but just 14% throughout the country. Growth in construction and real estate was particularly important for middle-paying jobs in California, accounting for 31% of added jobs in this category. Both jobs and wages could face problems if there are significant price corrections in California's housing market.

1 Introduction

We are in the third year of the economic recovery following the 2001 recession. Growth in GDP has been robust, and real GDP rose by 8% between 2002 and 2004. Pre-tax profit growth has been spectacular, rising by 30% in real terms during the same period.¹ However, employment growth and wages have fared less well in the nation as a whole and in California in particular. To understand how the recovery is being felt by the workforce, I use household survey data through June of 2005 (the most recent available at the time of writing) to quantify changes in the average wage, the distribution of wages, and the composition of growing and shrinking industry/occupation groupings in the 2001-2005 period.

This report uses both the payroll-based Current Employment Statistics (CES) and the household-level Current Population Survey (CPS). I use CES mostly for measuring aggregate job growth, and the CPS for most other issues. Although less reliable than the payroll-based CES in terms of overall employment, the CPS allows us to compute wages and employment by detailed industry and occupational classification and by segments of the workforce at the state level.

For looking at job composition, I constructed “job cells” composed of 50 industries and 3 occupational aggregates. For actual industry and occupation names, as well as a discussion of the CPS, see Appendix A.

The structure of the report is as follows. The first section reports job growth in the United States and California, in terms of both total jobs created and the slackness of the labor market. The second section reports trends in average wages as well as wages for the top, middle and bottom thirds of the workforce. The second section is on job composition, where I estimate *net* employment growth at job categories paying high, middle and low wages. The final section looks more deeply at the issue of growth in particular industries, with a special emphasis on the role the real estate boom may have played in job growth and composition.

¹ Author's analysis using Bureau of Economic Analysis data. (<http://www.bea.doc.gov/bea/newsrelarchive/2005/gdp105f.htm>)

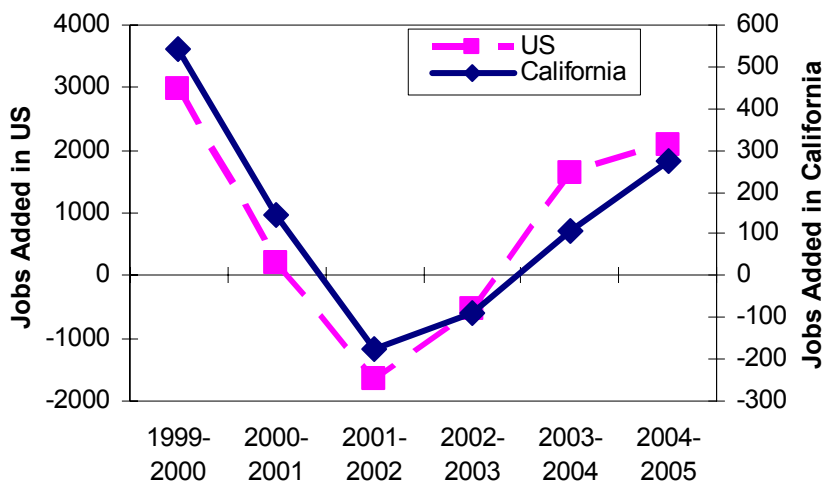
Overall, this study finds the following:

- 1. Employment grew in California, but the labor market remains slack.** California added 300,000 jobs between June 2004 and June 2005, a marked uptick from the previous two years. But 2% fewer working-age Californians were employed in the first half of 2005 as compared to the first half of 2001, showing remaining slackness in the job market. In the United States as a whole, the sizeable job growth notwithstanding, there is a 2% gap in the employment rate as well.
- 2. In California, real wages grew until 2003, but have fallen since.** Adjusted for inflation, the average wage fell by 0.7% between the first halves of 2004 and 2005. This decline comes on top of a 0.5% decline between the first halves of 2003 and 2004. Wages also fell in the United States as a whole by 0.5% between first halves of 2004 and 2005.
- 3. Increases in the California minimum wage in 2001 and 2002 helped low-end workers, but those gains are being eroded by inflation.** The bottom third of the U.S. workforce experienced wage declines for three years in a row. In contrast, the bottom third in California saw an increase in purchasing power between 2001 and 2003. However, these gains were partly lost over the past two years as the state minimum wage has stayed at \$6.75 per hour despite inflation.
- 4. In California, real wages within job categories declined between the first halves of 2003 and 2005.** The ongoing slack in the labor market—as evidenced by a low employment-to-population rate for working-age adults—means employers face little incentive to raise pay.
- 5. Job categories that were growing between 2004 and 2005 paid \$2.50 less in California than ones that were shrinking.** California saw growth in higher-wage jobs and a reduction in low-paying jobs early in the recovery from 2002-2004. But those trends have been reversed in the past year, with a net growth of service and sales jobs in the food service, retail and accommodation industries that pay under \$12 an hour combined with a net loss of higher-paying professional and managerial jobs in high-end business services.
- 6. The housing boom has played a crucial role in this recovery—a cause for concern.** Net new jobs in construction and real estate accounted for 21% of all jobs added by California's growing job categories in the past three years, but just 14% throughout the country. Growth in construction and real estate was particularly important for middle-paying jobs in California, accounting for 31% of added jobs in this category. Both jobs and wages could face problems if there are significant price corrections in California's housing market.

2 What is happening with Job Growth?

Job growth picked up in California over 2004 and 2005, as shown in Figure 1. Unlike the rest of the analysis, this figure uses payroll-based Current Employment Statistics, which is considered the most accurate for looking at the *number* of new jobs created overall.

Figure 1: June to June Job Additions using Payroll Data (CES)

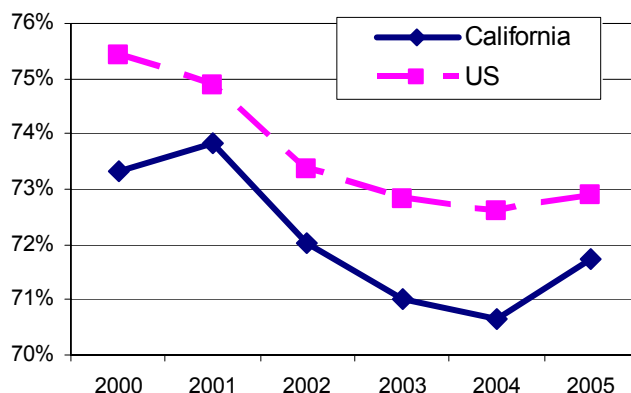


Sources: (1) Current Employment Statistics, June 1999-June 2005, measuring non-farm payroll employment

Between June of 2004 and June of 2005, the state added nearly 300,000 jobs, a marked uptick from the year past. The growth in California occurred with a slight lag compared to the United States as a whole, although the overall dynamic has been similar.

However, the job growth has yet to erase the gap between the number of people who could be working and the number of jobs actually available. To assess this slackness in the labor market, I use the employment ratio—the fraction of working-age (18-65) population that is actually working. This figure is preferred to the unemployment rate, as the latter does not capture discouraged job searchers, who would either re-enter or enter the labor market if jobs were easier to find.

Figure 2: Employment Rate of Working-Age Adults



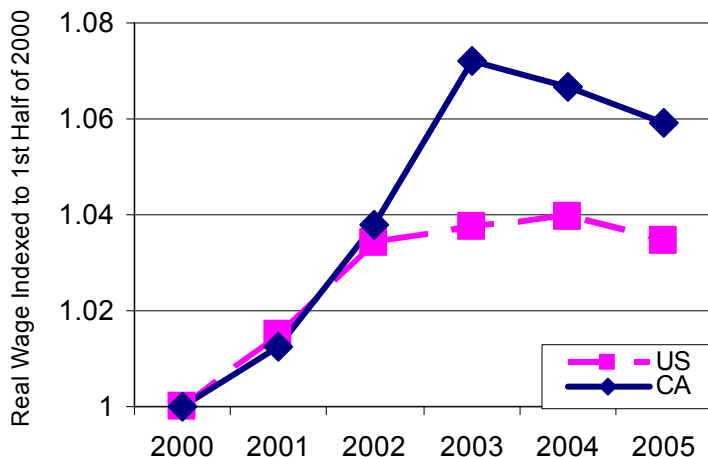
Sources: (1) Current Population Survey, Jan. through June of 2000 to 2005, for all non-elderly adults (18-65 years of age)

Figure 2, like most of the report, is by necessity based on the household-level Current Population Survey. Here we find that only between the first halves of 2004 and 2005 did job growth exceed the growth in working-age

population in both California and the nation since the year 2000. Even with the recent job growth, there has been an overall drop in the rate of employment, with 2% fewer working-age adults employed in the first half of 2005 than in the first half of 2001, again in both state and nation. The persistent slackness in the labor market means that employers can easily tap into a pool of potential workers, and so do not feel pressure to raise wages substantially to attract and retain workers, as can be seen in the wage data below.

3 Wage growth over the recession and recovery

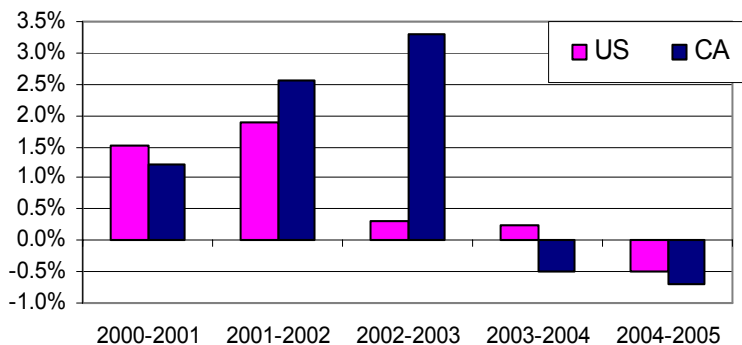
Figure 3: Real Wages Compared to 2000, US and California



Sources: (1) Current Population Survey, Jan. through June of 2000 to 2005, for all non-elderly adults

Figure 3 shows the real wages during the first half of each year, indexed to 2000. During the recovery (2002 onwards), we see that wages rose and then fell. Figure 4 reports the growth in real wages between the first halves of each year.

Figure 4: Annual Real Wage Growth in the United States and California

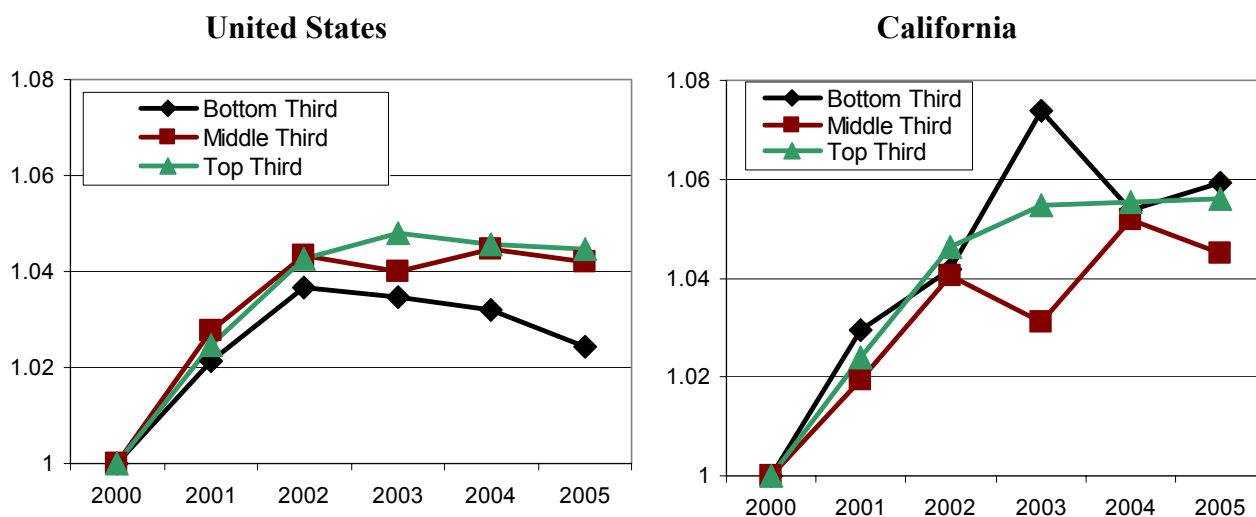


Sources: (1) Current Population Survey, Jan. through June of 2000 to 2005, for all non-elderly adults

Real wage growth in California fell sharply starting in the first half of 2003. Comparing first halves of 2004 and 2005, real wages in California fell by 0.7%, while real wages fell in 0.5% in the nation overall. More recent months have not shown contrary trends. Month-to-month changes in the CPS are often noisy and subject to seasonal swings. A more stable measure is year-over-year changes for the most recent quarter. Comparing second quarters of 2004 and 2005, we find that real wages declined by 1.8% in California and 1.7% in United States. In other words, more recent months do not indicate that the wage declines have been tempered—if anything, the opposite.

Besides addressing average wages, it is instructive to look at what has happened to earnings of workers in different parts of the wage distribution. In the next figure, I report average wages for the top, middle and bottom thirds of the distribution.

Figure 5: Real Wage Index for Bottom, Middle and Top Thirds (First Half of Each Year)



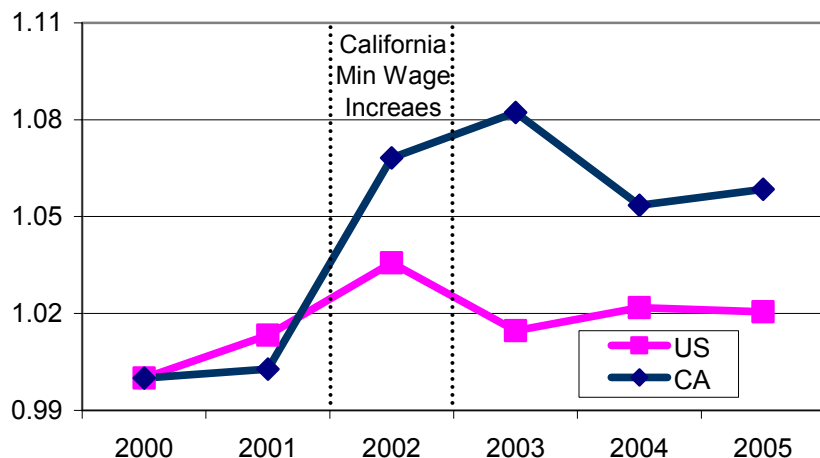
Sources: (1) Current Population Survey, Jan. through June of 2000 to 2005, for all non-elderly adults

Figure 5 shows that for low-end workers, there were significant differences between wages in the state and the nation as a whole. Between first halves of 2000 and 2003, California workers in the bottom third of the distribution saw a total real wage gain of over 7%, whereas real wages for the same level of workers declined in the whole United States.

This difference is not surprising given the 17% cumulative increase in the California minimum wage that was implemented in two steps during 2001 and 2002. Because of the minimum wage increase, real wages for the bottom third in California are 6% higher in 2005 than in 2000, showing more growth than for the middle and top categories. In the United States as whole, however, real wages over the past three years have declined the most for those in the bottom third, and this group ranks at the bottom end of overall wage growth since 2000. Most American workers outside California did not experience an increase in the statutory minimum wage, which stands at \$5.15 per hour per federal law.

We can look at the impact of the minimum wage more sharply by focusing on the wage level at the 10th percentile. (In December 2001, immediately prior to the last increase in the minimum wage, the nominal wage level at the 10th percentile was \$6.75 in California—exactly the value of the minimum.)

Figure 6: Real Wage Growth for 10th Percentile



Sources: (1) Current Population Survey, Jan. through June of 2000 to 2005, for all non-elderly adults

As Figure 6 demonstrates, the 8% growth in real wages for California workers at 10th percentile between first halves of 2000 and 2003 is (1) consistent with the timing of the minimum wage hikes, and (2) contrasts with the experience of their counterparts in the country as a whole. However, since the minimum wage in California has not been updated since 2002, many low-end workers have found their purchasing power eroded through inflation. Over the next year, it is unlikely that they will experience real wage growth, barring policy changes or unexpectedly sharp job creation.

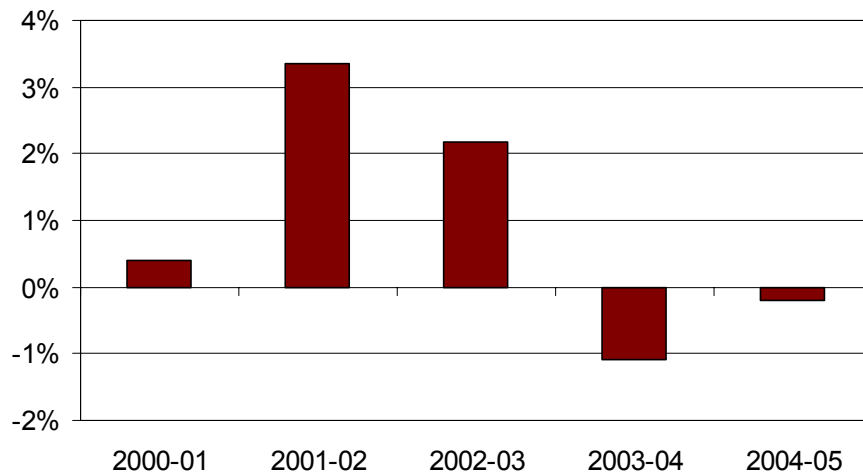
4 Composition of Job Growth in California

The falling wages over 2004 and 2005 period raise the following questions: Are jobs growing in categories that pay less? Or are wages generally falling within job types? As we will see, it is a bit of both. In this section, I first compute the wage changes within job categories—i.e., industry and occupation groupings. Then I report the average wage of shrinking versus growing jobs, and net job growth by average pay. Finally, I identify key sectors of growth over this recovery period.

4.1 Wage Growth within Job Categories

The next figure reports average wage growth within the 153 job categories, weighted by the base year share of people employed in that job category.

Figure 7: Real Wage Changes within Job Categories in California



Sources: (1) Current Population Survey, Jan. through June of 2000 to 2005, for all non-elderly adults

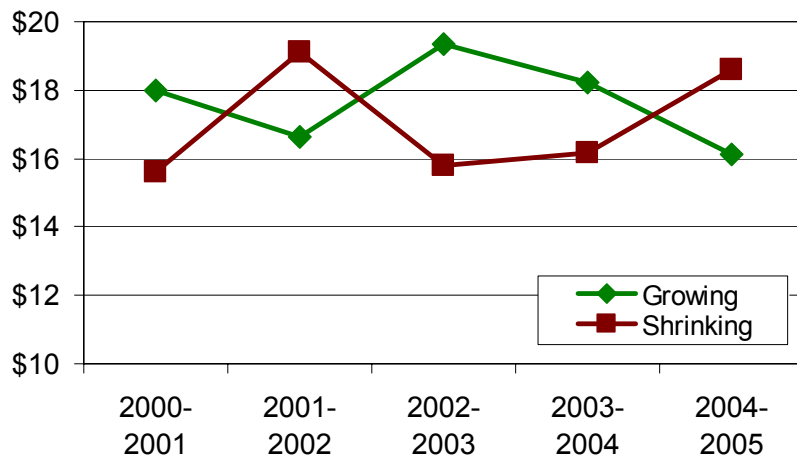
Overall, wages within job categories rose through early 2003, and then took a downward turn. Within-job wages fell between the first halves of 2003 and 2004, as well as between 2004 and 2005. However, we see that the decline was sharper in the first period.

4.2 Average Wages of Growing and Shrinking Jobs

Next, we look at the issue of job composition by comparing the average pay for job categories that were growing to categories that were shrinking.

The average wage of all growing jobs is computed as follows. I first estimate the “wage” of each job category by taking the average wage earned by workers in that industry/occupation grouping that year. Then I compute a weighted average of the wages for all job categories showing an increase. Intuitively, the weight tells us how important a particular growing job category should be in computing the average wage. The natural measure for this “importance” is the contribution of the given job to the employment growth among all growing jobs. We arrive at the weight by dividing the employment increase in that job by the total employment increase among all growing jobs. For shrinking jobs, the procedure is analogous. We weight the wage associated with each job by that job’s contribution to job loss among all shrinking job types.

Figure 8: Average Wages of Growing & Shrinking Jobs in California (First Halves of Each Year)



Sources: (1) Current Population Survey, Jan. through June of 2000 to 2005, for all non-elderly adults

Over the past year (2004-2005), growing job categories paid about \$2.50 per hour less than the ones that shrank. This marks a reversal from the prior two periods.

The data in Figure 8 on wages of growing and shrinking jobs, together with the within-job wage growth data from Figure 7, explain the overall wage changes in California in Figure 4. Between the first halves of 2000 and 2003, average wages rose within jobs, and this rise was augmented by improving job composition in some years. *We see a real wage decline since the first half of 2003. Between 2003 and 2004, this downward trend was driven by within-job wage decline, while in the past year it was driven by a worsening job composition.*

4.3 Characteristics of Growing Jobs

To better understand where jobs are growing, I next report *net* job growth by the average wage associated with the job category. The average wage for each job category (i.e., industry/occupation grouping) is computed in the same way as described above. For simplicity, I consider the following pay ranges: (1) “low-wage”—less than \$12 per hour, (2) “middle-wage”—between \$12 to \$17.99 per hour, and (3) “high-wage”—\$18 per hour or more. Again, we compare first halves of each year.

Figure 9: Net Job Growth in California by Wage Categories



The growth in the first two years of the recovery (2002-2004) was concentrated in high-wage jobs that typically paid \$18 per hour or more. The low-wage category saw a sizeable decline. However, over the past year the pattern reversed itself, with growth occurring in the low-wage category, while the high-wage category lost jobs. This switch has led to the pay gap between job categories registering growth and decline over the past year. It is encouraging to see some growth in middle-wage jobs over the past year, although as we will see below, this may largely be driven by a single industry.

It is useful to take a closer look at which actual job categories are growing. To simplify matters, I report the top five job categories in terms of total jobs added for the 2002-2004 and 2004-2005 periods.

Table 1: Top Five Job Categories – by Jobs Added

2002-2004	2004-2005
1. Professional workers in Professional and Technical Services	1. Blue collar workers in Construction
2. Professional workers in Hospitals	2. Service workers in Food, Accommodation, Entertainment
3. Clerical workers in Professional and Technical Services	3. Clerical workers in Administrative and Support Services
4. Blue collar workers in Repair and Maintenance Services	4. Sales workers in Real Estate
5. Professional workers in Social Services	5. Sales workers in Retail Trade

Sources: (1) Current Population Survey, Jan. through June of 2000 to 2005, for all non-elderly adults

Overall, all top five categories in 2002-2004 were in either the middle- or high-paying categories. There was considerable growth in high- or middle-end Business services (#1, #3, #4), and also in Health and Human Services (#2, #5).

In contrast, three of the top five categories in 2004-2005 were in low-paying categories, with Food Services, Administrative and Support services and Retail fueling the growth in the latter period. Moreover, the two middle-paying categories were dependent on the real estate market. (More on this in the next section.)

What was behind the drop in low-paying jobs early in the recovery? Low-wage service and sales jobs in Food Service and Retail grew throughout the recovery, although their growth accelerated toward the end of this period. However, during 2002-2004 this growth was overshadowed by job losses in other low-wage sectors like Agriculture, Apparel Manufacturing, and Electronics Manufacturing. Apparel and Electronics Manufacturing losses seem unlikely to reverse themselves, but these losses may have played out already. With the conclusion of these “one-time” losses, low-end service jobs have led the growth in the bottom-pay category—and this trend is likely to continue into the future.

4.4 Importance of the Housing Boom for the Job Market

As we saw in Table 1, two of the top five added jobs in 2004-2005 were in real estate and construction. These were also the only better-paying jobs in the list. Although not shown here, these categories were both in the “top ten” in the prior period as well—and merit a closer look.

Over the full period of the recovery (i.e., from the first half of 2002 to the first half of 2005), jobs added in construction and real estate amounted to 53% of net job growth in California (368,000 of 690,000 jobs), according to the Current Population Survey. In the United States as a whole, they constituted 35% of net job growth—still a large percentage, but significantly smaller than in California. To check for consistency, we can also use the CES, which is a better gauge of total job growth. According to the CES, 141,000 of the 255,000 net jobs (i.e., 55%) created in California during this period were in construction or real estate, as opposed to 20% in the United States.

As is well known, the CPS has indicated far greater job growth than the CES over this period due to a combination of factors.² However, both suggest that growth in the Real Estate and Construction sectors account for half of all net job growth over the recovery period in California. The contribution of the housing boom to net job growth in the nation as whole is substantially lower, , although the CES and CPS produce differing magnitudes.

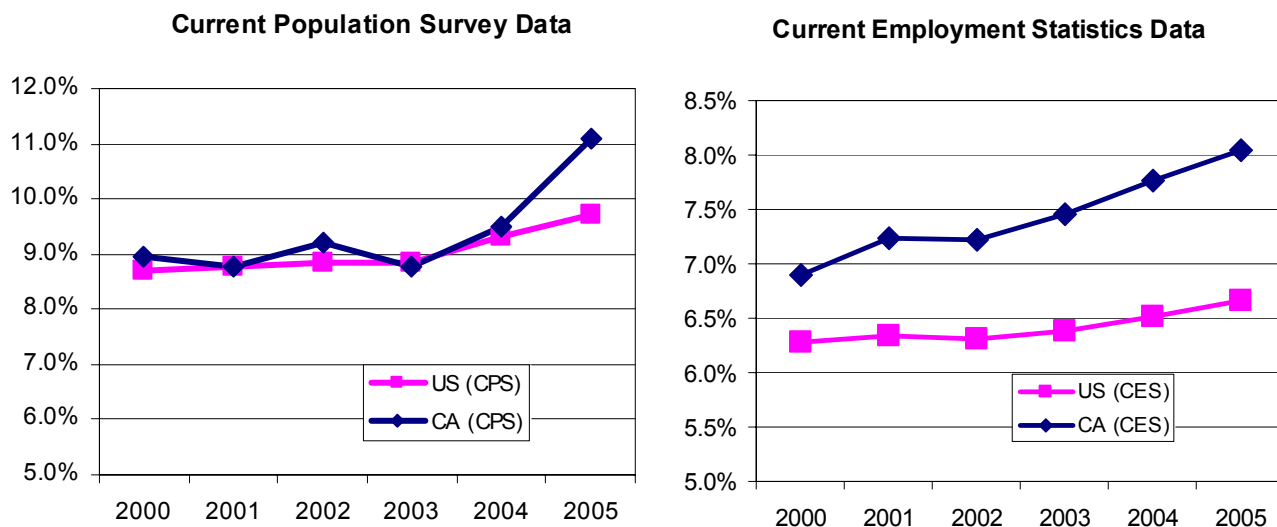
One may be concerned about comparing job growth in one sector to net growth in the full market. After all, the growing sectors all together would “contribute” more than 100% of actual job growth—as there are yet other sectors losing jobs. For this purpose, one could compute the contribution of Construction and Real Estate jobs to net jobs added by *all growing job categories*. Using the CPS, we find that net new jobs in construction and real estate represented 20% of all jobs added by growing job categories between 2002 and 2005 in California, but only 14% in the United States.

² For BLS’s analysis of this difference, see www.bls.gov/bls/fesacp2101703.pdf

The contribution of the housing market to middle-paying jobs is particularly telling. Net new jobs in Construction and Real Estate represented 31% of all middle-wage jobs added by growing job categories between 2002 and 2005 in the state.

Finally, Figure 10 tracks the combined share of Construction and Real Estate in total employment over time using both the household-based CPS and the payroll-based CES. Both report averages from first halves of each year.

Figure 10: Share of Construction and Real Estate in Overall Employment



Both show an increase in Construction and Real Estate jobs as a share of all California jobs that is roughly twice the magnitude of their share in the nation as whole. The CPS suggests this share rose from 9% to 11% in California, largely between 2003 and 2005. This is a substantial growth over a relatively short period of time.

The two data sets do produce differing magnitudes. First of all, the CPS generally has a higher share of construction workers than the CES, since the payroll-based CES does not capture self-employed individuals, a sizeable category in this group. Moreover, the relative undercount might be more pronounced in California due to a greater use of informal work and self-employment in construction work here. Finally, the timing of the growth is somewhat different in the two data sets, with the CPS showing relatively greater growth later.

However, the weight of evidence points to the housing market playing a very significant role in the current recovery in California, particularly for middle-wage jobs. It also seems to have played a substantial role in the nation as a whole. The continuing importance of Real Estate and Construction industries in job creation should raise concerns. Needless to say, jobs and wages are at risk if there are price corrections in the housing market.

Appendix A: Definition of Jobs

I use the Current Population Survey (September 2000 to August 2004). August 2004 is the most recent data available. The household survey is known to suffer from flaws in measuring overall job growth; it is well known that the CPS shows overall job growth belied by evidence from the more accurate, payroll-based Current Establishment Statistics (CES). This is because of a number of adjustments to the CPS during the past few years which produced discontinuous jumps in population as well as employment, as well as less statistical precision of the CPS in terms of measuring employment. For this reason, the Bureau of Labor Statistics itself considers CES to be the more accurate gauge of employment trends. However, the publicly available payroll data only allows us to track industries, and is limited in helping us understand the composition of jobs.

A "job" is defined as 208 potential groupings defined as 52 (2-digit) industry by 4 aggregated occupations. 153 are found to have continuous data and used for the analysis. A job's "average wage" is wage earned by all workers in that category over the base year.

Industries

Agriculture
 Forestry, logging, fishing, hunting
 Mining
 Construction
 Nonmetallic mineral products manufacturing
 Primary metals and fabricated metal products
 Machinery manufacturing
 Computer and electronic products manufacturing
 Electrical equipment, appliance manufacturing
 Transportation equipment manufacturing
 Wood products manufacturing
 Furniture and fixtures manufacturing
 Miscellaneous and not specified manufacturing
 Food manufacturing
 Beverage and tobacco products manufacturing
 Textile, apparel, and leather manufacturing
 Paper and printing manufacturing
 Petroleum and coal products manufacturing
 Chemical manufacturing
 Plastics and rubber products manufacturing
 Wholesale trade
 Retail trade
 Transportation and warehousing
 Utilities
 Publishing industries (except internet)
 Motion picture and sound recording industry
 Broadcasting (except internet)
 Internet publishing and broadcasting
 Telecommunications

Internet service providers and data processing
 Other information services
 Finance
 Insurance
 Real estate
 Rental and leasing services
 Professional and technical services
 Management of companies and enterprises
 Administrative and support services
 Waste management and remediation service
 Educational services
 Hospitals
 Health care services, except hospitals
 Social assistance
 Arts, entertainment, and recreation
 Accommodation
 Food services and drinking places
 Repair and maintenance
 Personal and laundry services
 Membership associations and organization
 Private households
 Public administration
 Armed forces

Occupations

Management/Professional
 Service/Sales
 Administrative
 Production/Maintenance/Transportation

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