

Agricultural Machinery Sales Taxes: Are California Farmers Getting A Fair Deal?

by Hoy F. Carman

A comparison of California's sales and use taxes for agricultural machinery and other agricultural inputs with sales and use taxes in other states is the focus of this article. This comparison reveals that California's taxation of agricultural machinery sales is among the highest in the nation. California sales tax treatment for other agricultural inputs is more in line with other states. Among the major non-durable agricultural inputs, California taxes only the sale of chemicals. Other agricultural inputs, including feed, seed, plants (except perennials), fertilizers, livestock, drugs and medicines are exempt from California sales and use taxes.

Federal taxes are assessed in a uniform manner, but the amount and mix of state income, property and sales taxes vary significantly by state. While most states employ all three taxes, there are exceptions. Five states, Alaska, Delaware, Montana, New Hampshire and Oregon do not impose general sales taxes at the state level. Seven states,

Arkansas, Florida, Nevada, South Dakota, Texas, Washington and Wyoming do not have individual income taxes. There is also significant variation among those states with sales and use taxes in terms of rates and items subject to taxation. Many states, including California, allow counties and cities to assess sales taxes, resulting in different tax rates depending on the location of the purchase or home of the purchaser. Rate variation by location combined with exemptions for particular items results in retail sales and use tax payments varying by farm enterprise and purchased inputs, as well as by location.

Sales Taxes for Agricultural Equipment

A comparison by state of sales and use taxes for new and used agricultural machinery sales and rentals, and parts sales, is presented in Table 1. It shows that, among the 45 states that have a statewide sales tax, 33 states exempt new agricultural machinery from sales taxes.

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California is one of the few states to impose sales taxes on agricultural machinery. In 1999, California dealers collected sales taxes totaling almost \$57 million from their agricultural machinery purchasers.

agricultural machinery have reduced rates. Parts for agricultural machinery are taxed in 15 states and only 6 of these states have a reduced rate for parts sales. States that exempt new agricultural machinery from sales taxes but tax parts include Arkansas, Georgia and Nebraska. Mississippi and Wyoming have reduced tax rates for new and used agricultural machinery but charge the full sales tax rate for parts.

Eight of the remaining 12 states that impose sales taxes on new agricultural machinery have reduced rates. Six of the eight states with reduced rates have reductions of 50 percent or greater for agricultural machinery sales. Only four states (California, Hawaii, Nevada and Washington) tax new agricultural machinery sales at the same rate as sales of other items. Recall that among these four states, neither Nevada nor Washington has state income taxes. Washington's statewide sales and use tax rate is 6.5% but local taxes can raise the total to 8.6% in some local jurisdictions. California has the second highest rate for agricultural machinery, with a statewide rate of 6%, and county, local and special district taxes that increase the rate to a range of 7.25 to 8.5%. Nevada's combined state and local tax rate ranges from 6.5 to 7%, while Hawaii's statewide general excise tax is 4%. A California farmer often pays the highest amount of sales taxes on a given new equipment transaction since California is the only state that taxes the gross amount of the sales price, even if there is a trade-in. All other states that tax agricultural machinery sales, even at a reduced rate, deduct the amount of any trade-in and apply the sales tax to the net price.

The sales tax situation for used agricultural machinery and for machinery rentals is similar to new machinery, but with one difference. Arizona, which exempts new agricultural machinery from sales taxes, charges the full sales tax rate on used agricultural machinery and on agricultural machinery rentals. Overall, 32 states exempt used agricultural machinery sales and rental from sales taxes, and eight of the remaining 13 states that impose sales taxes on new

Sales Taxes for Other Agricultural Inputs

The sales tax treatment of other major agricultural inputs varies by input and by state, but overall the situation is more favorable to agriculture than is the taxation of agricultural machinery. Only one state, Hawaii, taxes all agricultural inputs. Note that Hawaii's general excise tax of 4% has very few exemptions or exclusions. An examination by state for individual inputs reveals that Hawaii is the only state that imposes a tax on the sale of feed and seed used by agricultural operations. Hawaii is joined by Maine and South Dakota in taxing the sales of plants used in agriculture; and by Arizona and South Dakota in taxing fertilizers used by farmers. Only six states (Arizona, California, Colorado, Hawaii, Nevada and Wyoming) tax agricultural chemicals used by farmers.

Some Economic Impacts of Sales Taxes and Tax Exemptions

Economists, using competitive market assumptions, have demonstrated that sales and excise taxes reduce consumption and use of taxed items by changing relative price ratios. The impact on the quantity demanded of a taxed item depends, of course, on the availability and substitutability of alternative goods and inputs. Differential taxation of agricultural inputs can be expected to have several economic effects. In the case of agricultural machinery, for example, California's comparatively high tax rate certainly increases the cost of the machinery component of crop production when compared to other lower tax rate states producing the same crops.

Table 1. Taxes on Sales, Rentals and Parts for Farm Machinery

State	State Sales Tax Rate	Local Taxes	Typical Combined Tax Rate	----- Tax Rate on -----				Value of Trade-In
				Agricultural Machinery New	Used	Parts	Rentals	
Alabama	4%	Yes	5 - 8%	1.5%	1.5%	1.5%	1.5%	No
Arizona	5%	Yes	5.5 - 7.2%	E*	TAX**	E	TAX	No
Arkansas	4.63%	Yes	6.125 - 8.50%	E	E	TAX	E	
California	6%	Yes	7.25 - 8.125%	TAX	TAX	TAX	TAX	Yes
Colorado	3%	Yes	4 - 6.75%	E	E	E	E	
Connecticut	6%	No	6%	E	E	E	E	
Florida	6%	Yes	6 - 7.5%	3%	3%	3%	3%	No
Georgia	4%	Yes	5 - 7%	E	E	TAX	E	
Hawaii	4%	No	4%	TAX	TAX	TAX	TAX	No
Idaho	5%	Yes	5 - 7%	E	E	E	E	
Illinois	6.25%	Yes	7 - 8.75%	E	E	E	E	
Indiana	5%	No	5%	E	E	E	E	
Iowa	5%	Yes	6%	E	E	E	E	
Kansas	4.90%	Yes	5.9 - 7.4%	E	E	E	E	
Kentucky	6%	No	6%	E	E	E	E	
Louisiana	4%	Yes	7 - 9.5%	E	E	E	E	
Maine	5%	No	5%	E	E	E	E	
Maryland	5%	No	5%	E	E	E	E	
Massachusetts	5%	No	5%	E	E	E	E	
Michigan	6%	No	6%	E	E	E	E	
Minnesota	6.50%	Yes	6.5 - 7.5%	E	E	E	E	
Mississippi	7%	No	7%	1 - 3%	1 - 3%	7%	1 - 3%	No
Missouri	4.225%	Yes	4.725 - 7.5%	E	E	E	E	
Nebraska	5%	Yes	5 - 6.5%	E	E	TAX	E	
Nevada	6.50%	Yes	6.5 - 7%	TAX	TAX	TAX	TAX	No
New Jersey	6%	No	6%	E	E	E	E	
New Mexico	5%	Yes	5 - 6.94%	2.5 - 3.47%	2.5 - 3.47%	2.5 - 3.47%	2.5 - 3.47%	No
New York	4%	Yes	7 - 8%	E	E	E	E	
N. Carolina	4%	Yes	6%	1%	1%	1%	1%	
N. Dakota	5%	Yes	6 - 7%	3%	1.5%	1.5%	3%	No
Ohio	5%	Yes	5.5 - 7%	E	E	E	E	
Oklahoma	4.50%	Yes	5 - 9.5%	E	E	E	E	
Pennsylvania	6%	Yes	6 - 7%	E	E	E	E	
Rhode Island	7%	No	7%	E	E	E	E	
S. Carolina	5%	Yes	5 - 6%	E	E	E	E	
S. Dakota	4%	Yes	5 - 8%	3%	3%	3%	3%	No
Tennessee	6%	Yes	7 - 8.75%	E	E	E	E	
Texas	6.25%	Yes	6.75 - 8.25%	E	E	E	E	
Utah	4.75%	Yes	5.75 - 7.5%	E	E	E	E	
Vermont	5%	No	5%	E	E	E	E	
Virginia	3.50%	Yes	4.50%	E	E	E	E	
Washington	6.50%	Yes	7 - 8.6%	TAX	TAX	TAX	TAX	No
W. Virginia	6%	No	6%	E	E	E	E	
Wisconsin	5%	Yes	5 - 5.5%	4%	Yes	4 - 6%	3 - 5%	
Wyoming	4%	Yes	4 - 6%	3 - 5%	3 - 5%	TAX	3 - 5%	No

*E designates that the item is exempt from sales tax in that state.

**TAX indicates that the item is taxed at the full tax rate in that state.

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Machinery Taxes—continued from page 3



Large ticket farm machinery purchases include substantial sales tax payments. For example, a California farmer who purchased a tractor for \$100,000 in 1999 paid another \$7,250 in sales taxes.

The expected producer reaction to higher agricultural machinery prices is to attempt to substitute other inputs for machinery, to choose crops with lower machinery requirements, and to purchase less machinery, although we do not know how much less. California farmers and ranchers purchase significant amounts of agricultural machinery from sellers in other states for use in California. Since most of this agricultural machinery is not subject to sales taxes when purchased in other states, it is subject to California's use tax when brought into California. A recent survey of California farm equipment retailers asked each dealer to estimate the value of new and used equipment purchased out-of-state in 1999 by producers located in the dealer's primary market area. Separate estimates were made for new and used machinery and for brands carried by the dealer and for other brands. After removing overlaps for brands and market areas, dealer respondents estimated that California producers purchased over \$103 million worth of new and used farm equipment in other states for use in California during calendar year 1999. This is almost 17 percent of estimated total new and used agricultural equipment purchases by California producers.

California's sales and use tax on farm machinery and equipment raises significant revenues that are shared by the state, counties, cities and special tax districts. The basic state, county and city tax rates are 6.00%, 0.25% and 1.00%, respectively. Special tax districts impose a tax of up to 0.50% that is added to the basic statewide sales and use tax of 7.25%. Note that a particular location may be in more than one tax district, producing the maximum combined local tax rate of 8.50% shown in the table. Based on a recent survey, California farmers purchased almost \$785 million worth of new and used agricultural machinery,

parts and rentals from California dealers during 1999 and another \$103 million of new and used agricultural machinery from out-of-state for total taxable purchases of \$888 million. Using the basic statewide sales tax rate of 7.25%, California farmers had a sales and use tax obligation for agricultural machinery of over \$64 million in 1999.

California consumers and farm machinery purchasers will get a small tax break during calendar year 2001. Effective January 1, 2001, California's minimum combined state, county and local sales and use tax rate decreased from 7.25% to

7.00%. This was a result of 1991 legislation that requires a 0.25% reduction in the statewide sales and use tax rate if the state reserves exceed 4% of general fund revenues for the prior fiscal year and are estimated to do so for the current year. The same 1991 legislation requires that the 0.25% tax be re-imposed the year following any November 1 that reserves are again estimated to fall below 4% of general fund revenues.

As mentioned, California is the only state that taxes the gross amount of the sales price for agricultural machinery, even if there is a trade-in. A very conservative estimate placed 1999 California agricultural machinery trade-ins at about \$31 million. Thus, this "double taxation" cost California farmers almost \$2.25 million in sales taxes during 1999.

Bringing California sales and use tax treatment of agricultural machinery and parts sales in line with other states has significant cost implications for California farmers. Assuming that 1999 was a normal year, total exemption for farm machinery, equipment and parts sales and trade-ins would reduce annual sales and use taxes by over \$64 million. This would put California farmers on par with their competitors in 38 other states and would be a significant step toward improving California agriculture's ability to compete both nationally and internationally. Even partial exemption from sales taxes, as occurs in eight other states, would help California farmers compete. Reduced sales taxes would also increase sales by California agricultural machinery dealers, increasing their employment and local economic contributions.

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Iowa Producers' Adoption of Bio-Engineered Varieties: Lessons for California

by Corinne Alexander, Jorge Fernandez-Cornejo and Rachael E. Goodhue

The rapid emergence of genetic engineering and associated techniques, popularly referred to as biotechnology, has led to much public debate over the value and safety of these technologies, particularly in food production. This debate resonates in California, home to consumers, food producers and biotechnology innovators. While useful bio-engineered traits are still largely unavailable for major California crops, we attempt to identify the factors likely to influence the use of such traits by California producers, when they do become available, by examining the decisions of Iowa corn and soybean producers, who already have access to a number of specialized traits. The two most commonly planted genetically modified (GM) crops are Roundup Ready soybeans which is resistant to the Roundup herbicide, giving producers access to an inexpensive, effective, broad spectrum herbicide, and Bt corn, which is genetically modified to produce an insecticidal protein that kills the European corn borer, providing more complete protection than chemical insecticides.

As part of an ongoing project on understanding corn producers' adoption of hybrids with specialized quality traits and specialized production traits, we conducted interviews, focus groups and a survey with Iowa corn producers during 1999 - 2000 in cooperation with the Iowa Farm Bureau Federation. We conducted seven interviews and one focus group with producers in south central Iowa and two focus groups with producers in north central Iowa. We also conducted a survey of 1,000 Iowa Farm Bureau members, and received 389 usable responses.

One purpose of this work was to gain a sense of the forces affecting spring 2000 planting decisions. In our discussions we found three factors that appeared to especially influence

planting decisions in 2000: first, low grain prices and other financial difficulties in the farm sector; second, previous experiences with specialized traits, such as Bt corn; and third, anticipated market opportunities. Planting decisions appear to vary by area and crop. For output traits, farmers in the different areas have different marketing opportunities for specialty crops, such as food grade corn and tofu soybeans. For input traits, different areas have different expected yields, which affects the benefit of Bt corn, among other traits.

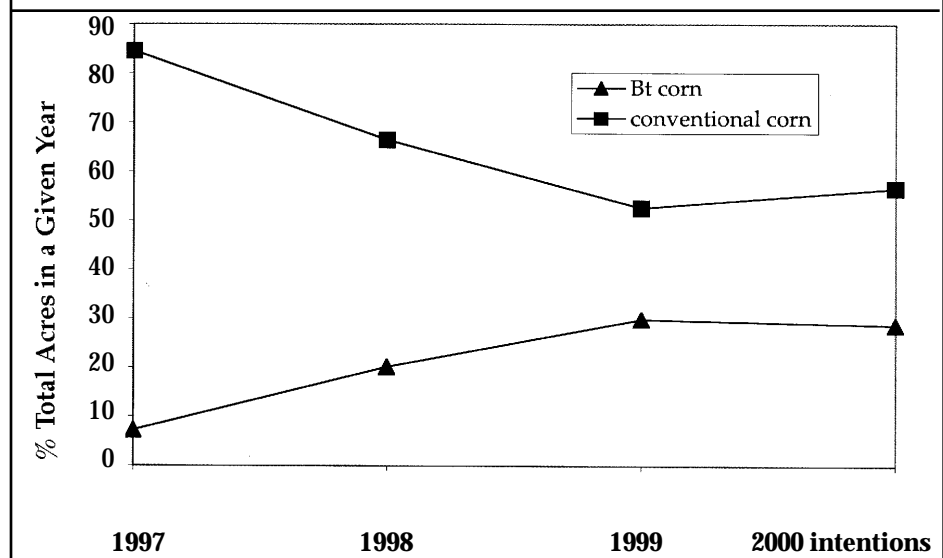
Previous Experience with Specialized Traits

Producers' previous experience with specialized traits played an important role in their plans for 2000. These experiences varied by trait and, to some extent, by area.

Roundup Ready soybeans appear to be the most widely used, most successful product. In our southern Iowa focus group, all participants planted 100 percent Roundup Ready soybeans in 1999. While this was the highest rate of use, producers in other areas also utilized Roundup Ready soybeans extensively.

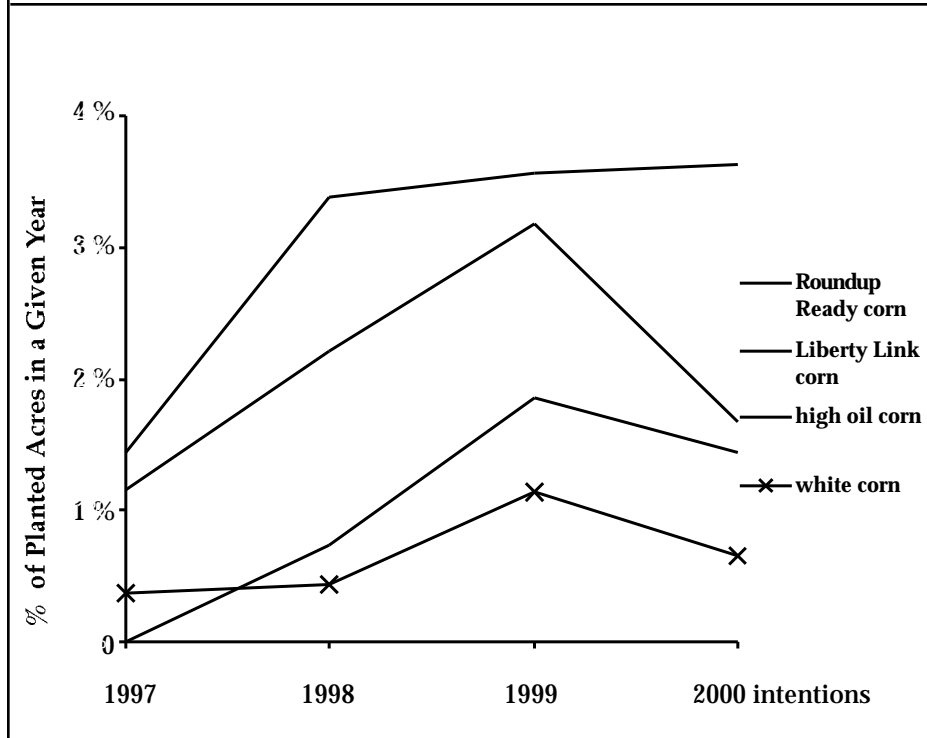
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Figure 1. Percent of Total Acreage Planted to Bt Corn and Conventional Corn: 1997 - 2000 Planting Intentions



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Figure 2. Percent of Total Corn Acreage in Herbicide Tolerant Corn and Specialized Corn: 1997 - 2000 Planting Intentions



"I like to plant an early corn and it doesn't stand up well, but the Bt of the same variety stands up well."

"'97 and '98, both years there was a lot of stalk rot in the Bt corn. It didn't matter what company or what the number was."

In general, focus group participants viewed Bt corn as insurance against corn borers. Corn borer infestations have been light the past two years, so many feel that planting Bt has not paid off. Others still view it as a reasonably cheap option. Some people are planning to reduce the percentage of Bt corn planted, in part due to the lack of a perceived benefit, in part due to the higher seed expense and in some cases in part due to concern over finding buyers. Other farmers in southern Iowa said that they were reducing

Very few producers anticipated reducing their use of Roundup Ready soybeans for 2000. A number of reasons for its popularity were offered, most of which centered on the relative cheapness, the simplicity of the weed management program and the effectiveness of the weed control.

"I plant 100% Roundup beans. That's got to be the best program out there."

"Well, the cost is a big thing, too. It's simple, so simple."

"Look at it from the safety standpoint of the producer. We're either spraying Roundup, which is not nearly as lethal as a lot of the other chemicals...and once Roundup hits the ground, it's done. So, from the safety standpoint, it's a win-win situation for everyone."

Producers had a mixed experience with Bt corn. For some it performed very well and was their best corn. For others, it was consistently their worst performing corn.

"I had some Bt this year. It was my best corn."

their Bt acreage because the most promising new hybrids didn't contain the gene.

"Ever since the Bt technology, it's just taken the worry out of it. I think it's very cheap insurance."

"We're in a low pressure time and it came right after [Bt] was introduced. For the first two years, everybody wanted it. You can make a case for it but just barely and last year was worse."

"I reduced [my acreage in Bt because] I don't think it's paying its way as far as the corn borer part of it."

Overall, our focus group findings did not establish a distinct trend regarding the use of GM seed. For corn, most intend to continue using genetically modified organisms (GMO's) unless a premium emerges for non-GMO's. For soybeans, very few plan to reduce their use of GMO's. Even so, some plan to delay their final seed decision, in order to see the effects of the GMO controversy. Unless there is a significant development before planting season, the net effect on hybrid choices and acreage allocation is likely to be relatively small.

"I purchased all non-Bt because I figured if I wanted Bt, I could always get it later. But the non-Bt, I thought might be kind of scarce."

"I'd like to see if they're going to pay a premium for this non-GMO."

Farmers' adoption of output traits varied by area, based on market opportunities. Farmers in our northern Iowa focus groups either never planted specialized corn or no longer do so, since transportation costs are too high to allow them to compete with central Iowa farmers. Some do plant specialized soybeans, including tofu beans and seed beans. Farmers in our southern Iowa group had more experience with specialty traits. They noted that specialty premiums tended to decline over time, and specifically cited high oil corn and white corn as examples.

"[High oil] kind of varies from year to year, I think, on how you contract. Contracts are really spotty. Same way on the white corn."

"Everybody talks about added value and the added value erodes after the first season. It's been that way, it's a proven track record. They've trained us to believe that added value will not persist, so why would everybody think added value is great?"

Low Commodity Prices

Producers said that they were very concerned about low commodity prices and financial difficulties for the 2000 production year. Particularly in the southern Iowa focus group, low prices were significantly altering farmers' production decisions for 2000 relative to 1999. For instance, one farmer plans to keep his variable input costs below \$50/acre.

"If we grow as good a crop next year as we have the last two years nationwide, it will go from a serious problem to a critical problem and we'll be back into headaches similar to what we experienced in '84 to '86."

"I really think it's going to be worse [than '84 to '86] because the inputs are so much higher than they were back then. The only difference that's in our court is that the interest rates are low."

"If it weren't for these government checks, we'd be gone now."

Lessons for California

Clearly, there are significant differences between the producers we examined and most California producers. Government commodity programs are far more significant to Iowa producers than to California producers.

Iowa producers have a smaller number of viable alternative crops. On the other hand, there are common factors. California has also suffered from low prices for major commodities in recent years. Producers' acreage allocation decisions are strongly influenced by market opportunities for different crops. Due to the importance of microclimate considerations, California producers are likely to weigh previous experience with a given crop even more heavily than Iowa producers.

Overall, California producers will weigh the costs and benefits of producing GM crops in a similar fashion. As in Iowa, economic conditions in the agricultural sector and previous experience with specialized traits will likely play an important role. Relative to Iowa, however, market opportunities likely will dominate these factors for California producers. Relative to mid-western producers, California producers generally have much closer contact with the buyers and ultimate users of their crops. This should facilitate pre-planting coordination and reduce uncertainty. Producers already customize production based on buyer requirements. These factors, coupled with the later introduction of GM varieties into California agriculture, suggest that California producers' adoption or non-adoption of GM varieties will be in response to customer demand. If buyers are unwilling to purchase GM varieties, producers are unlikely to plant them.

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Farm Labor: Twenty-First Century Challenges

by Philip L. Martin

In 1902, fruit grower H.P. Stabler said: "Labor is the [farmer's] problem of the twentieth century." In 2001, many California growers are echoing Mr. Stabler, saying that the cost and availability of labor are major twenty-first century challenges for farmers.

There are three safe predictions about farm labor over the next five to ten years:

The seasonal hired farm work force will consist largely of immigrants, persons between the ages of 18 and 35 born abroad who enter the U.S. to do farm work.

For most immigrant farm workers, being employed seasonally on the state's farms is a job, not a career. Annual turnover of at least 10 percent means that 80,000 to 90,000 new immigrant farm workers must enter the farm work force to keep the same number of workers available.

Farm labor will remain controversial, with regular debates over farm employer access to foreign workers and government regulation and enforcement of labor, immigration and tax laws.

Farm Employment

Employment on California farms varies from month to month. In 1999, the most recent data available, the employment of hired workers on California farms peaked in August at 522,000 and reached a low of 307,000 in January. This produces a peak-trough ratio of 1.7, which means that 170 workers are employed on farms in August for each 100 workers hired in January.

Farm employment averaged 418,000 in 1999, including an average 235,000 workers hired directly by crop and livestock farmers (56 percent) and 183,000 hired by agricultural service firms such as labor contractors and farm management companies (44 percent). The total number of workers employed on California farms sometime during the year is about twice the average employment.

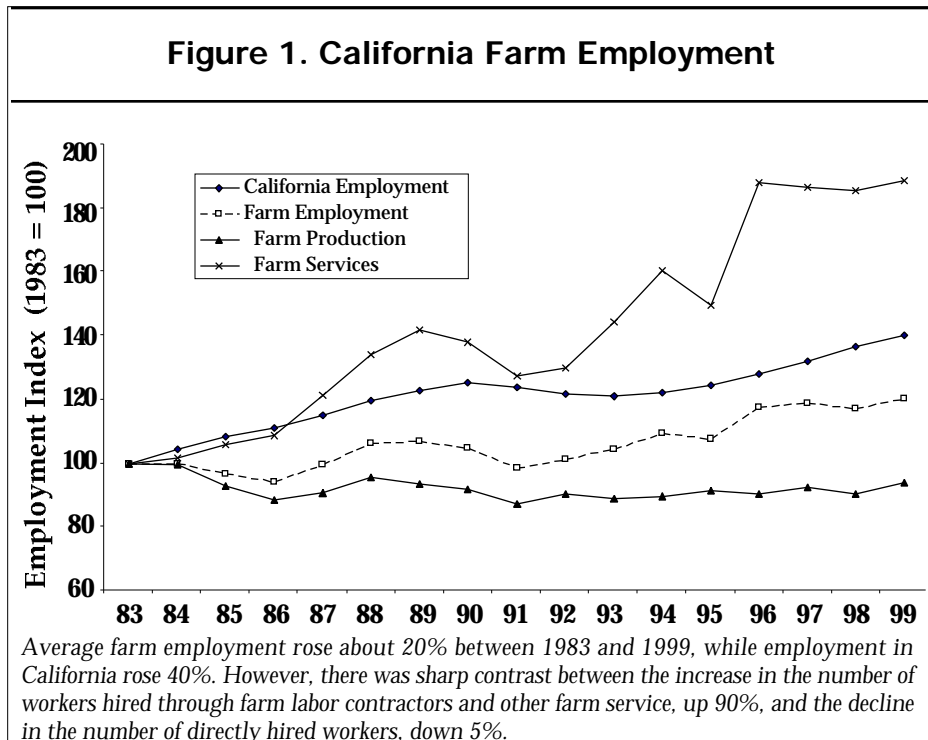
The farm labor question for most of the twentieth century was who would bear the cost of seasonality, who would take care of seasonal workers when they were not needed on farms? The answer has traditionally been workers without other job options—they were willing to accommodate to seasonality because most could not get nonfarm jobs due to lack of English, contacts in cities or skills. In 2000, about 95 percent of seasonal workers employed on California farms were born outside the U.S., and new entrants to the seasonal farm work force are almost 100 percent immigrants.

Wages and Benefits

The California minimum wage rose from \$5.75 to \$6.25 an hour January 1, 2001, and is scheduled to rise to \$6.75 in January 2002. In Oregon and Washington, the minimum wage is \$6.50, and seven other states, including Alaska and Hawaii, have minimum wages above the federal minimum of \$5.15 an hour.

Many farmers pay entry level farm workers, such as those employed in thinning and weeding crews, the minimum wage. Harvest workers are often offered a higher than minimum wage or paid piece rates, that is, harvest workers are guaranteed the minimum wage, but paid according to how much work they accomplish

Figure 1. California Farm Employment



About three-fourths of California farm employers pay hourly wages; as the minimum wage has risen, many farmers switched to hourly wages to minimize record-keeping required with piece rates. The average hourly earnings of farm workers as reported by USDA, \$7.56 an hour in California in 2000, reflect wages paid under the diverse pay systems used in agriculture.

In addition to wages, U.S. employers pay social security and other taxes on their workers' earnings, and many provide other fringe benefits. During the 1990s, payroll taxes and fringe benefits averaged 27 percent of total compensation in the U.S. private sector. The total cost of employing workers in the private sector was \$19 an hour in March 1999, including \$13.87 an hour in wages and salaries (73 percent) and \$5.13 an hour in benefits (27 percent).

Most farm employers do not provide many non-mandatory fringe benefits; benefits such as health insurance can be a very significant fraction of earnings in a low-wage industry such as agriculture. The state agency that enforces labor relations laws, the Agricultural Labor Relations Board (ALRB), assumes that unionized farm employers provide non-mandatory benefits that add at least 15.7 percent to wages (excluding mandatory social security, unemployment insurance and workers compensation). The dominant farm worker union, the United Farm Workers (UFW), has about 30 contracts covering 7000 jobs on California. The largest UFW contract covers a peak 1,400 workers at Bear Creek (Jackson and Perkins Roses), where fringe benefits exceed 16 percent, i.e., the \$1.20 per hour that Bear Creek paid for workers to be covered under the UFW's RFK health plan in 1999 added 16 percent to the cost of a \$7.50 per hour worker.

Challenges: Unions, Immigration

There could be significant union organizing activities in the next 10 years, since the AFL-CIO has made organizing immigrant workers one of its top priorities. The UFW changed its organizing strategy in the mid-1990s, targeting the estimated 20,000 workers employed to harvest strawberries in the Watsonville and Oxnard areas. After elections in 1998 and 1999, the UFW won the right to represent 700 workers employed by the largest U.S. strawberry grower, Coastal Berry, in Oxnard, while a local union won the right to represent 800 Coastal Berry workers in Watsonville.

The UFW, which reported 26,000 members and \$1.7 million in member dues in 1999, dropped the provision in its constitution that restricts it to organizing



Strawberry workers have been in the forefront of farm labor issues because it is a high-value, year-round and labor-intensive crop.

farm workers, and won an election to represent 300 furniture workers in Bakersfield in November 2000. The UFW is expected to move from the fields and seek to represent workers employed in canneries, citrus packing and meat packing.

Court decisions have blurred the lines between farm and nonfarm work. The major law regulating private-sector labor relations is the National Labor Relations Act (NLRA) of 1935, which excludes farm workers. California's Agricultural Labor Relations Act of 1975 is a residual law that covers workers excluded by the NLRA. In the 1990s, the National Labor Relations Board (NLRB) which administers the NLRA, concluded that packing activities in the field can be done by nonfarm workers, so that a lettuce crew could have cutters who are farm workers and packers who are nonfarm workers. Indeed, workers could be both farm and nonfarm workers in the course of a day if they switched between cutting and packing.

Farmers who pack only the produce they grow could turn some of their workers into nonfarm employees by regularly buying a small amount of outside produce, as was the case of a mushroom farm that regularly bought exotic mushrooms to offer a more complete selection to retailers.

The changing line between farm and nonfarm work may encourage "nonfarm unions" such as the Teamsters and the United Food & Commercial Workers to step up their efforts to represent farm workers, especially if the UFW moves aggressively to represent nonfarm workers. Competition between unions to represent a group of workers usually ends up with the workers being represented by a union.

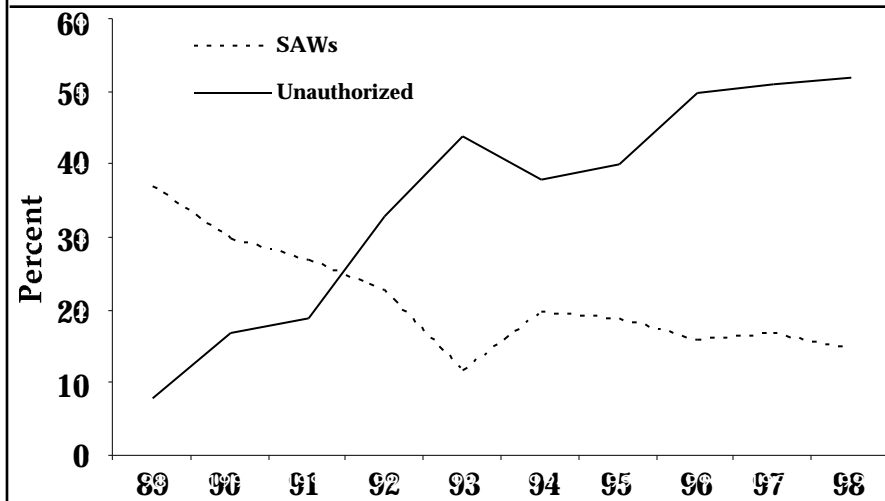
FARM LABOR—continued on page 10

At least half of California's farm workers are not authorized to work in the United States. Since the mid-1980s, immigration enforcement in agriculture has changed from a people chase to paper chase. Instead of driving through fields and apprehending workers who run away, immigration enforcement today usually involves the Immigration and Naturalization Service (INS) inspecting the I-9 forms that employers and newly hired workers must complete, and the INS telling employers which workers appear to be unauthorized.

When the INS inspects employee records, there appear to be a high percentage of unauthorized workers. For example, the INS examined the employee records of 71 Stockton area farm labor contractors in 2000, reviewed 10,628 worker records, and found that 7,509 or 71 percent of the employees appeared to be unauthorized. There were 15,000 workers reported to the Employment Development Department by all agricultural service firms in June 2000 in San Joaquin county. However, the General Accounting Office examined INS enforcement practices and priorities and concluded that "a sudden, widespread farm labor shortage requiring the entry of large numbers of foreign workers continues to be unlikely now or in the near future, although localized shortages could emerge for specific crops or geographic areas."

Farmers fearful of enforcement-related labor disruptions have been pressing in Congress for a new guest worker program that would make it easier to obtain foreign workers. Under the current H-2A program, named after the section of immigration law in which it is found, farmers must convince the U.S. Department of Labor, on a job by job basis, that they tried and failed to find U.S. workers despite offering a Department of Labor-set Adverse Effect Wage Rate (AEWR) of at least \$7.56 an hour in California in 2001. Farmers must also attempt to recruit U.S. workers via the Employment Services' Interstate Clearance System, which requires that farm employers offer free approved housing to all out-of-area workers—if U.S. workers cannot be found, the housing is occupied by H-2A workers. Farmers without approved housing do

Figure 2. Shares of Legalized and Unauthorized U.S. Farm Workers: 1989 - 98



In 1987-88, some 1.1 million unauthorized farm workers were legalized as Special Agricultural Workers (SAWs), including 550,000 in California. It was assumed that employer sanctions would stop further illegal immigration, and that farm employers would have to raise wages and improve benefits to retain SAWs. This did not happen, as SAWs who left the farm work force were replaced by unauthorized workers.

Source: National Agricultural Workers Survey (<http://www.dol.gov/dol/asp/>)

not apply; 99 percent of employer requests for certification are approved by DOL.

The new guest worker program desired by farmers is the AgJOBS or the Agricultural Job Opportunity Benefits and Security Act, which would eliminate: (1) the DOL's role in certifying the need for foreign workers to fill vacant U.S. farm jobs; (2) the Adverse Effect Wage Rate; and (3) the need to provide free housing to out of area workers (farmers could provide a housing allowance instead of housing). Congress in 2000 did not approve AgJOBS, but the elections of U.S. President Bush and Mexican President Fox might set the stage for new thinking about guest workers, since both favor a new agricultural guest worker program.

Conclusion

Labor continues to be the major "controllable" expense for many California farmers. Future farm workers are growing up outside the U.S. and the major challenge for twenty-first century farmers is likely to be the terms under which growers get access to foreign workers.

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ARE Faculty Profile

Catherine Morrison Paul was born in Champaign, Illinois, and grew up in Los Altos California, which is now known as part of Silicon Valley. She became interested in economics when attending UC Davis in 1972 for two quarters and pursued this interest through additional undergraduate training in economics at Simon Fraser University in Burnaby, British Columbia, and then at the University of British Columbia, where she received her undergraduate degree in 1977. After becoming increasingly interested in economic research while doing her undergraduate honors thesis on labor unions and strike behavior, Cathy decided to pursue her M.A. and ultimately her Ph.D in economics at the University of British Columbia, where she became more interested in natural resource and production economics. Her first teaching job was as an instructor at New York University in 1981-82. She then moved to a permanent position at Tufts University in Massachusetts, where she was on the faculty in the Department of Economics and served as chair of the department from 1994-95. Cathy joined the faculty at UC Davis as a professor of agricultural and resource economics in 1995.

Morrison Paul's research area is applied production economics. Her published articles have primarily focused on measurement and analysis of the technological and cost structure of manufacturing industries. This has included extensive work on the modeling and measurement of productivity growth, capacity utilization, investment, expectation formation, energy demand, employment decisions, output pricing and costs of regulation.

Cathy's recent work has focused on the interaction of technological or cost and market structure in food industries. For example, she is examining the stimulus for increased concentration resulting from various types of cost economies in the meat products industries in several countries. Her current research focuses on linkages among the layers and levels of the food system and resulting implications for productivity patterns and food prices, and on capacity utilization, performance and regulation in U.S. and European Union fisheries.

Morrison Paul is well-renowned in her field, and has been ranked eleventh among applied econometricians publishing in the top journals, and fifteenth in the economics profession in terms of publishing productivity in the top 36 economics journals. She serves as an associate editor for



*Catherine Morrison Paul
Professor*

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prestigious journals including the *American Journal of Agricultural Economics* and the *Journal of Productivity Analysis*.

Cathy teaches both microeconomic theory and applied microeconomics at UC Davis. She tries to foster interest among her students in answering important questions about economic behavior and performance. She raises topical questions such as: how biotechnological advances might affect producers and consumers of food products; how regulatory changes might have driven shortages and high prices of energy; and showing how economic models might be used – or misused – to address these types of issues.

Despite the rigorous demands of her teaching and research, Cathy enjoys her free time with her husband exploring California with their travel trailer and Rottweiler, Kodi, and playing golf (or trying to). She also tries to find time to do other activities that she has enjoyed over the years, including being a teddy bear artist (hand-crafting teddy bears), exercising as much as possible (and palatable), cooking (and eating), and dabbling in tennis and other sports and games.

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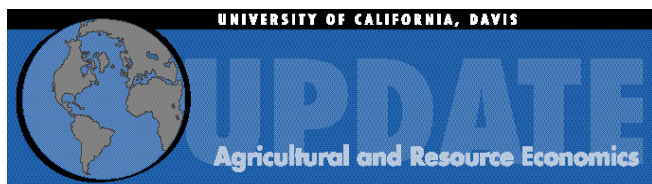
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