Too Many Farm Workers in California?

The Evidence from Wage Trends

by

The Staff of the California Institute for Rural Studies

California Institute for Rural Studies
P.O. Box 2143
Davis, California 95617
(916) 756-6555

August 1990

Introduction

In general, we would expect that a shortage of agricultural workers in California would lead to competitive bidding for workers, since the agricultural labor market is freer and more competitive than many other markets. Such behavior would tend to bid up wage levels for farm workers. However, the existing data show just the opposite tendency, a decline in wages after controlling for inflation.

In this initial review of the data, we are concerned only with wage trends, and not with analyzing the various explanations for why wages are declining. A later paper will examine such explanatory factors in detail.

In what follows, we first examine evidence regarding overall wage levels for California farm laborers. Second, we examine evidence at the level of wage rates for individual farm jobs that, independently, leads to similar conclusions.

California Farm Wages: The Macro Data

There are three sources of data regarding the trend of California farm labor wage rates over time: two are independent surveys and the third is administrative data on wages and employment as reported directly by employers to government agencies. Each of these three sources yields an independent measure of the trend over time of wage rates for farm jobs in California.

First, farm job wage rates for field workers are regularly published in the quarterly U.S. Department of Agriculture (USDA) report Farm Labor[1]. These rates are determined in four separate surveys conducted each year by the National Agricultural Statistics Service (NASS), an agency of USDA.

We show in Figure 1 the trend since 1978 of the published annual average wage rate data for California field workers, corrected for

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[1] Farm Labor, U.S. Department of Agriculture, Agricultural Statistics Board, Washington, D.C., quarterly.

inflation.[2] Clearly, real wages for California field workers are lower today than they were at the beginning of the 1980s. The real wage in 1981 of $5.92 (in 1988 $) had fallen to $5.43 by 1988. Thus, USDA surveys show that real wages of California field workers declined by about 8.3% over the 1981-88 period, or an annual average rate of growth of -1.1%.

Second, the Farm Employers Labor Service (FELS), an affiliate of the California Farm Bureau Federation, conducts an annual survey of farm labor wage rates and benefits in cooperation with several other associations of farm employers. Unlike the NASS survey described earlier, the FELS survey includes employers who are members of these employer associations. Thus, the sample differs from the NASS survey.[3] The FELS survey has been conducted throughout all years of the 1980s except 1981.

Figure 2 shows the trend since 1980 of the average wage rate for California farm workers in the job category General Labor II, corrected for inflation.[4] The trend of reported wage rates is clearly downward in the 1980s. Comparing the 1981 wage[5] rate of $5.38 (in 1988 $) with the 1988 wage rate of $4.85 we find that the Farm Bureau surveys show that real wages of California field workers declined by 9.9% during the 1981-88 period, or an annual

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[2] We have used the published annual average wage rate for field workers in California as published in Farm Labor for all years except 1981 and 1982 when annual averages were not published. In those two years we computed annual averages from the published quarterly data. We corrected for inflation by discounting current wages by the California Consumer Price Index (CPI) of the Bureau of Labor Statistics, taken from the California Statistical Abstract, State of California, Department of Finance, Sacramento, CA, 1989, p. 56. The nominal and real data for this figure and for all others will be found in the table at the end of the paper.

[3] We would expect that the FELS sample is biased toward larger employers. Also, the survey does not include farm labor contractors.

[4] This category was chosen because the greatest number of employers reported workers of this type. The authors are grateful to George Daniels of FELS who provided annual survey data for each year cited in our tabulation. The California CPI was used to correct for inflation as described previously.

[5] For lack of a 1981 survey we have averaged the 1980 and 1982 data for this purpose.

average rate of growth of -1.4%.[6]

The third independent source of data on the trend over time of wages paid to California agricultural workers is the wage and employment report submitted by employers to the California Employment Development Department as part of the Unemployment Insurance (UI) program.[7] In this case, wage rates are not reported. However, quarterly wage and salary payments and monthly employment figures are reported. From these data we have computed total annual farm job wages and salaries and annual average farm job employment for each year of the 1980s.[8]

Annual wages per full-time job are then computed for each year by simply dividing annual farm job wages by annual average farm job employment. We call this ratio "Annual Average Earnings per Full-

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[6] While the trend over time of the wage rates found in the FELS survey is remarkably similar to the analogous trend found in the NASS survey, the actual reported wage rates differ significantly. As is readily noted, the wage rates reported by FELS for the job title General Labor II are quite a bit lower than the wage rates reported by NASS for field workers. This difference may be accounted for by either of two major factors.

First, the FELS survey refers to a different set of California agricultural employers than does the NASS survey. As noted above the NASS samples from all California farm employers whereas FELS limits itself to sampling those who happen to belong to one of a number of associations. Second, the NASS data uses the very broad job title "Field Worker," whereas the FELS survey reports detailed wage data for more than a dozen job titles. We show here the FELS data that refer to the job title for which the largest number of respondents in the FELS survey report having employees. It is also the job category that very likely includes the largest number of persons employed in perishable crop agriculture.

[7] In 1987 these reports were published as Report 882 (Quarterly) and Report 882-A (Annual). We have been able to obtain an unpublished set of data for prior years directly from EDD. We are grateful for the cooperation of Tom Stassi of EDD in making these data available.

[8] UI wage reports are classified according to the Standard Industrial Classification (SIC) code of the employer, the type of business activity that accounts for the largest fraction of a given business firm's sales. "Farm jobs" here refers to all reports by employers in the SIC categories Crop Farms (01), Livestock Farms (02), Crop Preharvest Services (0721), Crop Harvesting Services (0722), Farm Labor Contractors (0761) and Farm Management Services (0762).

Time-Equivalent Job."[9] For industries in which most jobs are year-round, this figure would represent average wages per employed worker. In agriculture, where most jobs are seasonal, this figure greatly overstates the actual wages earned by the average employed worker.

Figure 3 shows the trend over time of Annual Average Earnings per Full-Time-Equivalent Job, as corrected for inflation.[10] The UI data thus show that this real measure of agricultural worker income declined 8.8 percent from 1981 to 1988, or an annual average rate of growth of -1.3 percent.

Comparison with Manufacturing

All three macro measures of farm wages in California thus indicate a declining trend in the 1980s. For comparison, we show in Figures 4 and 5 average hourly earnings trends (in 1988 $) for production workers in all California manufacturing and in California food processing respectively. Both of these wage series exhibit smaller declines: real manufacturing wages in California declined 4.9 percent from 1981 to 1988, or at an annual average rate of growth of -0.7 percent; food processing wages declined 6.7 percent over the same period, or at an annual average rate of growth of -1.0 percent. **Thus our measures of farm wages were declining as much as 50 percent faster than all manufacturing wages during the 1980s.**

This suggests that part of the overall decline in California agricultural wages may be the result of broad forces in the California or U.S. economy, such as increased international competition, the decline of union strength, or increasing levels of immigration. It is certainly possible that an increased supply of labor resulting from immigration from Mexico and Central America has exerted a downward pressure on wages in all sectors of the California economy, since many more such immigrants work in urban areas than in agriculture. But clearly the agricultural labor market is undergoing more drastic pressures.

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[9]Because UI data does not distinguish between different categories of employees, this measure unfortunately includes all salaried and managerial personnel, which tends to bias upward the measures of remuneration.

[10] As before, the effect of inflation on wages is removed by discounting with the California CPI.

Discussion

Both the NASS and FELS surveys demonstrate that real wage rates for seasonal or field workers in California declined during the 1980s. UI wage reports also show that wages per full-time-equivalent job declined. While declining wages would appear to indicate that there is no shortage of workers, there are a number of structural factors which may have contributed to the aggregate wage decline. We note three in regard to the agricultural labor market.

First, there has been an increasing use of farm labor contractors in California agriculture, as we have documented elsewhere.[11] This trend has been especially pronounced in San Joaquin Valley fruit and vegetable employment.[12] Various studies have shown that farm labor contractors on average pay lower wages than do growers who direct-hire labor for the same work.[13] Thus we would expect that as contractors increase their share of employment, this would be associated with a decline in overall wage levels.

Second, there has been a decline in the number of California agricultural workers employed under a union contract.[14] Since

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[11] Don Villarejo, Farm Restructuring and Employment in California Agriculture, Working Paper #1, Working Group on Farm Labor and Rural Poverty, California Institute for Rural Studies, Davis, CA, February, 1989.

[12] Ibid, p. 22.

[13] Richard Mines and Phillip L. Martin, A Profile of California Farmworkers, Giannini Information Series No. 86-2, Giannini Foundation of Agricultural Economics, University of California, Division of Agriculture and Natural Resources, Berkeley, CA, July 1986. See Table IV-7, p. 63. Grower-paid weekly wages were found to average $210.50 while FLC wages were an average of $166.98 per week. An econometric analysis by Vandeman of the same data showed significantly lower wages (and less variance) paid by farm labor contractors for the same jobs. Ann Vandeman, Labor Contracting in California Agriculture, unpublished Ph.D. thesis, University of California, Berkeley, 1988. Also the study in citrus by Mines found systematically lower wages in the contractor-hired crews, which was, of course, their appeal. Richard Mines and Ricardo Anzaldua, New Migrants vs. Old Migrants: Alternative Labor Market Structures in the California Citrus Industry, Center for U.S.-Mexican Studies, Monograph no. 9, University of California, San Diego, 1982.

[14] Miriam Wells has estimated that no more than 10 percent of California farm workers were ever under union contract, while Martin estimated that it had fallen to about 3 percent in the mid-

unionized work has been associated with higher wages in California agriculture,[15] we would expect that fewer union job slots would be associated with a decline in overall wage levels.[16]

Third, there has been an increase in the plantings of labor-intensive crops in California. This has actually increased the demand for farm labor in certain tasks and regions. This tendency, combined with mechanization of certain tasks, has had an unknown restructuring effect on the job structure of California agriculture during the past decade, but could well have increased the proportion of low-skilled jobs, thus tending to lower overall wages.

These three structural changes, and others as well, could all have had significant explanatory power with respect to the wage decline noted above. In a future paper, we will attempt to assess the relative impact of each of these changes. For now, however, we can avoid these complex issues by looking at wages for individual tasks that have changed little in the past decades, and which show surprising results.

1980s. It is certainly lower now. Miriam Wells and Martha West, Regulation of the Farm Labor Market: An Assessment of Farm Worker Protections under California's Agricultural Labor Relations Act, Working Paper no. 5, Working Group on Farm Labor and Rural Poverty, California Institute for Rural Studies, Davis, February 1989. Phillip L. Martin, Suzanne Vaupel, and Daniel Egan, Unfulfilled Promise: Collective Bargaining in California Agriculture, Westview Press, 1988.

[15]Vandeman, op. cit., p. 80. See also Philip L. Martin, Suzanne Vaupel, and Daniel Egan, "Farmworker Unions: Status and Wage Impact," California Agriculture, July-August 1986.

[16]There has also been a decline in the level of union organizing activity since 1978, which has reduced pressure on employers to raise wages to head off unionization. This point is made by Wells and West, op cit.

California Farm Wages: The Micro Data

In this section we examine the actual wage rates,[17] particularly piece rates, paid for several specific jobs which remain essentially the same activity today as they were in earlier periods. For example, picking bush tomatoes by hand in San Joaquin county today involves the same specific activity as it did a dozen or more years ago. Thus, comparison of the piece rate today with the rate from earlier periods can serve as a separate measure of the trend of wage rates over time.

Hourly wages for hoeing and chopping cotton, Fresno County

Figure 6 shows the decline of real wages in cotton hoeing over the 1980s. Wages had been reduced to the minimum wage by 1988. Over the comparable 1981-88 period, the low estimate of wages fell 25.1 percent, or at an annual average rate of growth of -4.0 percent.

Piece rates for raisin grape harvesting, Fresno County

Figure 7 shows the trend of piece rates per tray of raisin grapes. The low estimate of rates fell 40 percent in real terms over the 1981-88 period, or at an annual average rate of growth of -4.3 percent. Various growers interviewed have argued that piece rates fell in the mid-1980s because of extreme financial stress in the industry.

Piece rates for vineyard pruning, Kern County

Figure 8 shows the estimates of prevailing rates per vine for pruning vineyards in Kern county. Real wages fell 15.8 percent over the 1981-88 period, or at an annual average rate of growth of -1.6 percent, slightly faster than the overall decline in farm wages portrayed above.

Piece rates for picking fresh market tomatoes, San Joaquin County

Figure 9 shows the real piece rates for harvesting bush tomatoes in the Stockton area. The steep decline in the 1970s moderated

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[17]For lack of any other time series of wage data, we have used the "prevailing wages" as reported by the California Employment Development Department. While these reports are not based on random samples, there is little reason to believe that they are not broadly consistent from year to year. While wages in agriculture can vary a great deal depending on the type of firm involved, there is considerable uniformity in wage observance in the crop/regions we have chosen here. In a forthcoming paper, we will compare these wage series with other independent observations on wages.

somewhat in the 1980s, so that real wages fell only 4.3 percent from 1981-88, or at an annual average rate of growth of -0.4 percent, the slowest decline over that period of any wage series considered here. It is interesting to note that there were strikes in the San Joaquin tomato harvest over piece rates in 1983 and 1987, as well as in 1989, and tomato wages in that area are higher than in the southern San Joaquin valley or in San Diego.

Conclusion

Although the data is not completely reliable, the evidence is compelling. When we examine specific seasonal farm labor tasks, we find that wages are falling even faster than the macro data would suggest. That is, the farm labor markets where recent immigrants could be expected to have the greatest impact are in fact where we find the greatest wage declines. The one exception is the San Joaquin tomato harvest, where large numbers of settled workers continue to participate and where there has been significant organized labor protest throughout the 1980s.

Are there too many farm workers in California? Interviews with farm workers uniformly suggest this is the case, and the wage trends presented here do not contradict that hypothesis.

Figure 1

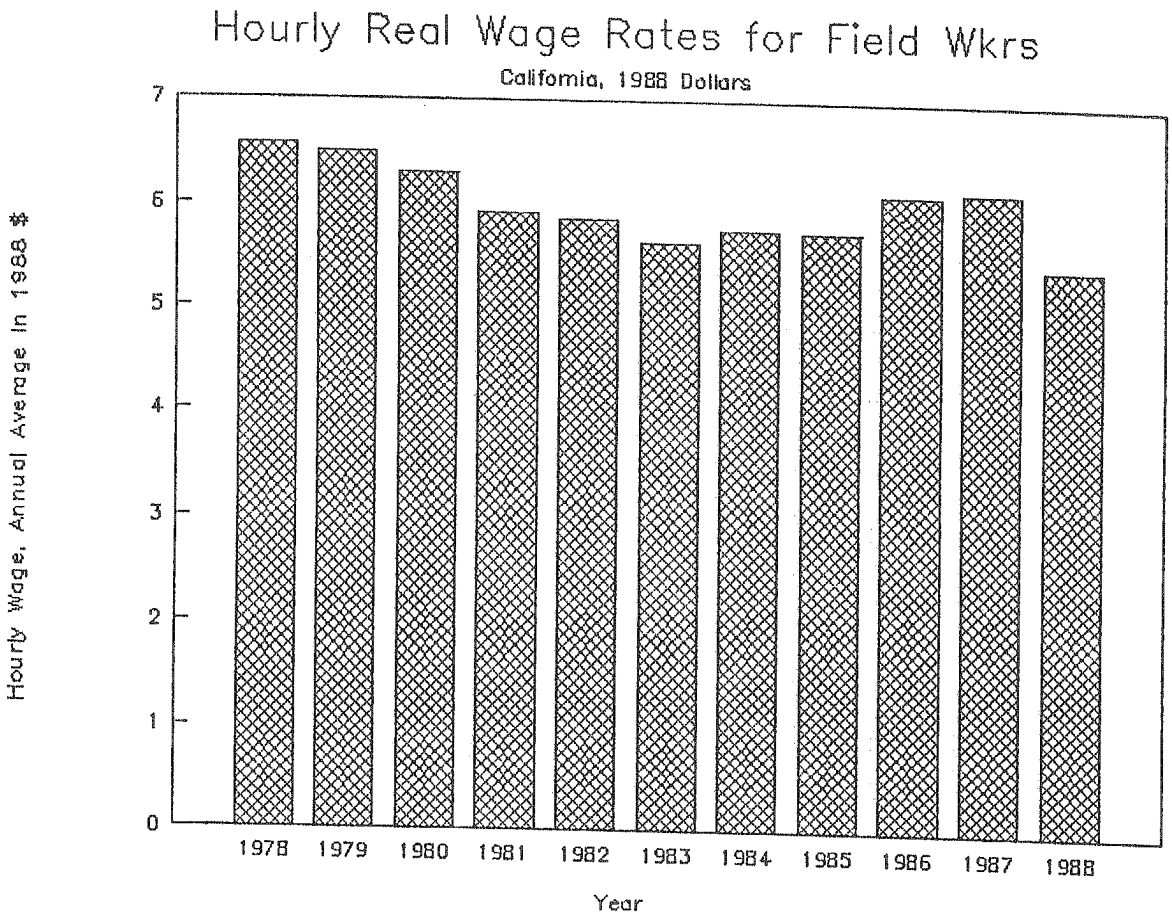

Hourly Real Wage Rates for Field Wkrs
California, 1988 Dollars
Hourly Wage, Annual Average in 1988 $
0
1
2
3
4
5
6
7
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
Year

Figure 2

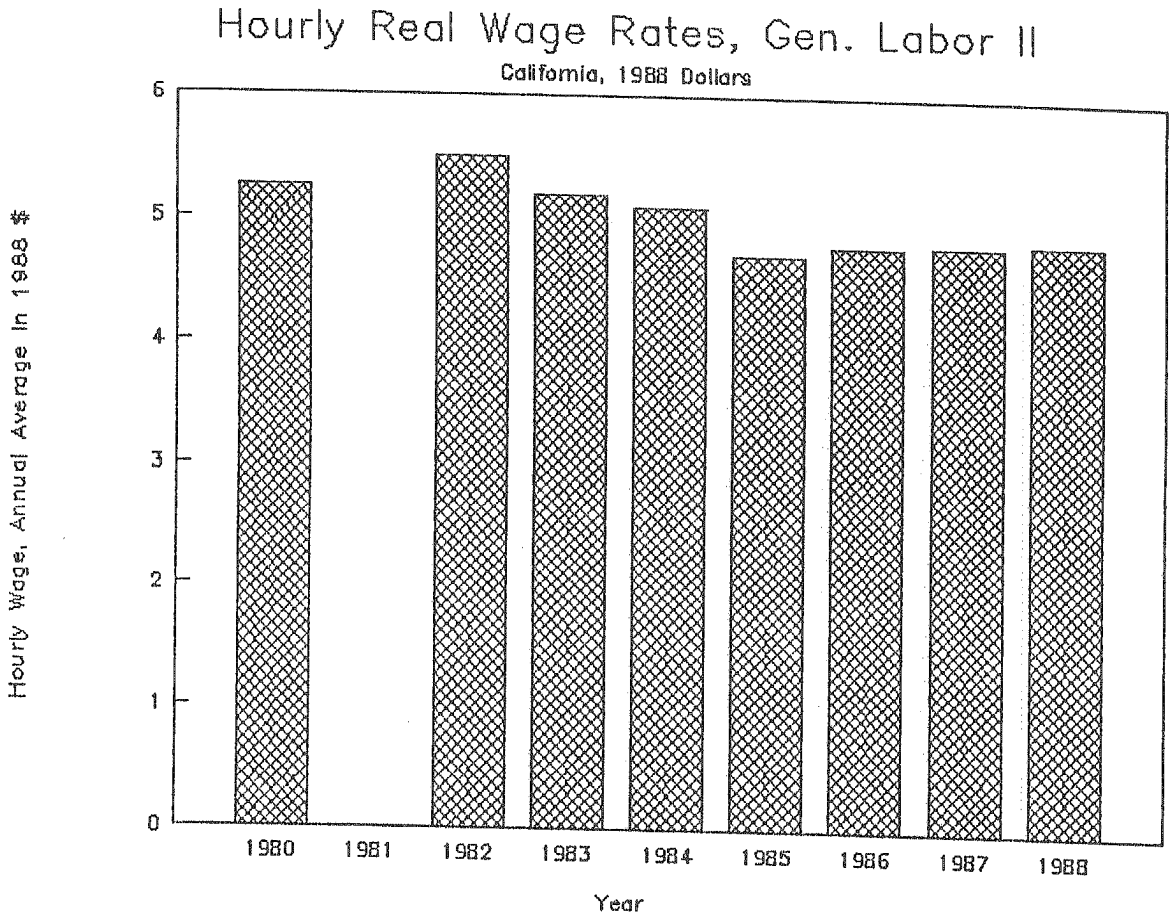

Hourly Real Wage Rates, Gen. Labor II
California, 1988 Dollars
Hourly Wage, Annual Average In 1988 $
0
1
2
3
4
5
6
1980
1981
1982
1983
1984
1985
1986
1987
1988
Year

Figure 3

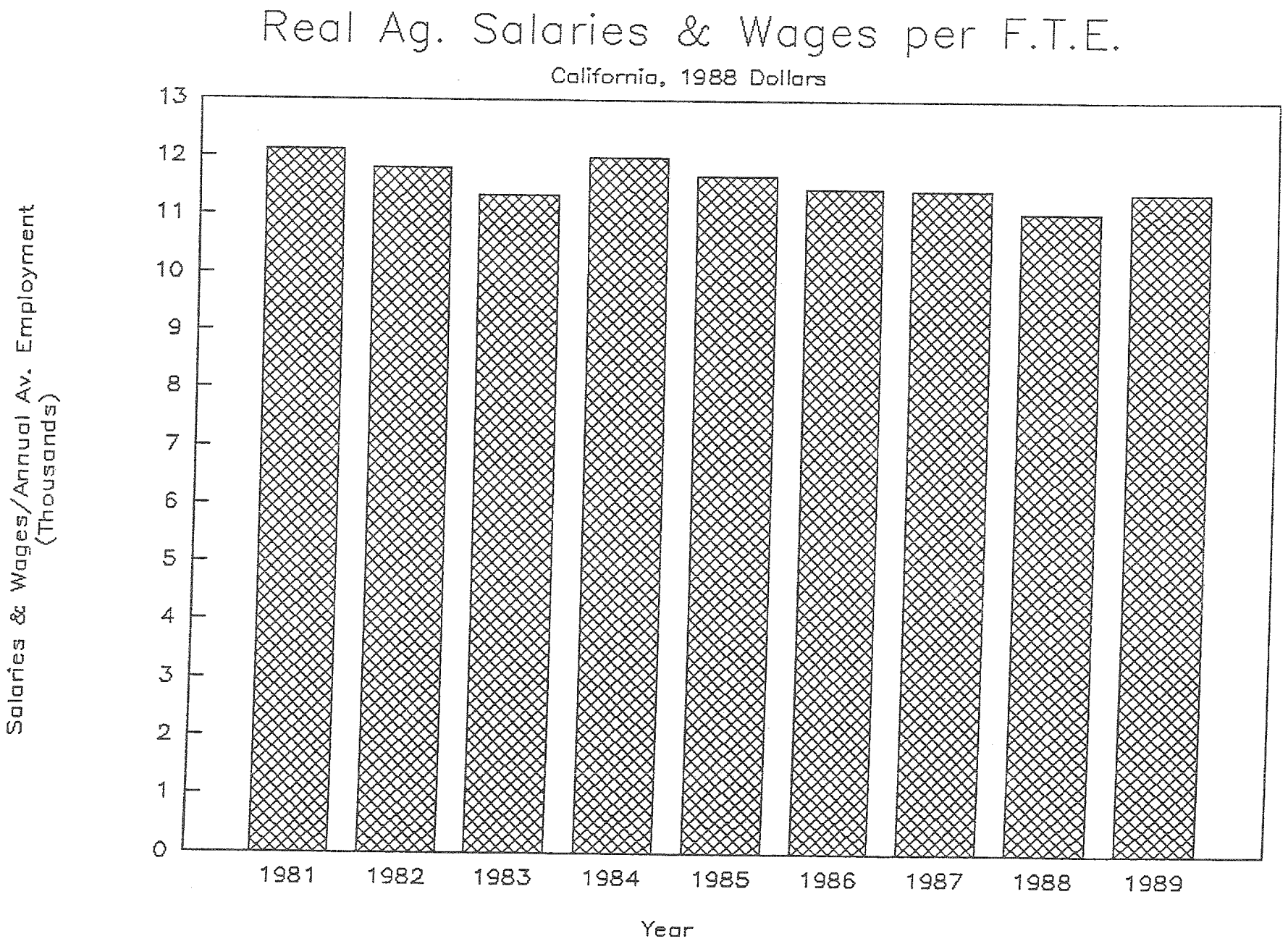

Real Ag. Salaries & Wages per F.T.E.
California, 1988 Dollars
Salaries & Wages/Annual Av. Employment
(Thousands)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
1981
1982
1983
1984
1985
1986
1987
1988
1989
Year

Figure 4

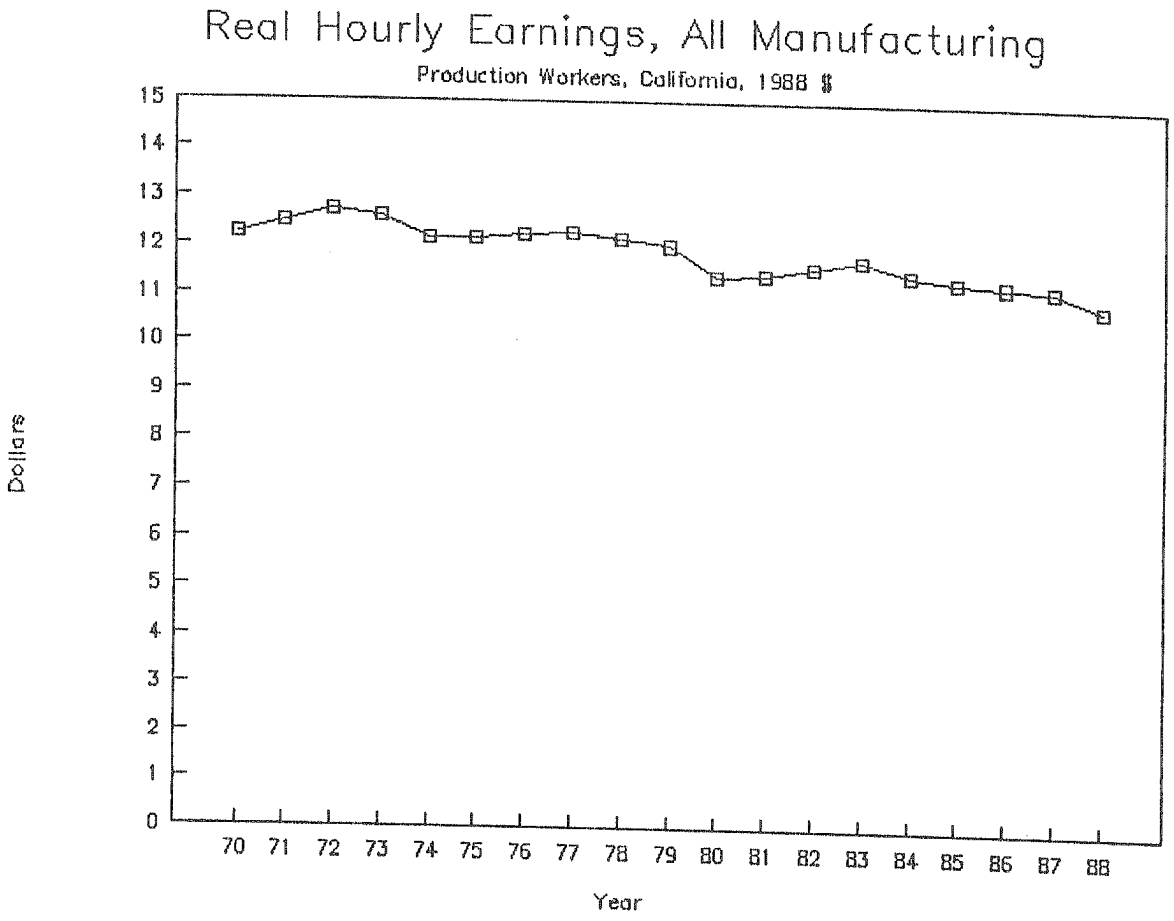

Real Hourly Earnings, All Manufacturing
Production Workers, California, 1988 $
Dollars
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88
Year

Figure 5

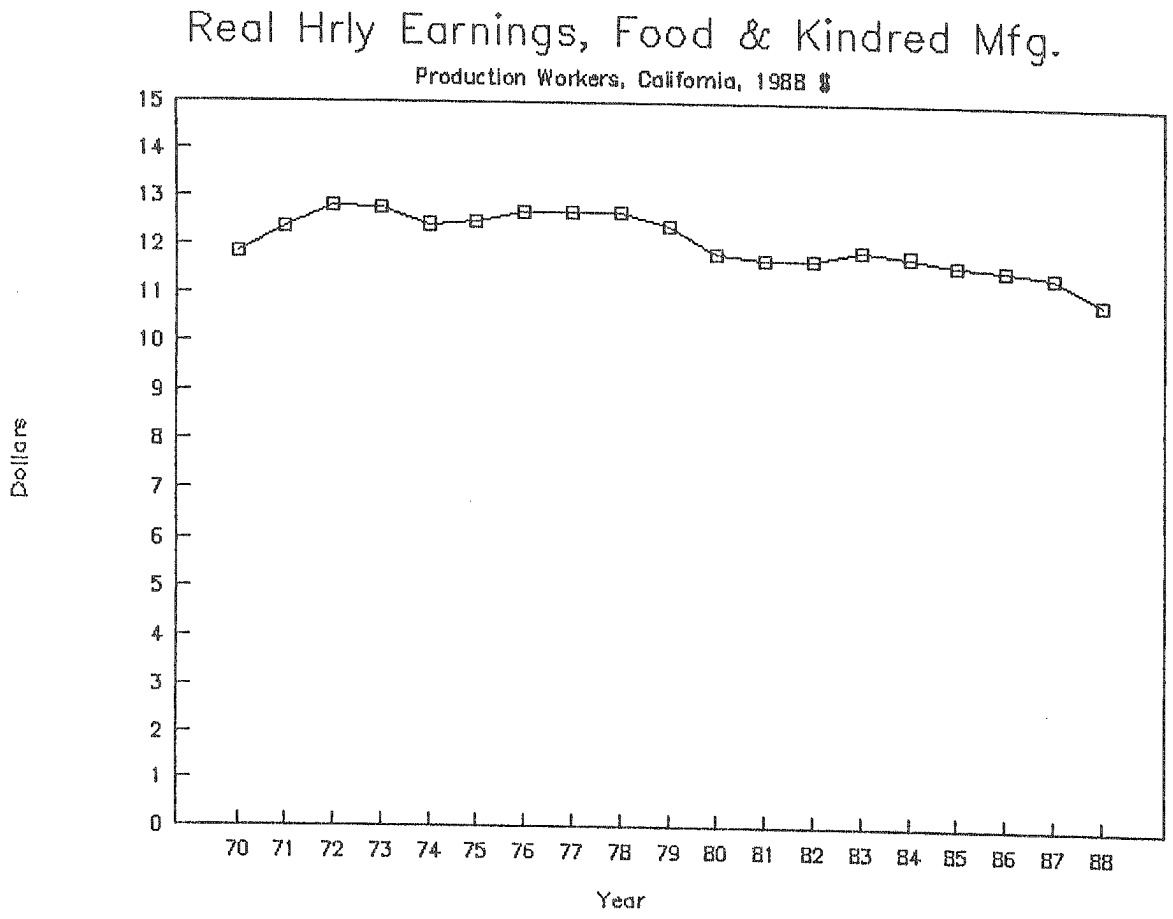

Real Hrly Earnings, Food & Kindred Mfg.
Production Workers, California, 1988 $
Dollars
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88
Year

Figure 6

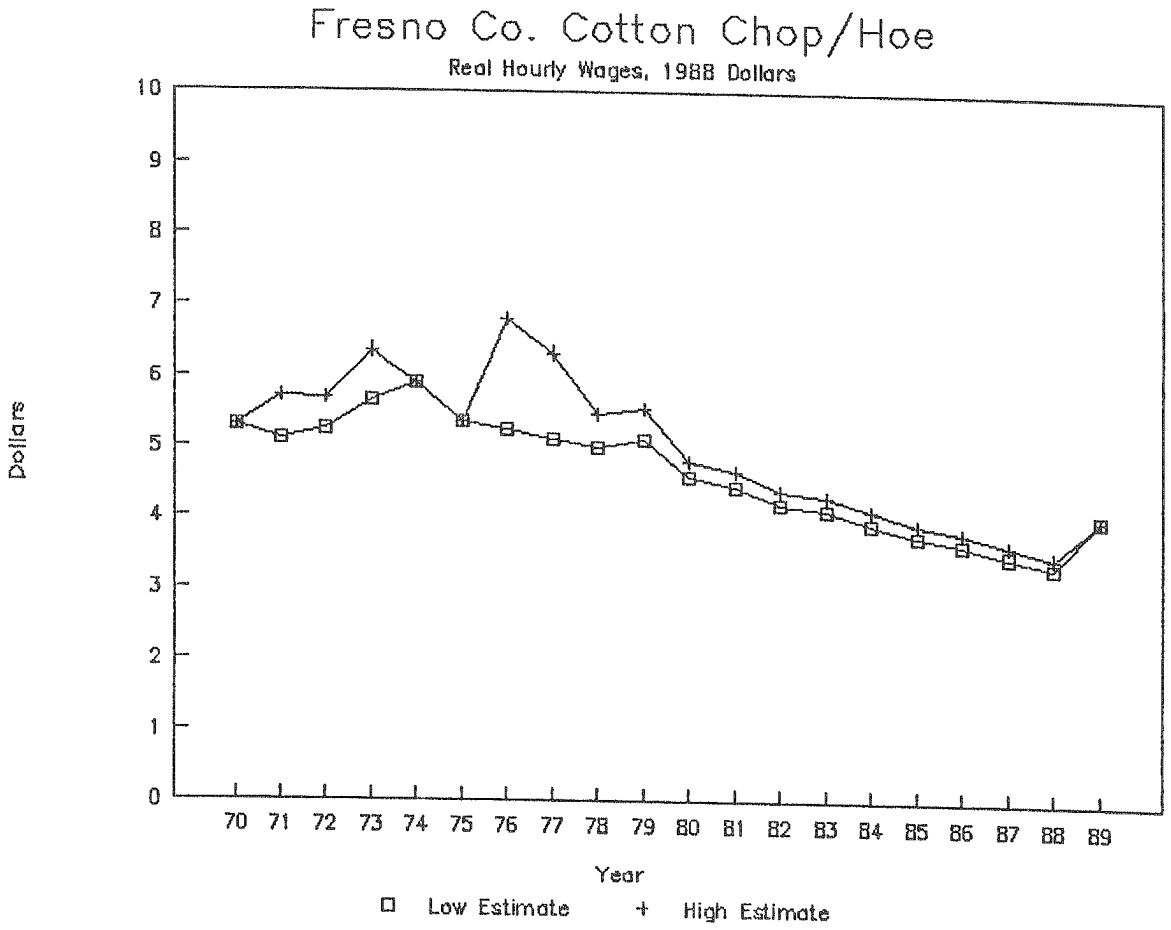

Fresno Co. Cotton Chop/Hoe
Real Hourly Wages, 1988 Dollars
Dollars
10
9
8
7
6
5
4
3
2
1
0
70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89
Year
Low Estimate
High Estimate

Figure 7

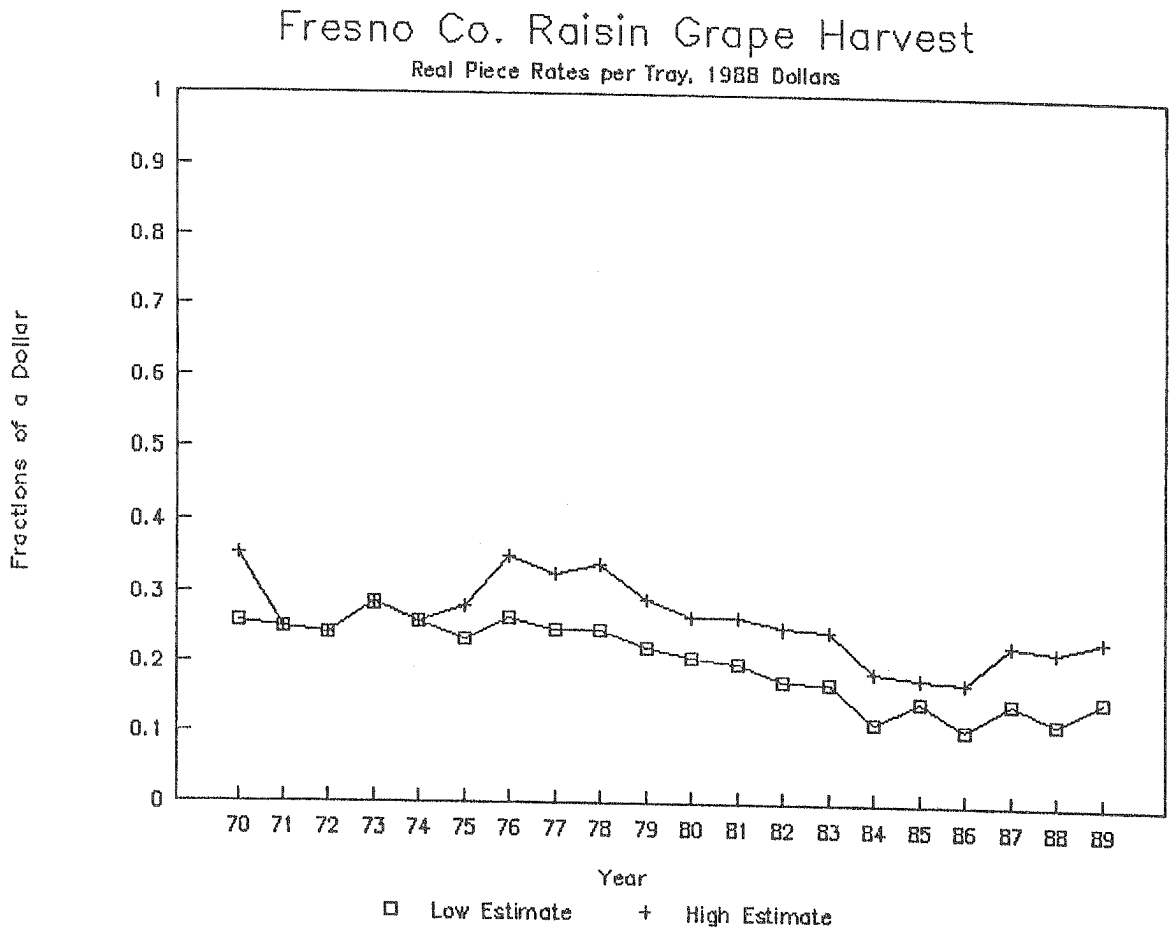

Fresno Co. Raisin Grape Harvest
Real Piece Rates per Tray, 1988 Dollars
Fractions of a Dollar
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89
Year
Low Estimate
High Estimate

Figure 8

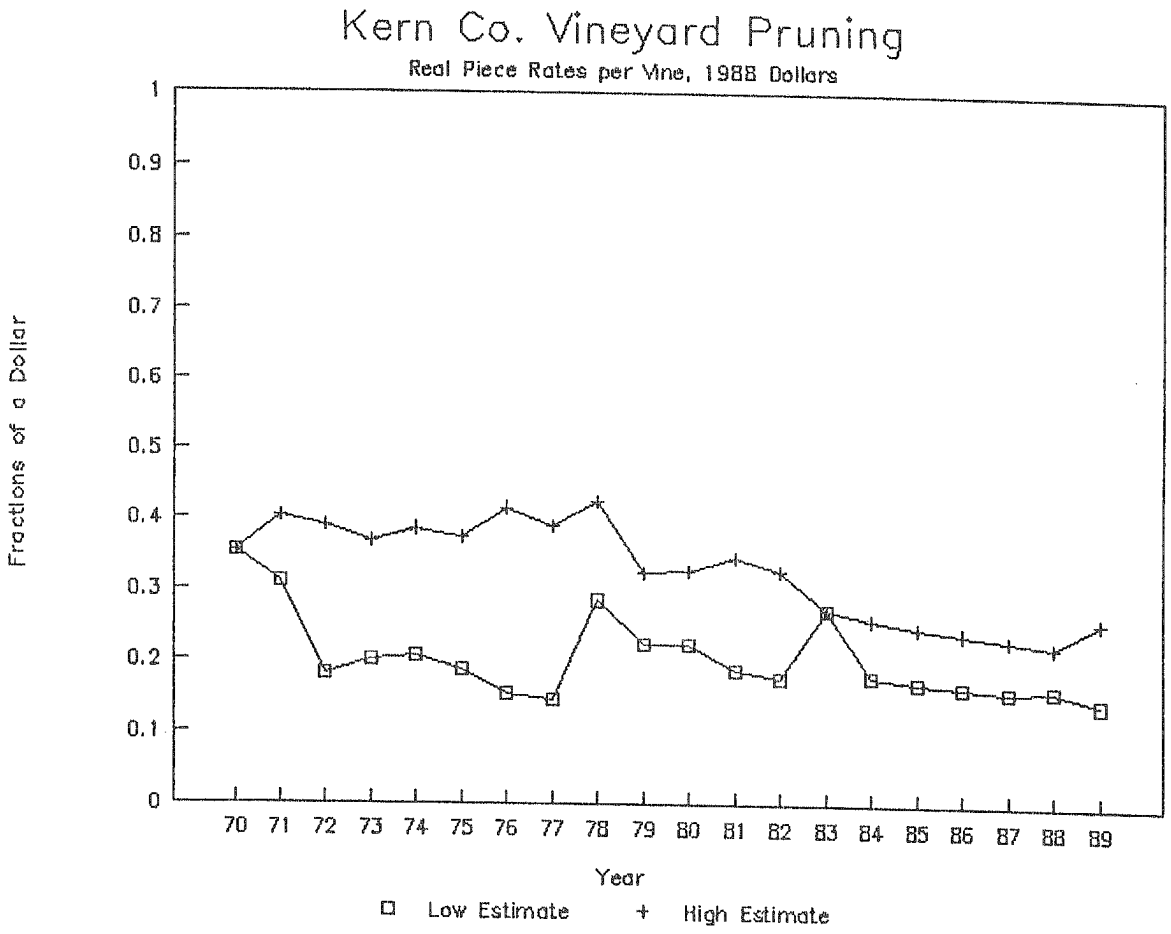
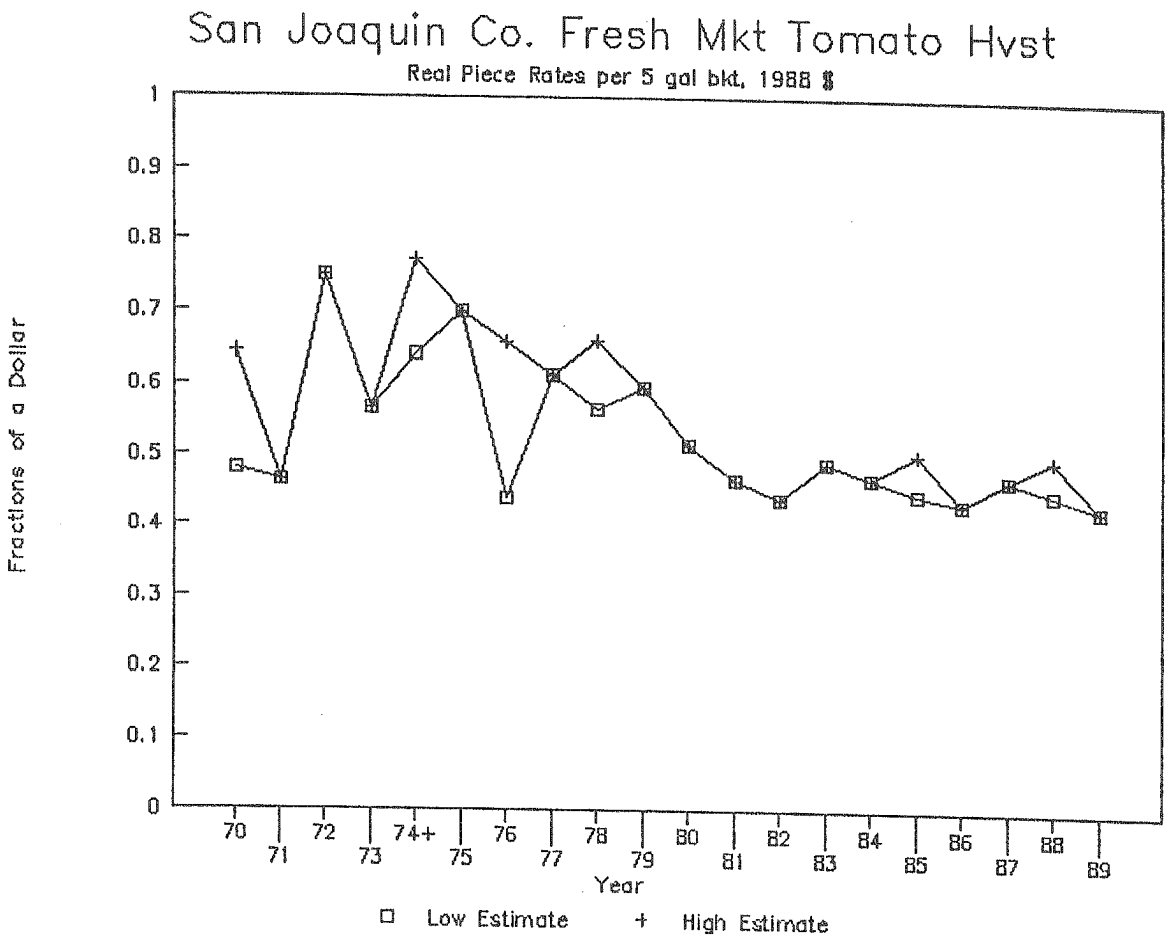

Kern Co. Vineyard Pruning
Real Piece Rates per Vine, 1988 Dollars
Fractions of a Dollar
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89
Year
Low Estimate
High Estimate

Figure 9


San Joaquin Co. Fresh Mkt Tomato Hvst
Real Piece Rates per 5 gal bkt, 1988 $
Fractions of a Dollar
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
70
71
72
73
74+
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
Year
Low Estimate
High Estimate

Sources of Data

I. Farm Labor, U.S. Department of Agriculture, Agricultural Statistics Board, Washington, D.C., quarterly.

II. Farm Employers Labor Service Survey, California Farm Bureau Federation.

III. Report 882 (Quarterly) and Report 882-A (Annual), State of California, Employment Development Division.

IV. California Farm Labor Report 881-A, State of California, Employment Development Division.

V. Ibid.

VI. Ibid.

VII. Ibid.

VIII. California Statistical Abstract, Department of Finance, Sacramento, CA, annual.

IX. Ibid.

I. Farm Labor: Annual Average Wage Rates for Field Workers in California, 1974 - 1988

Worker Title	Farmworker I										
Year	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Hourly Wage	3.47	3.80	4.26	4.44	4.69	4.58	4.91	5.12	5.64	5.90	5.43
Hr Wage, 1988 $	6.57	6.50	6.30	5.92	5.88	5.65	5.77	5.75	6.14	6.17	5.43

II. Farm Employers Labor Service: Average Hourly Wage for General Labor II, California, 1980-90

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Hourly Wage	3.56		4.39	4.22	4.35	4.21	4.41	4.61	4.85	4.83	4.87
Hr Wage, 1988 $	5.27		5.50	5.20	5.11	4.73	4.80	4.82	4.85		

III. Ag wages per full-time-equivalent employee

	1981	1982	1983	1984	1985	1986	1987	1988	1989
UI Data, Current $	9093.71	9418.68	9211.18	10215.41	10412.07	10539.79	10954.08	11061.53	11976.40
W/E, constant $	12128.26	11799.97	11353.31	11996.71	11687.22	11471.43	11451.99	11061.53	11405.65

IV. Fresno Cotton Chop-Hoe

Report Year	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89
Wage Unit	Hourly																			
Low	1.65	1.65	1.75	2.00	2.30	2.30	2.40	2.50	2.65	3.00	3.10	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	4.25
High	1.65	1.85	1.90	2.25	2.30	2.30	3.10	3.10	2.90	3.25	3.25	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	4.25
Wages in 1988 $																				
Hourly low	5.31	5.12	5.25	5.67	5.91	5.36	5.26	5.12	5.02	5.13	4.59	4.47	4.20	4.13	3.93	3.76	3.65	3.50	3.35	4.05
high	5.31	5.74	5.70	6.38	5.91	5.36	6.80	6.35	5.49	5.56	4.81	4.67	4.38	4.31	4.11	3.93	3.81	3.66	3.50	4.05

V. Fresno Raisin Grapes Harvest

Report Year	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89
Wage Unit	tray																			
Low	0.08	0.08	0.08	0.10	0.10	0.10	0.12	0.12	0.13	0.13	0.14	0.15	0.14	0.14	0.10	0.13	0.10	0.14	0.12	0.16
High	0.11	0.08	0.08	0.10	0.10	0.12	0.16	0.16	0.18	0.17	0.18	0.20	0.20	0.20	0.16	0.16	0.16	0.22	0.22	0.25
Wages in 1988 $																				
Piece Rt low	0.26	0.25	0.24	0.28	0.26	0.23	0.26	0.25	0.25	0.22	0.21	0.20	0.18	0.17	0.12	0.15	0.11	0.15	0.12	0.15
high	0.35	0.25	0.24	0.28	0.26	0.28	0.35	0.33	0.34	0.29	0.27	0.27	0.25	0.25	0.19	0.18	0.17	0.23	0.22	0.24

VI. Kern Vyd Pruning

Report Year	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89
Wage Unit	vine																			
Low	0.11	0.10	0.06	0.07	0.08	0.08	0.07	0.07	0.15	0.13	0.15	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.16	0.15
High	0.11	0.13	0.13	0.13	0.15	0.16	0.19	0.19	0.23	0.19	0.22	0.26	0.26	0.22	0.22	0.22	0.22	0.22	0.22	0.27
Wages in 1988 $																				
Piece Rt low	0.35	0.31	0.18	0.20	0.21	0.19	0.15	0.14	0.28	0.22	0.22	0.19	0.18	0.18	0.18	0.17	0.16	0.16	0.16	0.14
high	0.35	0.40	0.39	0.37	0.39	0.37	0.42	0.39	0.43	0.32	0.33	0.35	0.33	0.27	0.26	0.25	0.24	0.23	0.22	0.26

VII. San Joaquin Market Tomato Harvest

Report Year	70	71	72	73	74+	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89
Wage Unit	bucket				5-gal bkt						5-gal bkt									
Low	0.15	0.15	0.25	0.20	0.25	0.30	0.20	0.30	0.30	0.35	0.35	0.35	0.35	0.40	0.40	0.40	0.40	0.45	0.45	0.45
High	0.20	0.15	0.25	0.20	0.30	0.30	0.30	0.30	0.35	0.35	0.35	0.35	0.35	0.40	0.40	0.45	0.40	0.45	0.50	0.45
Wages in 1988 $																				
Piece Rt low	0.48	0.47	0.75	0.57	0.64	0.70	0.44	0.61	0.57	0.60	0.52	0.47	0.44	0.49	0.47	0.45	0.44	0.47	0.45	0.43
high	0.64	0.47	0.75	0.57	0.77	0.70	0.66	0.61	0.66	0.60	0.52	0.47	0.44	0.49	0.47	0.51	0.46	0.47	0.50	0.43

+Anecdotal information obtained from Luis Magana.

VIII. Average Hourly Earnings of Production Workers in Manufacturing in California, by Industry

Industry	Manufacturing (All)																		
Report Year	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88
Av. Hourly Wage	3.80	4.02	4.24	4.45	4.73	5.21	5.59	6.00	6.43	7.03	7.70	8.56	9.24	9.52	9.77	10.12	10.37	10.76	10.86
Wages in 1988 $	12.22	12.47	12.73	12.62	12.16	12.14	12.26	12.29	12.17	12.02	11.39	11.42	11.58	11.73	11.47	11.36	11.29	11.25	10.86

IX. Average Hourly Earnings of Production Workers in Manufacturing in California, by Industry

Industry	Food and Kindred																		
Report Year	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88
Av. Hourly Wage	3.68	3.98	4.27	4.50	4.83	5.35	5.79	6.18	6.70	7.26	8.00	8.78	9.34	9.66	10.06	10.36	10.63	10.93	10.92
Wages in 1988 $	11.84	12.35	12.82	12.76	12.42	12.47	12.69	12.66	12.68	12.41	11.83	11.71	11.70	11.91	11.81	11.63	11.57	11.43	10.92