

A Decade of Change in Texas Agriculture Farm Inputs and Expenses

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The cost of producing crops and livestock has skyrocketed in Texas over the past 5 years, as fuel costs rose 97 percent, fertilizer increased by 68 percent, and purchased feed rose by 57 percent, according to an analysis of the three most recent editions of the U.S. Department of Agriculture (USDA) Census of Agriculture.

The use of other inputs by Texas farms also changed between 2002 and 2007:

- Farms hired fewer workers in 2007 than in 2002. Wages for farm labor, however, surpassed the \$1 billion mark for the first time, 21 percent higher than 2002.
- The cost of livestock and poultry purchases rose 33 percent in 2007 compared to 2002. Most of those purchases were for non-breeding livestock, such as stocker cattle and feeder cattle.
- Higher feed grain prices in 2007 contributed to the increase in the cost of feed of 57 percent compared to 2002.
- Farms spent 43 percent more on chemicals such as herbicides and insecticides.

Farm input costs continue to rise

Texas farmers spent \$19.2 billion to produce their crops and livestock in 2007, an increase of \$5.4 billion (40 percent) from 2002 (Table 1). Not surprisingly, the input cost

that showed the highest percentage increase from 2002 to 2007 was fuel. Although fuel prices didn't reach their high until 2008, prices in 2007 were significantly higher than in 2002.

The Energy Information Administration shows that the average price of gasoline in Texas more than doubled from 2002 to 2007, increasing from \$1.27 to \$2.65 per gallon, a 108 percent increase. Much of the increase in farm production expenses was driven by the rise in energy prices.

The distribution of total farm expense for 2002 and 2007 is presented in Figure 1, where farms with gross sales of \$1 million or more had \$11.7 billion of the \$19.2 billion (61 percent) in total production expenses statewide. Although these farms also incurred most of the increase in expenses since 2002, some was due to the growing number of farms in this size category. This also applies to several other gross sales categories.

Total expenses as a percent of gross sales

In 2007, total production expenses for Texas farmers amounted to 91.5 percent of gross farm sales, not including government payments. This was a significant improvement in overall profitability compared to 2002, when the percentage was 97.2 percent.

This percentage varies considerably across farm size (Fig. 2). For the farms with over \$1 million in gross sales, expenses were 84 percent of gross sales, and for the next smaller category (\$500,000 to \$999,999) the percentage

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Table 1. Production expenses for Texas farms, 1997, 2002, and 2007.

	2007	2002	1997	'02 to '07 % change
Livestock and poultry purchased	\$6,017,794,000	\$4,524,369,000	\$3,257,339,000	33%
Feed purchased	\$4,226,444,000	\$2,700,281,000	\$2,949,085,000	57%
Fertilizer, lime, and soil conditioners	\$931,140,000	\$555,239,000	\$548,517,000	68%
Gasoline, fuels, and oils	\$1,053,222,000	\$533,321,000	\$554,841,000	97%
Hired farm labor	\$1,169,767,000	\$969,979,000	\$816,590,000	21%
Interest expense	\$676,379,000	\$523,438,000	\$527,989,000	29%
Chemicals	\$492,500,000	\$345,210,000	\$364,471,000	43%
Total production expenses	\$19,223,099,000	\$13,734,706,000	\$12,036,327,000	40%

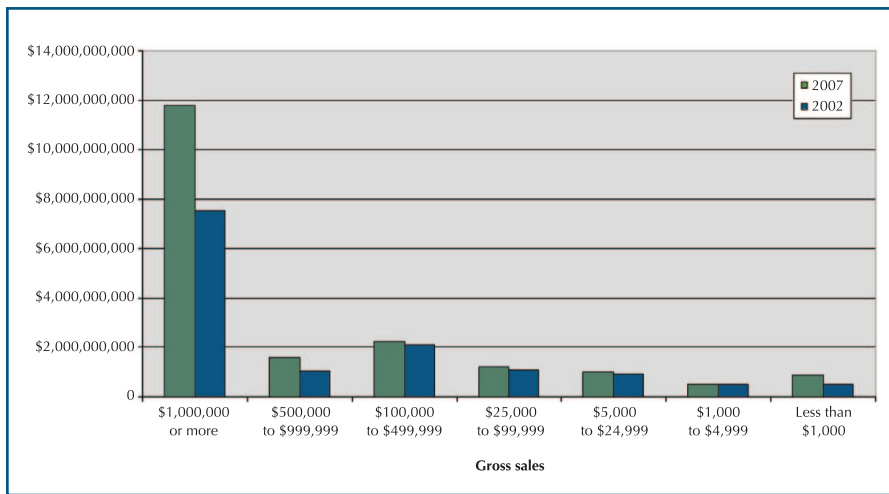


Figure 1. Total production expense by gross sales size category, Texas, 2002 and 2007.

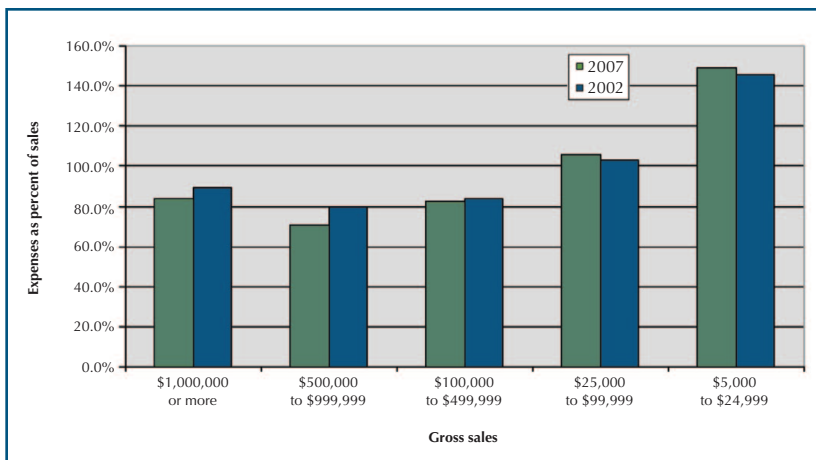


Figure 2. Total production expenses as a percent of gross sales by gross sales category, Texas, 2002 and 2007.

was lower at 71 percent. For farms with gross sales of less than \$5,000, expenses exceeded gross sales by a large margin. (The smallest farm size categories are not included in Figure 2.)

Fertilizer and chemical expenses

Census data allow for converting the costs of fertilizer and chemicals to a per-treated-acre basis. In Table 2, the percentage change in these costs from 2002 to 2007 is summarized by gross sales range. Although fertilizer prices didn't reach their high until 2008, prices in 2007 were significantly higher than in 2002.

For all farms in 2007, total fertilizer expenses per-treated-acre were up 66 percent from 2002 levels. Except for farms in the gross sales range of less than \$1,000, the increase ranged from 53 to 64 percent.

Over the last 5 years, the cost of chemicals such as herbicides and pesticides per treated acre for all farms increased by 19 percent. The largest increase occurred in mid-size farms with gross sales of \$1,000 to \$24,999.

Machinery and equipment investment

Texas farms own \$15.9 billion worth of machinery and equipment, up from \$9.2 billion in 2002. On a per-farm basis, the average value of machinery and equipment increased from \$40,552 in 2002 to \$64,350 in 2007, a 59

Table 2. Percentage changes in fertilizer and chemical costs per-treated acre by gross sales size category in Texas, 2007.

Size category (gross sales)	Fertilizer and other conditioners	Chemicals
All farms	+66%	+19%
\$1,000,000 or more	+53%	-4%
\$500,000–\$999,999	+59%	+2%
\$100,000–\$499,999	+60%	+3%
\$25,000–\$99,999	+57%	+13%
\$5,000–\$24,999	+62%	+26%
\$1,000–\$4,999	+64%	+43%
Less than \$1,000	+20%	-3%

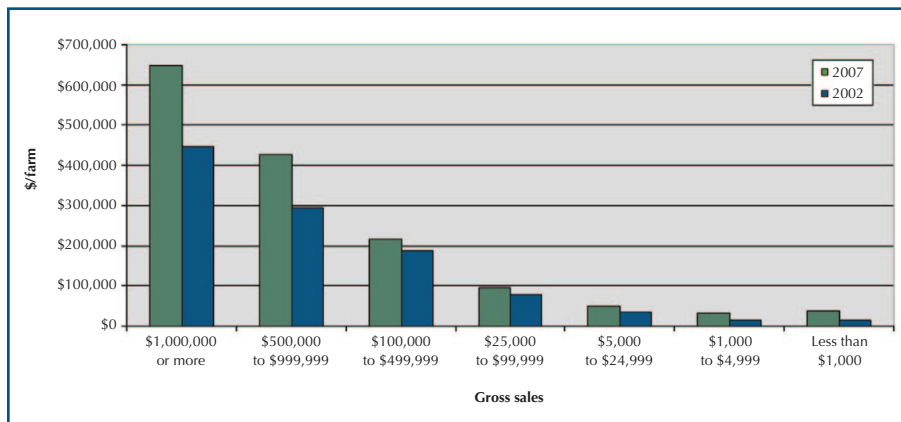


Figure 3. Estimated market value of machinery and equipment per farm, Texas, 2002, and 2007.

Table 3. Percent of farms with interest expense, interest expense ratio, Texas, 2007.

	\$1 million or more	\$500,000–\$999,999	\$100,000–\$499,999	\$25,000–\$99,999	\$5,000–\$24,999
Percent of farms with interest expense	68.1%	61.2%	49.1%	33.1%	22.2%
Average interest expense per farm with interest expense	\$91,459	\$32,530	\$20,231	\$10,408	\$6,371
Interest expense as a percent of gross sales (all farms)	1.3%	2.8%	4.2%	7.2%	12.4%
Interest expense as a percent of gross sales (farms with interest expense)	1.9%	4.6%	8.6%	21.8%	55.9%

percent increase.

Figure 3 shows the market value of machinery and equipment per farm by gross sales category for 2002 and 2007, where the value per farm ranges from a low of \$31,000 (in the \$1,000 to \$4,999 category) to a high of \$647,000 (\$1 million or more category).

Interest expense and use of debt

Total interest paid by all farms in Texas increased from \$523 million in 2002 to \$676 million in 2007 (Table 3). Although the census data do not include information about the amount of debt, interest expense information indicates that the use of debt capital is more common with larger farms than with smaller farms.

In 2007, 68 percent of the farms with gross sales of \$1 million or more had an expense for interest on debt, and this percentage declines as farm size shrinks. For farms with gross sales of \$5,000 to \$24,999, only 22 percent had interest expense. For all farms in Texas, the percentage with interest expense declined from 26.6 percent in 2002 to 21.8 percent in 2007.

For comparison, data from the 2006 USDA Agricultural Resource Management Survey (ARMS) show that less than 40 percent of U.S. farms had farm debt. Also, the ARMS data indicate that the percentage of farms with no debt has been increasing.

Using the census data for the farms that paid interest in 2007, the average interest expense per farm ranged from a low of \$6,371 for farms with gross sales of \$5,000 to \$24,999, to a high of \$91,459 for farms in the highest gross sales category.

One measure of financial efficiency is to calculate interest expense as a percentage of gross sales. This measure is called the **interest expense ratio**. A lower ratio indicates that the business is in a stronger financial position in its use of resources.

Table 3 includes the interest expense ratio for all farms, including those that did not pay interest. Farms with less than \$5,000 in gross sales are not included, partly because in some cases the interest expense exceeds gross sales.

The smaller the farm is, as measured by gross sales, the larger the average interest expense ratio—from 1.3 percent for the largest farms to 12.4 percent for farms with gross sales of \$5,000 to \$24,999. These interest expense ratios are considered very low (strong).

From a business sense, an interest expense ratio above the 15 percent range is cause for concern. However, most farms in the smaller categories have off-farm income to supplement farm income.

Because of their interest expense ratios, the Texas farms with gross sales of \$100,000 or more appear to be able to withstand some economic downturns. Of course, these are averages, and some farms in this size range would not fare as well during difficult economic times.

Table 3 also shows the estimated interest expense ratio for only the farms that paid interest in 2007. On average, interest-paying farms with gross sales of \$100,000 or more were still in a comfortable position in terms of their interest expense ratio as the highest ratio was 8.6 percent (gross sales of \$100,000 to \$499,999).

For the two farm size categories with gross sales of less than \$100,000, interest as a percent of gross sales climbed to 21.8 percent and 55.9 percent. Since these farms are on the smaller end of the farm size scale, debt servicing was likely supported with off-farm income.

Hired farm labor

In 2007, 45,000, or 18.2 percent of the farms in Texas, hired labor (Table 4). This was down from 21.5 percent in 2002. These farms hired 154,000 workers or 3.4 workers per farm that hired labor in 2007. In 2002, a total of 166,117 workers were hired, which resulted in the same average number of workers per employing farm (3.4 workers).

Of the total number of workers hired in 2007, 35 percent worked 150 days or more on the farm with the other 65 percent working less than 150 days. This compares to 32 percent working 150 days or more and 68 percent working less than 150 days in 2002.

The number of workers hired by farms in each gross sales category decreased between 2002 and 2007 except for the largest group, which increased from 30,000 to more than 41,000 workers (Fig. 4).

Table 4. Farms hiring labor and total workers by days worked, Texas, 2002 and 2007.

	2007	2002
Total farms (number)	247,437	228,926
Farms with hired farm labor	45,081	49,206
Percent of farms hiring labor	18.2%	21.5%
Hired farm labor (number of workers)	154,793	166,117
Hired labor per farm (average number of workers)	3.4	3.4
Hired farm labor working 150 days or more (number of workers)	53,829	53,820
Percent of total workers working 150 days or more	34.8%	32.4%
Hired farm workers working less than 150 days (workers)	100,964	112,297
Percent of total workers working less than 150 days	65.2%	67.6%

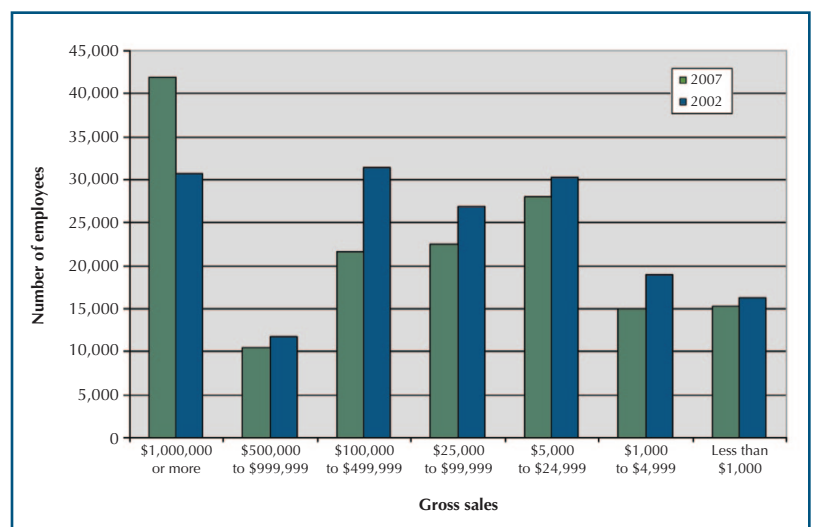


Figure 4. Number of workers hired on farms by gross sales size category, Texas, 2002, and 2007.

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