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WHERE HAVE ALL THE WAGES GONE? JOBS AND WAGES IN 2006

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Executive Summary

This study uses household survey data and other sources through June of 2006 to evaluate changes in employment, wages and composition of jobs in the United States and in California.

The key findings are:

1. Job growth was moderate in the United States as a whole and in California, but the employment growth has not returned to pre-recessionary levels. California added 172,000 jobs between July of 2005 and July 2006, and the nation added 1.7 million net jobs over this period. Both figures represent a slight decline from the previous year. In contrast, the nation added an average of 3 million jobs a year from 1996 to 2000, and California by itself was producing an average of 424,000 jobs during the boom years. The unemployment rate in both the United States and California declined to 4.8% in 2006, virtually matching the lowest level of unemployment in California in the last boom period (4.7% in February 2001).

2. Productivity and corporate profits have posted strong gains throughout the recovery. Productivity (output per labor hour) grew by 2.7% between 2005 and 2006, and by a total of 12.3% since the recovery began in 2002. Pre-tax corporate profits rose by 12.5% after adjusting for inflation between 2004 and 2005 (latest year available), and by a total of 38.8% since 2002.

3. The gap between productivity and compensation is at an all-time high since 1947 (the first year for which figures are available). Similarly, labor's share of GDP is at an all-time low since the same year.

4. Average wages in the U.S. failed to keep up with inflation, reinforcing a trend of wage stagnation and decline. Real wages declined by 0.8% between 2005 and 2006, and are 0.7% lower in 2006 than in 2003 and 0.2% lower than in 2002, when the recovery began.

5. In California, real wages grew until 2003, but have been stagnant since then. Adjusted for inflation, the average wage rose by 0.4% between 2005 and 2006. The average real wage is 0.2% lower in 2006 than in 2003.

6. Wage inequality is growing. Between 2003 and 2006, real wages for those in the bottom third of the U.S. workforce declined by a total of 2.4%, while wages of those in the top third posted a small gain of 0.1%. Those in the middle saw wages fall by 1.3%. Similarly, real wages declined by 1.2% for the bottom third and rose by 0.6% for the top third of the distribution in California, while the middle third experienced a 1.1% decline in wages.

7. Young workers, male workers, and those without a college degree lost the most ground in wages. But even college-educated employees saw a real wage decline in the United States as a whole. Workers with a B.A. saw their real wages decline by 0.9% over the past year and by 0.6% since 2003. In California, workers with a college degree posted stronger wage gains than other groups—3.2% over the past year and a total 0.5% increase since 2003.

8. Nationally, workers experienced the sharpest wage declines in Personal/Laundry Services, Administrative Support Services, and Waste Management Services. In California, Transportation/Warehousing, and Personal/Laundry Services and Social Services led the list for wage declines. Over the past 3 years, these industries posted real wage declines of over 4% nationally, and over 6% in California.

9. In the United States overall, the biggest contributors to the decline in average wage were blue collar construction jobs, sales jobs in retail, and blue collar jobs in transportation and warehousing. By and large, all three job types contributed to the declining average wage primarily through falling wages within job categories (73% of the effect), as opposed to a growth in low-wage jobs (27% of the effect).

10. In California, the biggest contributors to the declining average wage were sales jobs in retail, blue collar jobs in transportation and warehousing, and professional jobs in health services. Again, the contribution was overwhelmingly through declining wages within jobs (85%), as opposed to a compositional change (15%).

1 Introduction

We are in the fifth year of the economic recovery following the 2001 recession. Growth in GDP has been robust, and real GDP rose by a total of 10% between 2002 and 2006. Pre-tax profit growth has been spectacular, rising by 38% in real terms during the same period.[1] The unemployment rate has come down to 4.8% nationally and in California.

To understand how the recovery is being felt by the workforce, we use household survey data through June of 2006 (the most recent figures available at the time of writing) to quantify changes in the average wage, the distribution of wages, and the contribution of particular industry/occupation groupings in the 2001-2005 period. 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 and unemployment. The second section reports trends in average wages as well as wages for the top, middle and bottom thirds of the workforce. We also analyze wage growth for different demographic segments. The second section is on job composition, where we 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.

Overall, this study finds the following:

1. Job growth was moderate in the United States as a whole and in California, but the employment growth has not returned to pre-recessionary levels. California added 172,000 jobs between July of 2005 and July 2006, and the nation added 1.7 million net jobs over this period. Both figures represent a slight decline from the previous year. In contrast, the nation added an average of 3 million jobs a year from 1996 to 2000 and California by itself was producing an average of 424,000 jobs during the boom years. The unemployment rate in both the United States and California declined to 4.8% in 2006, virtually matching the lowest level of unemployment in California in the last boom period (4.7% in February 2001).

2. Productivity and corporate profits have posted strong gains throughout the recovery. Productivity (output per labor hour) grew by 2.7% between 2005 and 2006, and by a total of 12.3% since the recovery began in 2002. Pre-tax corporate profits rose by 12.5% after adjusting for inflation between 2004 and 2005 (latest year available), and by a total of 38.8% since 2002.

3. The gap between productivity and compensation is at an all-time high since 1947 (the first year for which figures are available). Similarly, labor's share of GDP is at an all-time low since the same year.

[1] Authors' analysis using Bureau of Economic Analysis data. (http://www.bea.doc.gov/bea/newsrelarchive/2005/gdp105f.htm)

4. Average wages in the U.S. failed to keep up with inflation, reinforcing a trend of wage stagnation and decline. Real wages declined by 0.8% between 2005 and 2006, and are 0.7% lower in 2006 than in 2003 and 0.2% lower than in 2002, when the recovery began.

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7. Young workers, male workers, and those without a college degree lost the most ground in wages. But even college-educated employees saw a real wage decline in the United States as a whole. Workers with a B.A. saw their real wage decline by 0.9% over the past year and by 0.6% since 2003. In California, workers with a college degree posted stronger wage gains than other groups—3.2% over the past year and a total 0.5% increase since 2003.

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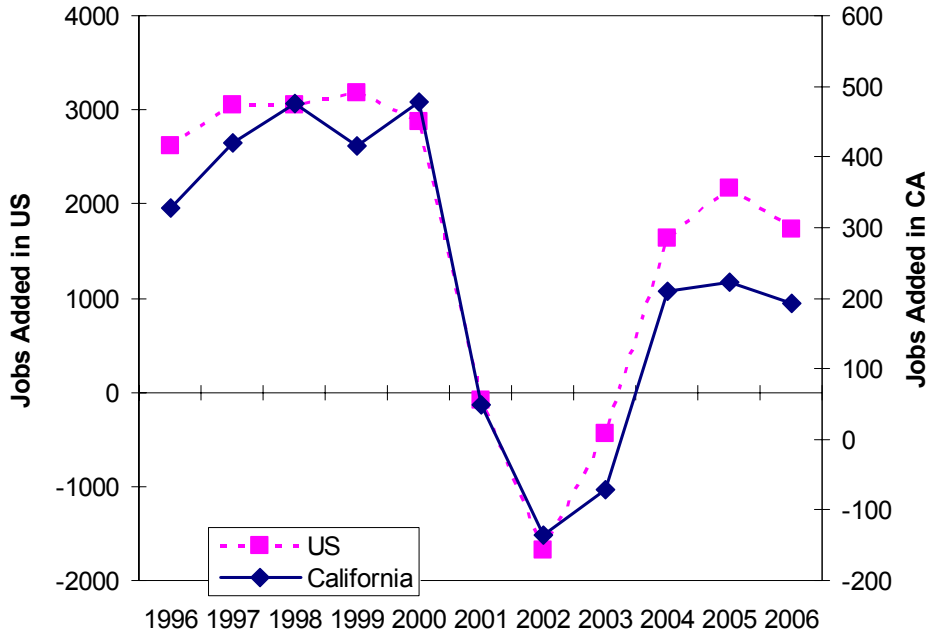
10. In California, the biggest contributors to the declining average wage were sales jobs in retail, blue collar jobs in transportation and warehousing, and professional jobs in health services. Again, the contribution was overwhelmingly through declining wages within jobs (85%), as opposed to a compositional change (15%).

2 What is happening with Job Growth?

Job fell slightly in the United States overall and in the state of California between 2005 and 2006. These job growth figures can be found in the Bureau of Labor Statistics' (BLS) payroll-based survey, the Current Employment Statistics.

California added 172,000 jobs between July of 2005 and July 2006, and the nation added 1.7 million net jobs over this period. Both figures represent a slight decline from the job growth rate of the previous year. Moreover, this year's job additions are substantially lower than the numbers of positions added annually in the prosperous late nineties; from 1996 to 2000, the nation added an average of 3 million jobs a year, while California was producing an average of 424,000 jobs during the boom years.

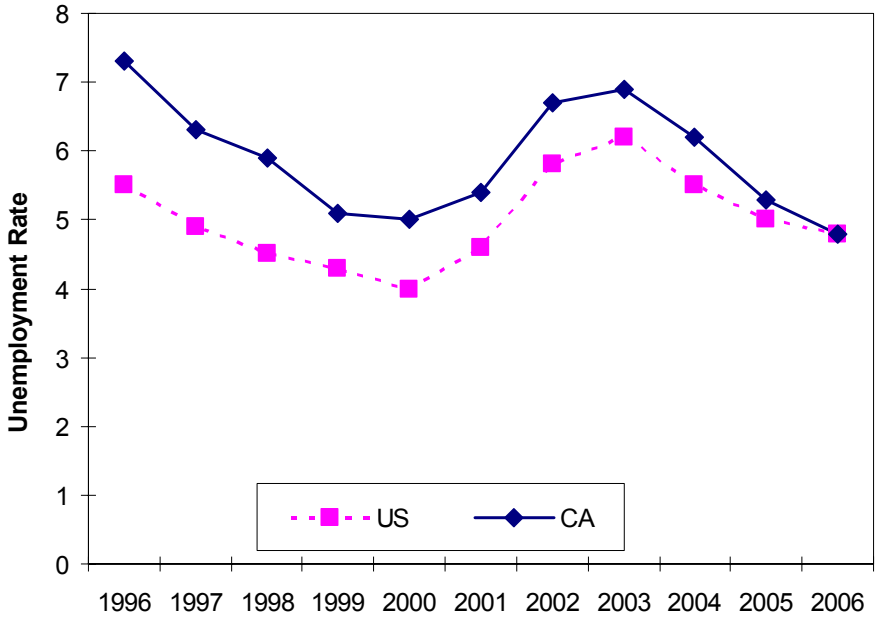
Figure 1: 12 Month (July to July) Job Additions using Payroll Data (CES)



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

The unemployment rate, in comparison, has continued to fall nationally and in the state. These unemployment numbers come from the BLS's household-based Current Population Survey. Figure 2 shows that the national and state unemployment rate stood at 4.8% in July of 2006.

Figure 2: Unemployment Rate



Sources: (1) BLS's Current Population Survey for the month of July

In terms of unemployment, the state has recovered even more strongly than the country overall, and the 4.8% rate nearly matches the all-time low of the past ten years (4.7% in January of 2001). What is behind the apparent contradiction of low unemployment versus only moderate job additions? First, the payroll-based survey does not capture self-employed individuals. Moreover, there are still many "discouraged" workers who are simply out of the labor force. For these reasons, the unemployment rate paints a somewhat rosier picture than is warranted when it comes to understanding the tightness of the labor market.

All in all, when it comes to the jobs side of the story, the state and the nation as a whole have done relatively well in the past few years, although we are not where we were during the heyday of the nineties.

3 Productivity, Profits, and Labor Income Nationally

If the story is a mixed success when it comes to jobs, it is nearly an unqualified failure when we look at wages. The failure is even starker when wages are benchmarked to productivity and profits.

The Bureau of Labor Statistics reports average hourly earnings of non-supervisory workers each month. Although it excludes upper-end workers, it is informative to track the real (inflation-adjusted) wages using this series as (1) it covers the vast majority (around four-fifths) of private sector workers, (2) it is reported in high frequency, and (3) and it is a public and easily obtainable

figure. Figure 3 shows that wages rose at a fast clip between 1997 and 1999, a period of very low unemployment, and then at a moderate pace through the middle of 2003. Since 2003, wages have been falling in real terms. By this definition, we have seen wages fall by 0.2% between July of 2005 and July of 2006; and by 1.5% between July of 2003 and July of 2006. That real wages are falling at a time of relatively low unemployment is troubling and surprising.

Figure 3: Real Wages in U.S., 1995-2006

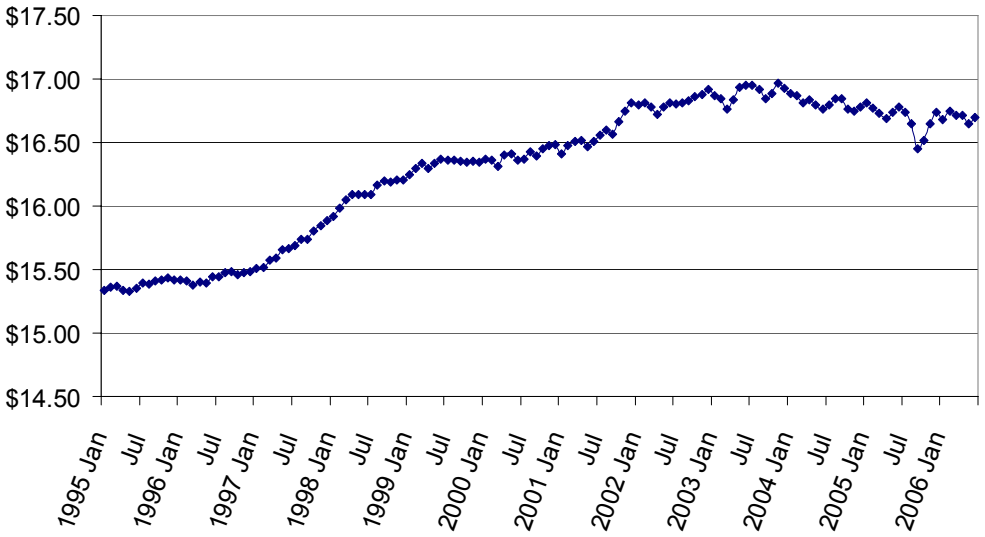
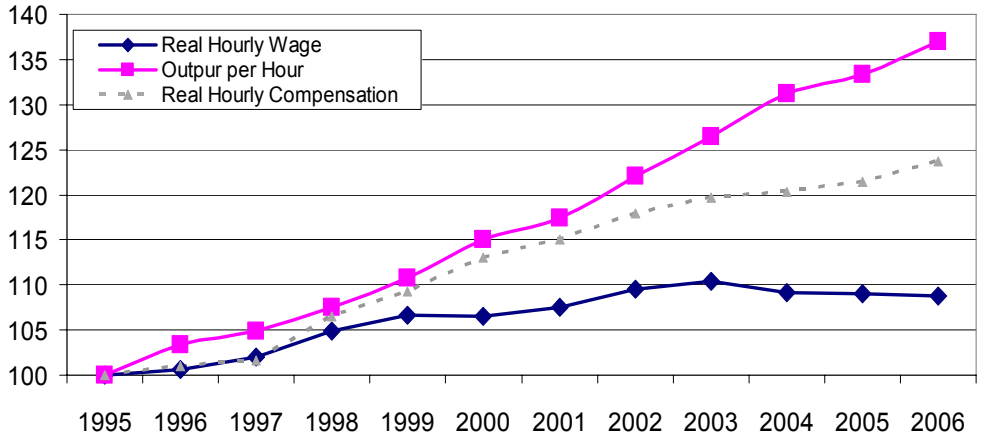


Figure 4: Wages, Compensation and Productivity Indices (1995: 100)



It is particularly surprising to see this wage decline when we benchmark it against the rise in productivity. The BLS also reports the real output-per-hour each month. Comparing July-to-July again, we find that productivity increased by a total of 8.3% between 2003 and 2006, and by 2.4% between 2005 and 2006. Figure 4 shows that, while wages tracked productivity relatively well

between 1995 and 1999, a yawning gap emerged between wages and productivity starting in 1999. Hourly compensation—which includes fringe benefits such as health care and pension, as well as stock-based compensation for higher-end employees—tracked productivity quite tightly until around 2002, but since then we see a significant gap appearing there as well.. July-to-July comparisons show a 1.8% increase over the past year, and a 3.3% increase since 2003.

How much of an aberration is this large gap between productivity and compensation? As it turns out, we are at somewhat of a historical aberration at this point in time. As Figure 5 shows, compensation and productivity were virtually in the same proportion to each other in 1992 as they were in 1947 (the earliest year for which figures are available), although there were periods when productivity was relatively *lower*. Productivity growth began to outpace compensation starting in 1992, but the last four years stand out in the graph for the rate at which the which the gap is widening.

Figure 5: Compensation and Productivity Indices over the Long Run (1992: 100)

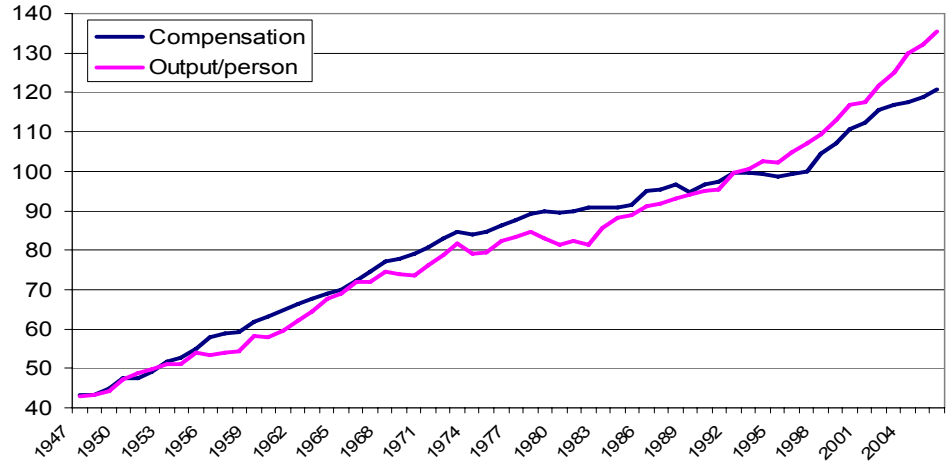
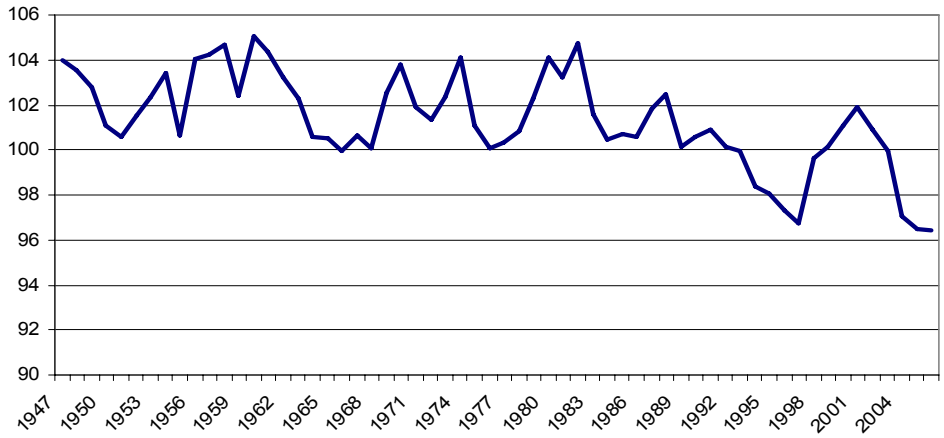


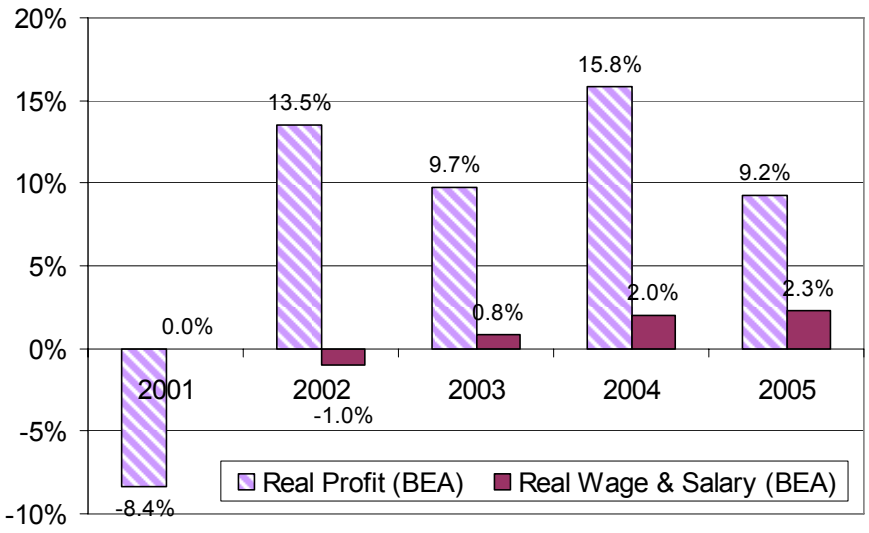
Figure 6: Labor's Share of National Income (1992:100)



Consequently, labor's share of the GDP according to BLS data is at its lowest since data collection began in1947, reflecting a sharp drop since 2002 (Figure 6).

If it is not going getting passed on to workers as bigger paychecks, where is this productivity going? The answer, quite simply, is corporate profits. The Bureau of Economic Analysis (BEA) data shows the growth in pre-tax profits has overwhelmingly outpaced the growth in wage and salary income. Figure 7 shows that growth in inflation-adjusted profits ranged between 13.5% and 9.2% between 2002 and 2005. Over the same period, growth for wage and salary income (as measured in national income accounts) ranged between -1% and 2.3%. The BEA definition of wage and salary income tends to include some types of non-wage compensation, including stock and stock-option based earnings for those at the top of the distribution. As a result, this measure shows some greater growth in income than the hourly earnings in the BLS series. However, whichever measure one uses, the story is pretty clear when it comes to divergent fortunes for workers and shareholders.

Figure 7: Annual Growth in Components of National Income - Profits versus Wages & Salary



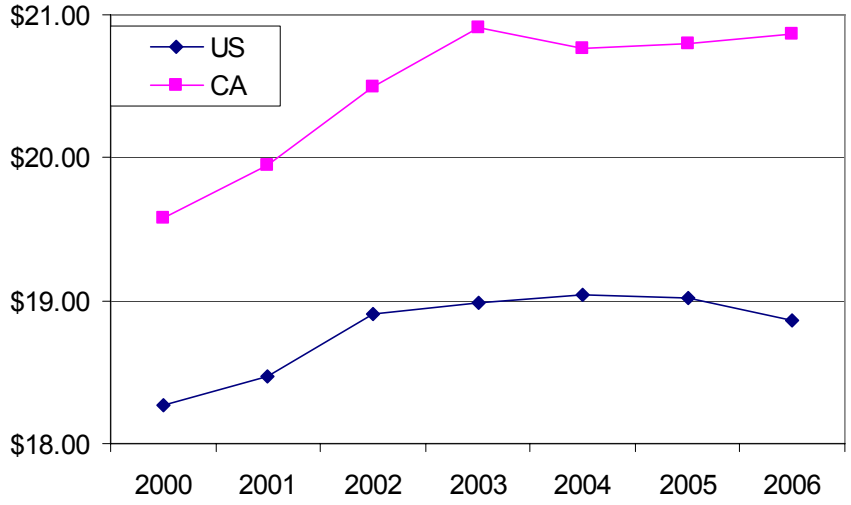
4 Wage Analysis using the Current Population Survey

In this section, we use micro-data from the household-based Current Population Survey to estimate wages for different segments of the workforce. Since we only have data through June of 2006, we have adopted a "fiscal year" type definition of each year. For example, "2006" refers to "July 2005-July 2006."

Figure 8 reports the average wage levels for the 2000-2006 period. Overall, the wage levels are higher in this measure than the BLS measure, since that measure excludes supervisory workers (one-fifth of the population). Moreover, the timing of the wage changes is slightly off due to our

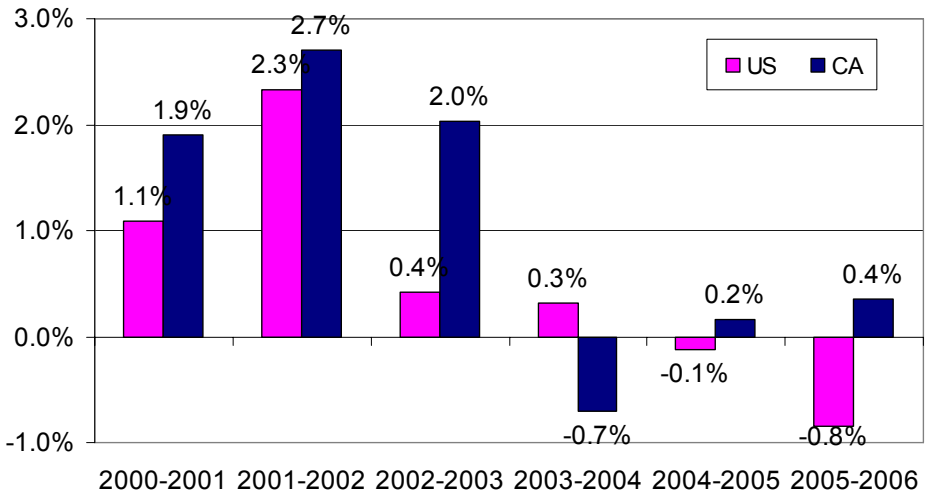
definition of fiscal year. The basic story is much the same, however. Wage stagnation and decline is quite apparent since 2003 for both the nation and the country as a whole.

Figure 8: Average Wage Levels in U.S. and California (2000-2006) (July 2006 Dollars)



In the U.S., real wages declined by 0.8% between 2005 and 2006, and are 0.7% lower in 2006 than in 2003 (Figure 9). Wages fared only a little better in California, where workers saw a 0.4% increase in the real wage over the past year. However, even in California, real wages have declined 0.1% since they reached a peak in 2003.

Figure 9: Growth in Average Wages in U.S. and California (2000-2006)



Beyond wage averages, , it is telling to look at what has happened to earnings of workers in different parts of the wage distribution. In the next figure, we report average wages for the top, middle and bottom thirds of the wage distribution. The wage for the bottom third refers to the average wage of all those up to the 33^{d} percentile; the middle to those between the 34th and 66th percentiles, and the top to those above the 66th percentile. The wages are then indexed to 2000 levels to make the comparison visually clear.

Figure 10: Real Wage Index for Bottom, Middle and Top Thirds of the Distribution

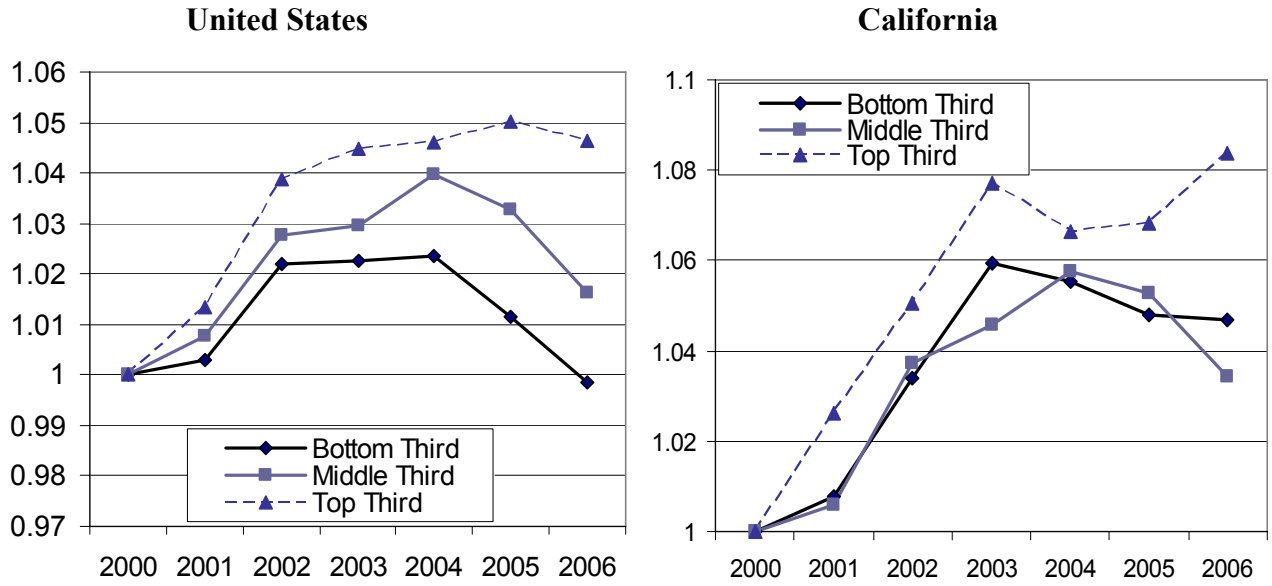
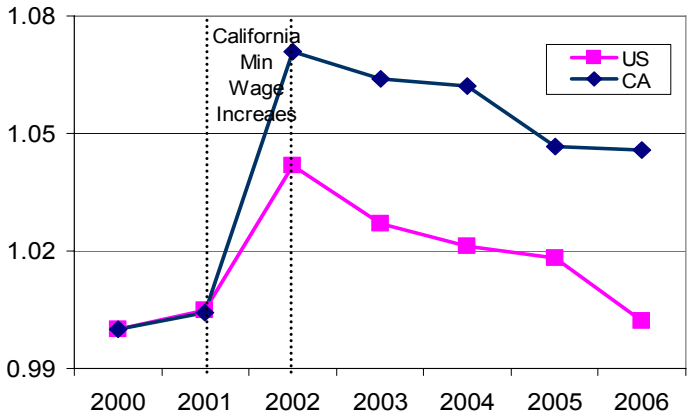


Figure 10 shows a rising gap between low- and high-wage earners in the state and the nation overall. Since 2003, the bottom third have experienced sizeable losses in real terms in the United States as a whole (2.4%), while those in the top third saw a small increase (0.1%). Workers in the middle third fell somewhere in between, with a 1.3% fall in real wages sine 2003. The story is similar for California. Here, in the past three years, real wages declined by 1.2% for the bottom third and rose by 0.6% for the top third of the distribution in California, while the middle third experienced a 1.1% decline in wages.

The primary difference between the national and state trends is that in California, workers in the bottom third have experienced a somewhat more muted wage fall since 2003. They have also fared relatively better than their middle third counterparts since the onset of the recession in 2001. The explanation for this is straightforward, as California implemented a two-step minimum wage increase in 2001 and 2002, bringing it to $6.75/hour. The impact of this policy is apparent when we look at the wages at the 10th percentile of the wage distribution in Figure 11.

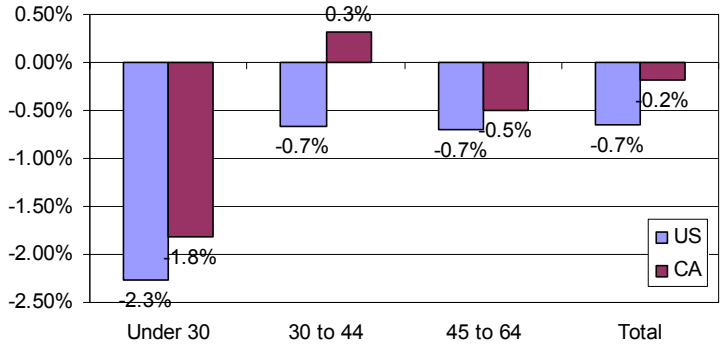
Figure 11: Real Wage Growth for 10th Percentile



As Figure11 demonstrates, the 7% growth in real wages for California workers at 10th percentile between 2000 and 2002 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. California recently passed another 2-step increase which will bring the nominal minimum to $8/hour by January 2008. Thanks to this increase, we can expect further wage growth over the next year for low-end workers in the state, bringing it closer to increases in productivity. However, the same cannot be said for workers in the rest of the country—particularly the majority of states which do not have state-level minimums—who will likely experience further reductions in their real wages.

There is also an age dimension to the falling real wage. Figure 12 shows that the worst showing for real wages was for young workers under 30, who saw a total decline of 1.8% since 2003 in California, and 2.3% in California. The figure also shows that the only group to post a wage increase in real terms was 30- to 44-year-old workers in California—the main source of difference in overall wage growth between the state and the nation.

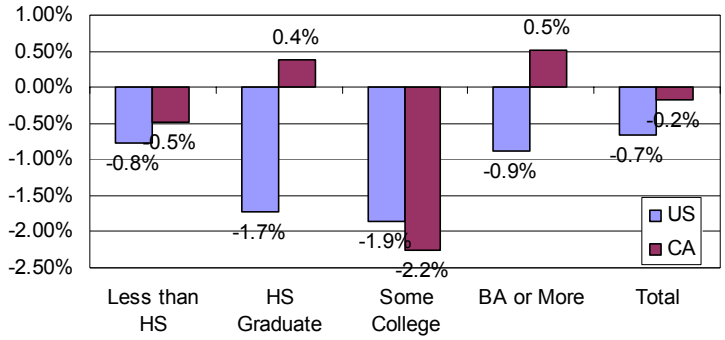
Figure 12: Change in Real Wages (2003-2006) in the United States and California by Age



Similar to the familiar pattern of the past few decades, less-educated workers generally fared the worst. Figure 13 shows a 1.7% drop in wages nationally of workers with only a high school

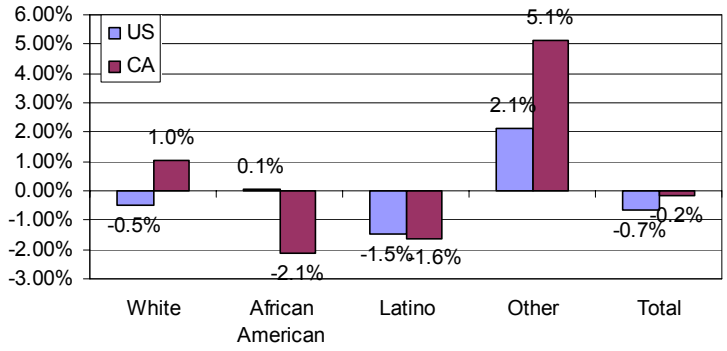
diploma, as compared to a 0.9% drop for workers with a bachelor's degree or more. Although not shown below, younger (25-29 year old) workers in the U.S. with only a high school diploma posted by far the worst losses over this period (5.3% drop in the real wage). However, the surprising finding is that even a college education did not translate into any sizeable wage gains in California (a rise of 0.5% in real wages over 3 years), and indeed a real wage erosion in the nation overall. Furthermore, the biggest losses in the state and in the nation were experienced by those workers with some college education (such as an associate degree) but without a B.A. The combined evidence points us away from the simple story about skills and education that has dominated the discussion behind wage erosion for some time.

Figure 13: Change in Real Wages (2003-2006) in the United States and California by Education



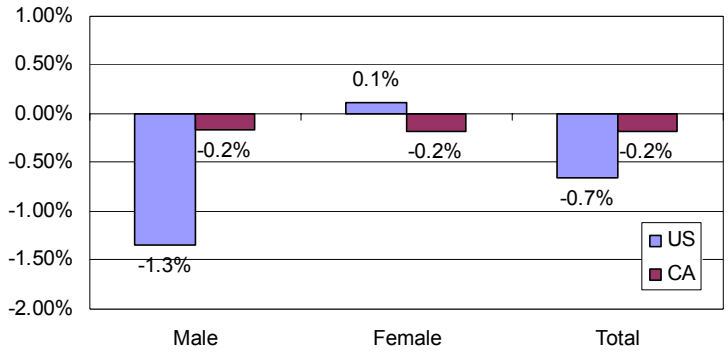
When it comes to ethnic differences, the wage fall appears to be quite broad-based nationally, where the only category to post any gain in real wage over the past 3 years is "other"—dominated by Asian Americans—who saw a 2% aggregate increase (Figure 14). In comparison, white and Latino workers saw wage declines of 0.5% and 1.5% respectively, while African Americans saw their real wage stay flat.

Figure 14: Change in Real Wages (2003-2006) in the United States and California by Ethnicity



California seems to have more divergent paths for different ethnic groups. Sharpest losses happened among African Americans (a 2.1% fall), and Latinos (a 1.6% fall). In contrast, white workers saw a 1% gain, and "other" workers (again predominantly Asian) saw wages rise by 5.1% over the past 3 years.

Figure 15: Change in Real Wages (2003-2006) in the United States and California by Gender



With regard to gender, male and female workers in California both saw a 0.2% drop in the past 3 years. Women in the country overall also saw a rise of 0.1% drop in that period. What is stark is the 1.5% fall for male wages in the country overall—far outpacing the wage reduction for the other groups.

5 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 both, although over the past several years, it has been mainly the latter—i.e., falling real wages and not compositional shifts.

5.1 Wage Growth within Industries

To start, we analyze wage changes within industries. Table 1 reports the wage growth in various non-agricultural industries nationally—both in the past year and the past three. For ease of comparison, the industries are ranked in descending order by their total wage changes in the past three years.

Table 1: Real Wage Changes within Industries – the U.S.

	Change 2003-06	Change 2005-06
Real estate, Rental and Leasing Services	4.1%	6.4%
Wholesale trade	2.4%	-0.5%
Telecommunications	2.4%	-1.2%
Arts, entertainment, and recreation	2.1%	1.8%
Finance	2.0%	3.7%
Insurance	1.5%	-1.6%
Accommodation	1.4%	1.4%
Membership associations and organization	0.8%	1.6%
Educational services	0.7%	-0.4%
Transportation and warehousing	-0.1%	2.5%
Repair and maintenance	-0.1%	-4.2%
Public administration	-0.3%	-1.1%
Durable Manufacturing	-0.4%	-2.0%
Non-durable Manufacturing	-0.8%	-0.1%
Professional and technical services	-0.9%	-1.6%
Health Care Services	-1.0%	-1.7%
Publishing, Broadcasting and Motion Picture	-1.2%	-0.9%
Utilities	-1.5%	-3.3%
Social Services	-1.6%	-0.9%
Other information services	-1.7%	-0.2%
Retail trade	-1.8%	-2.9%
Construction	-3.4%	-1.2%
Food services and drinking places	-3.9%	-2.0%
Internet service providers and data prod.	-4.4%	-3.7%
Waste management and remediation service	-5.9%	-3.6%
Administrative and support services	-5.9%	-3.3%
Personal and laundry services	-6.4%	-3.2%
Total	-0.7%	-0.8%

The data shows that industries with sizeable wage gains over the past three years and the past year were Real Estate, Arts & Entertainment, and Finance. Industries posting large one- and three-year losses were personal services, administrative support services, and waste management and remediation services. Internet service providers, food services, construction and retail also posted sizeable losses for both periods. The general pattern (with some exceptions) seems to be (1) wage growth in some higher-wage industries like financial services, and (2) broad-based wage losses with sharper losses in lower-wage industries.

Table 1: Real Wage Changes within Industries - CA

	Change 2003-06	Change 2005-06
Arts, entertainment, and recreation	13.9%	9.5%
Telecommunications	9.6%	-2.6%
Finance	8.1%	12.6%
Accommodation	7.3%	-3.5%
Durable Goods Manufacturing	4.9%	0.6%
Utilities	4.4%	-4.7%
Publishing, Broadcasting and Motion Picture	3.1%	-0.2%
Insurance	2.7%	-5.1%
Construction	1.7%	1.7%
Professional and technical services	1.4%	2.2%
Educational services	0.8%	0.1%
Public administration	0.7%	1.9%
Administrative and support services	-0.1%	2.4%
Non-durable Manufacturing	-0.7%	-0.9%
Repair and maintenance	-0.9%	-17.5%
Wholesale trade	-1.2%	-4.9%
Retail trade	-2.0%	-3.5%
Food services and drinking places	-3.5%	-0.3%
Personal and laundry services	-3.6%	-5.5%
Health Care Services	-3.7%	0.3%
Membership associations and organization	-6.2%	-0.3%
Real estate, Rental and Leasing Services	-6.7%	9.3%
Social Services	-6.8%	-0.2%
Transportation and warehousing	-7.2%	-1.5%
Waste management and remediation service	-10.0%	-3.2%
Total	-0.2%	0.4%

As with the nation as a whole, the industries with sizeable one- and three-year wage growths were Arts & Entertainment and Finance. However, durable goods manufacturing and construction also posted some wage gains in California over these periods. And similar to the national story, Waste Management was the loss leader for wages over the past three years. In contrast to the country overall, however, California also saw sizeable wage losses in Transportation & warehousing, Social Services, and (somewhat surprisingly) in Real estate.

Also notable is that workers in larger low-wage service sectors such as retail and food services experienced moderate real wage losses. As we will see below, although the wage losses there were small compared to some other sectors, the sheer size of retail meant it played a heavy role in the overall wage decline in the state and in the country.

5.2 The Biggest Contributing Jobs behind the Wage Change

To assess the contribution of various job categories to the overall wage change, we next take the same 27 industries and 4 broad occupational groups ("Managerial/Professional," "Service/Sales," "Administrative," and "Blue Collar"). There are 108 such "job" categories, out of which 88 are found to have continuous data and are used for the analysis.

The overall contribution of each type of each job type can be conceptually decomposed into two parts: wage change within each type of job, and changes in the composition of the job. Formally, change in wage between two years (say 2005 and 2006) can be exactly decomposed as follows:

$$wage^{2006} - wage^{2005} = \sum_{j=1}^{88} \left\{ share_j^{2006} \times \left(wage_j^{2006} - wage_j^{2005} \right) \right\} + \sum_{j=1}^{88} \left\{ \left(share_j^{2006} - share_j^{2005} \right) \times \left(wage_j^{2005} - wage^{2005} \right) \right\}$$

The first term is the "within" change – change in wage within each job type *j*, weighted by the 2006 share of jobs for industry *j*. The second term is the "between" term capturing compositional change. It is the change in share, weighted by the 2005 gap between wage at industry *j* and the average wage that year.

As it turns out, most of the action has been in the "within" category. Table 3 shows that in the United States over the past 3 years, the within job change in wages were responsible for a 7.8 cents decline in the average wage, while the composition ("between") effect was a further depression by 0.8 cents. Just over the past year, the within job wage decline was in fact greater than overall wage decline (12.8 cent as opposed to 12.4 cents), as the job composition shifted slightly towards better-paying jobs. The story is similar for California.

Table 3: Within and Between Job Wage Changes in the US

	"Within"	"Between"	"Total
2003-2006	-$0.078	-$0.008	-$0.086
2005-2006	-$0.128	$0.004	-$0.124

Next, we identify the actual contributions of each job type to the change in average wage in both the U.S. as a whole and in California. In Tables 4 and 5, we report the "top contributors"—both negative and positive—to the average wage in the U.S. and California, respectively. The contribution of these job categories is decomposed into the "within" and "between" effects.

Table 4: Top Contributors to Wage Change (2003-2005) – US (Jan 2000 Dollars)

	"Within" Effect	"Between" Effect	Total Effect
Negative Contributors (US)			
Blue Collar Construction Workers	-$0.039	-$0.010	-$0.048
Sales workers in Retail	-$0.021	-$0.010	-$0.031
Blue Collar workers in Transportation & Warehousing	-$0.024	$0.000	-$0.024
Service workers in Health Care Services	-$0.006	-$0.013	-$0.019
Managerial workers in Non-Durable Manufacturing	-$0.009	-$0.007	-$0.017
Positive Contributors (US)			
Managers in Transportation	$0.018	$0.003	$0.021
Professional Workers in Arts & Entertainment	$0.020	$0.000	$0.021
Managerial Workers in Education	$0.012	$0.002	$0.014
Professional Workers in Health Care Services	$0.012	$0.000	$0.012
Managerial Workers in Finance	-$0.003	$0.014	$0.011

In the U.S., construction workers, sales workers in retail, and blue collar workers in transportation and warehousing topped the chart, followed by service workers in health care and managers in non-durable manufacturing. For the top 3 types, most of the effect came from declining wages rather than from changing employment shares. For health services and manufacturing, both effects were present (growing share of service workers in health care, and falling share of manufacturing employment).

It is telling that besides manufacturing, all the other top negative contributors were non-managerial and non-professional jobs. In terms of positive contributors, the story is the opposite, as all of them were managerial and professional jobs in Transportation, Arts & Entertainment, Education, Health Services and Finance. Most of the contribution, again, is "within" wage, with finance managers being a counterexample, where growing share of jobs plays the main role.

Table 5: Top Contributors to Wage Change (2003-2005) – California (Jan 2000 Dollars)

	"Within" Effect	"Between" Effect	Total Effect
Negative Contributors (CA)			
Sales workers in Retail	-$0.089	-$0.033	-$0.123
Blue Collar workers in Transp/Warehousing	-$0.050	-$0.002	-$0.052
Professional workers in Health Services	-$0.049	$0.012	-$0.037
Professional workers in Public Administration	-$0.013	-$0.013	-$0.027
Managerial workers in Non-Durable Manufacturing	$0.015	-$0.037	-$0.022

Positive Contributors (CA)			
Professional Workers in Arts/Entertainment/Rec	$0.100	-$0.004	$0.096
Sales workers in Finance	$0.076	$0.000	$0.075
Managerial workers in Retail	$0.026	$0.006	$0.032
Managers in Administrative/Support Services	$0.023	$0.001	$0.024
Managerial workers in Finance	-$0.015	$0.033	$0.018

In California as well, higher-end occupations fueled the growth in average wages, led by professional workers in Arts & Entertainment, sales and managerial workers in Finance, and managers in Retail and Administrative services.

In contrast, pushing down the average were most sales workers in retail and blue collar workers in Transportation & Warehousing. One disjuncture between the state and the nation overall is the presence of professional workers health services and public administration in the "top negative" category, as these higher-end workers also saw substantial wage falls. Also, managers in manufacturing contributed to the wage loss because there are now fewer of these higher-wage jobs in California.

Appendix A: Definition of Jobs.

A "job" is defined as 108 potential groupings defined as 27 industries by 4 aggregated occupations. 88 are found to have continuous data and used for the analysis.

Industries

Construction
Non-Durable Manufacturing
Durable Manufacturing
Wholesale trade
Retail trade
Transportation and warehousing
Utilities
Publishing, Motion Pictures and Sound Recording, and Broadcasting
Telecommunications
Internet service providers and data processing
Finance
Insurance
Real estate & Rental and leasing services
Professional and technical services
Administrative and support services
Waste management and remediation service
Educational services
Health care services
Social assistance
Arts, entertainment, and recreation
Accommodation
Food services and drinking places
Repair and maintenance Services
Personal and laundry services
Membership associations and organization
Public administration

Occupations

Management/Professional
Service/Sales
Administrative

Appendix B: Wage tables for the graphs

Bottom, Middle and Top Wage Earners

Average wages for the bottom, middle and top third wage earning groups, in "real" (Jan 2000) dollars

United States

	2000	2001	2002	2003	2004	2005	2006
Bottom Third	$7.21	$7.23	$7.37	$7.37	$7.38	$7.29	$7.20
Middle Third	$12.69	$12.79	$13.04	$13.07	$13.20	$13.11	$12.90
Top Third	$26.16	$26.51	$27.17	$27.33	$27.37	$27.47	$27.37
Total (Jan 2000 $)	$15.33	$15.50	$15.86	$15.92	$15.98	$15.95	$15.82
Total (July2006$)	$18.27	$18.47	$18.90	$18.98	$19.04	$19.02	$18.86

California

	2000	2001	2002	2003	2004	2005	2006
Bottom Third	$7.13	$7.18	$7.37	$7.55	$7.52	$7.47	$7.46
Middle Third	$13.52	$13.60	$14.03	$14.14	$14.30	$14.24	$13.98
Top Third	$28.73	$29.48	$30.18	$30.94	$30.63	$30.68	$31.14
Total (Jan 2000 $)	$16.42	$16.74	$17.19	$17.54	$17.41	$17.44	$17.51
Total (July2006$)	$19.58	$19.95	$20.49	$20.91	$20.76	$20.80	$20.87

Note: July 2006 amounts (last line of table) arrived at by multiplying Jan 2000 by 1.9122.

10th Percentile

Wages of the lowest 10th percentile in “real” (Jan 2000) dollars

	US	CA
2000	$6.38	$6.18
2001	$6.42	$6.21
2002	$6.65	$6.62
2003	$6.56	$6.57
2004	$6.52	$6.56
2005	$6.50	$6.47
2006	$6.40	$6.46

Age

Average wages by different age groupings in "real" (Jan 2000) dollars

United States

	2000	2001	2002	2003	2004	2005	2006
Under 30	$11.22	$11.43	$11.55	$11.44	$11.42	$11.31	$11.18
30 to 44	$16.34	$16.63	$16.94	$17.07	$17.15	$17.04	$16.96
45 to 64	$17.56	$17.48	$17.97	$18.06	$18.08	$18.16	$17.94
Over 65	$13.80	$14.35	$14.55	$14.31	$14.33	$15.12	$15.55
Total	$15.33	$15.50	$15.86	$15.92	$15.98	$15.95	$15.82

California

	2000	2001	2002	2003	2004	2005	2006
Under 30	$11.56	$12.21	$12.23	$12.38	$11.99	$12.42	$12.15
30 to 44	$17.63	$17.98	$18.68	$18.89	$18.83	$18.70	$18.95
45 to 64	$19.29	$19.39	$19.69	$20.21	$20.05	$19.94	$20.11
Over 65	$18.02	$19.03	$16.47	$16.26	$16.55	$18.39	$18.29
Total	$16.42	$16.74	$17.19	$17.54	$17.41	$17.44	$17.51

Education

Average wages by attained level of education in "real" (Jan 2000) dollars

United States

	2000	2001	2002	2003	2004	2005	2006
Less than HS	$9.31	$9.31	$9.52	$9.49	$9.57	$9.51	$9.42
HS Graduate	$12.53	$12.57	$12.77	$12.83	$12.92	$12.74	$12.61
Some College	$14.11	$14.33	$14.63	$14.51	$14.55	$14.45	$14.24
BA or More	$22.34	$22.49	$22.95	$23.02	$22.79	$22.96	$22.82
Total	$15.33	$15.50	$15.86	$15.92	$15.98	$15.95	$15.82

California

	2000	2001	2002	2003	2004	2005	2006
Less than HS	$8.95	$8.95	$9.54	$9.62	$9.73	$9.64	$9.58
HS Graduate	$12.75	$13.32	$13.44	$13.61	$13.72	$13.78	$13.66
Some College	$15.41	$15.74	$16.30	$16.10	$15.93	$15.94	$15.73
BA or More	$24.64	$24.76	$25.19	$25.84	$24.99	$25.16	$25.97
Total	$16.42	$16.74	$17.19	$17.54	$17.41	$17.44	$17.51

Race

Average wages by race in "real" (Jan 2000) dollars

United States

	2000	2001	2002	2003	2004	2005	2006
White	$16.29	$16.48	$16.87	$16.96	$17.03	$17.03	$16.88
African American	$12.96	$12.91	$13.43	$13.30	$13.47	$13.31	$13.31
Latino	$11.50	$11.67	$11.87	$12.09	$12.06	$12.07	$11.91
Other	$16.37	$16.79	$17.15	$17.16	$17.09	$17.29	$17.53
Total	$15.33	$15.50	$15.86	$15.92	$15.98	$15.95	$15.82

California

	2000	2001	2002	2003	2004	2005	2006
White	$18.88	$19.64	$19.93	$20.60	$20.50	$20.36	$20.81
African American	$15.73	$15.47	$16.04	$15.88	$15.43	$15.62	$15.54
Latino	$11.73	$11.91	$12.49	$12.76	$12.74	$12.70	$12.55
Other	$18.05	$18.11	$18.82	$18.65	$18.27	$19.53	$19.61
Total	$16.42	$16.74	$17.19	$17.54	$17.41	$17.44	$17.51

Gender

Average wages by gender in "real" (Jan 2000) dollars

United States

	2000	2001	2002	2003	2004	2005	2006
Male	$17.14	$17.21	$17.61	$17.58	$17.60	$17.52	$17.34
Female	$13.38	$13.64	$13.97	$14.15	$14.23	$14.27	$14.17
Total	$15.33	$15.50	$15.86	$15.92	$15.98	$15.95	$15.82

California

	2000	2001	2002	2003	2004	2005	2006
Male	$18.00	$18.03	$18.60	$18.77	$18.83	$18.63	$18.74
Female	$14.54	$15.20	$15.53	$16.07	$15.76	$16.05	$16.04
Total	$16.42	$16.74	$17.19	$17.54	$17.41	$17.44	$17.51

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