AFPC

Agricultural & Food Policy Center

at Texas A&M University

Analysis of State Agricultural Tax Policy on Farms and Ranches in Texas

Briefing Paper 04-2

May 2004

Department of Agricultural Economics
Texas Agricultural Experiment Station
Texas Cooperative Extension
Texas A&M University

College Station, Texas 77843-2124
Telephone: (979) 845-5913
Fax: (979) 845-3140
http://www.afpc.tamu.edu

Analysis of State Agricultural Tax Policy On Farms and Ranches in Texas

AFPC Briefing Paper 04-2

Steven L. Klose, Assistant Professor and Extension Economist
Joe L. Outlaw, Associate Professor and Extension Economist
David P. Anderson, Associate Professor and Extension Economist

Agricultural and Food Policy Center
Department of Agricultural Economics
Texas Agricultural Experiment Station
Texas Cooperative Extension
Texas A&M University

May 2004

College Station, Texas 77843-2124
Telephone: (979) 845-5913
Fax: (979) 845-3140
Web Site: http://www.afpc.tamu.edu/

Analysis of State Agricultural Tax Policy
On Farms and Ranches in Texas

The farm level impacts of eliminating agricultural use valuation for property taxes and agricultural use exemptions from sales taxes were analyzed individually and in combination. The impacts of these changes were measured using actual producer data from farmers and ranchers in Texas. Texas Cooperative Extension (TCE) works individually with agricultural producers across Texas in the Financial And Risk Management (FARM) Assistance program to assist them in financial and strategic planning. Data from the FARM Assistance program were used to analyze the impact of these tax policy changes across the state and by region.

FARM Assistance is a financial planning model used to help producers evaluate alternative management strategies. As a by-product of the individual analyses, TCE economists have developed an extensive database of individual producers' data, reflecting the program's clientele in Texas. From this database, 183 operations were selected for this analysis. These farms represent the most recent, consistent data available from the FARM Assistance database. The 183 farms and ranches were subdivided into five geographic regions of Texas along Extension district lines (Figure 1) to evaluate the differential impact by location.

The five regions, number of producers, and the primary commodities each represent are:

- Northern Plains (49 producers) – Texas Cooperative Extension District 1. Primarily feed grains, wheat, cow-calf, stocker and feedlot operations.
- Southern Plains (31 producers) – Texas Cooperative Extension District 2. Primarily cotton and feed grain operations.
- Rolling Plains and West (39 producers) – Texas Cooperative Extension Districts 3, 6, and 7. Primarily cotton, wheat and cow-calf operations.
- Central and East (28 producers) – Texas Cooperative Extension Districts 4, 5, 8, and 9. Primarily cotton, feed grain, dairy and cow-calf operations.

- South (35 producers) – Texas Cooperative Extension Districts 10, 11, and 12. Primarily cotton, feed grain and cow-calf operations.

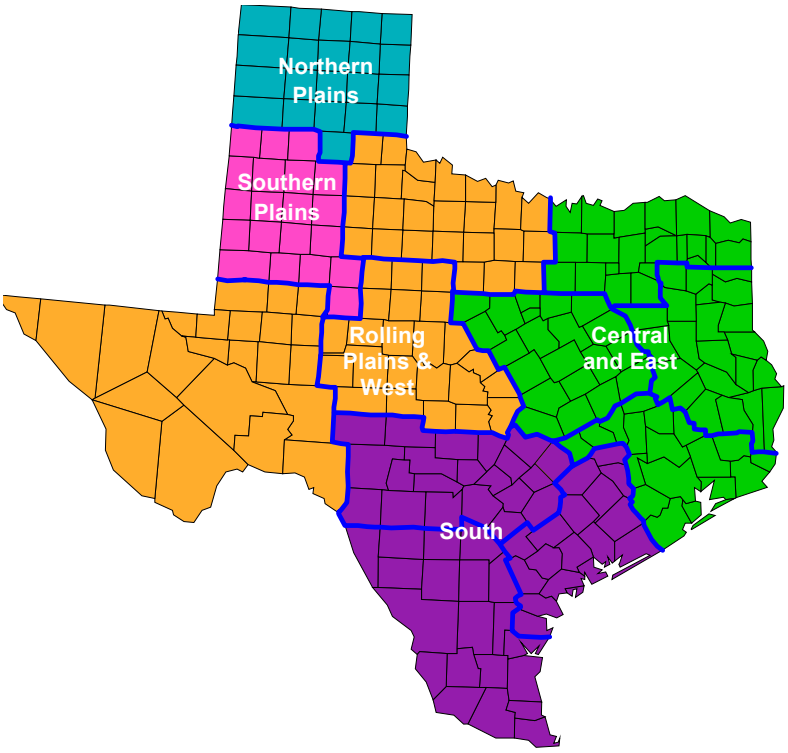

Figure 1. Regions Used in the Analysis.

Eliminating the Agricultural Use Valuation for Property Taxes

The increase in agricultural producer's property taxes resulting from the elimination of the agricultural use valuation varied by county. The current property taxes for each operation were increased by the assumed proportional change in tax valuations. The analysis assumes no changes in assessed tax rates. The data on current market valuations and agricultural productivity valuations for each county in Texas were supplied by the Office of the Texas Comptroller of Public Accounts. Figure 2 illustrates a comparison of the market value and productivity value for Texas counties based on 2001 valuation data.

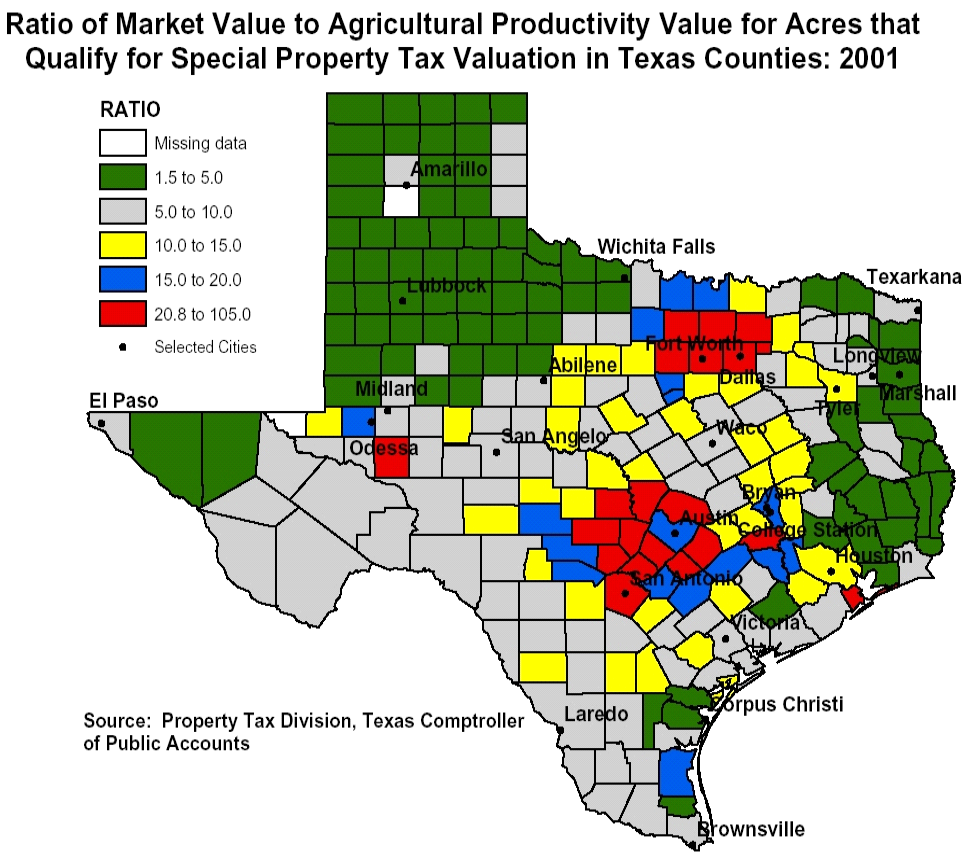

Figure 2. Ratio of Market Value to Agricultural Productivity Value

The ratio of the appraised market value of agricultural use land in a county divided by the productivity value of the same land was assumed to be the proportional increase in tax valuation. For example, if the appraised market value of agricultural use land in a county was three times the productivity value, an operation in that county is assumed to pay three times the current property tax bill for agricultural land.

Eliminating the Agricultural Use Exemption from Sales Taxes

The impacts of eliminating the agricultural use exemptions from sales taxes were analyzed by calculating taxes on overhead, crop, and livestock production expenses, as listed in Table 1. The state tax rate is 6.25 percent. The total of city and county sales tax rates is limited to 2 percent. While not all cities and counties have adopted the full 2 percent rate, the sales tax

for all farms and ranches was assumed to be 8.25 percent.

Table 1. Tax Rates Assumed in the Analysis of the Elimination of the Agricultural Use Exemption on Sales Taxes.

Category	Tax Rate
Overhead	**%**
Repairs	4.125
Fuel	20.000
Equipment	6.250
Crops	
Seed, fertilizer, herbicides, insecticides And fungicides	8.250
Fuel	20.000
Custom application, scouting, irrigation, Crop insurance, boll weevil program costs and labor	0.000
Livestock	
Purchased feed, salt and minerals	8.250
Supplies	8.250
Hauling	20.000
Labor, marketing costs and vet services	0.000

The following explains the assumptions used for establishing each of the tax rates on overhead expenses:

- Repairs – Assumed that one-half of the cost of annual repairs is labor and the remaining one-half is for parts and supplies. The sales tax rate for parts and supplies is the normal rate (8.25%).
- Fuel – The state tax charged on fuel is $0.22 per gallon. Adding state taxes would increase the cost of fuel purchases approximately 20 percent.
- Equipment – Farm equipment was assumed to pay 6.25 percent just as other vehicles, such as cars and trucks. The tax is only charged on the difference between the purchase price and the trade-in value if applicable.

Variable costs pertaining to the production of a crop were assumed to be taxed as follows:

- Seed, fertilizer, herbicides, insecticides and fungicides – Variable inputs were assumed to pay a sales tax of 8.25 percent.
- Fuel – This category reflects the fuel cost per acre of crops in production and is increased by 20 percent to reflect the state tax.
- Custom application, scouting, irrigation, crop insurance, boll weevil program costs, and labor – These costs all reflect services that were assumed to remain tax free.

Livestock specific costs for cow-calf operations, dairies, stocker operations, and feeder cattle enterprises were assumed to be affected as follows:

- Purchased feed, salt, and minerals – Feed and minerals were assumed to pay a sales tax of 8.25 percent.
- Supplies – Supplies were assumed to pay the sales tax of 8.25 percent.
- Hauling – The increase in hauling costs reflects the percentage increase in taxes on fuels.
- Labor, marketing costs and vet services were assumed to remain tax free.

Analysis Method

The financial performance and position of each of the 183 farms were simulated over 5-years. Projections were developed for the current situation (Base) and three alternative scenarios:

- Base – Assumes no change in state tax policy affecting production agriculture.
- Prop Tax – Assumes the elimination of the agricultural use valuation for property taxes beginning in the first year of the analysis.
- Sales Tax – Assumes the elimination of the agricultural use exemption on sales taxes beginning in the first year of the analysis.
- Sales & Prop Tax – Eliminates both property and sales tax exemptions beginning in the first year of the analysis.

The impacts are measured using several key financial indicators:

- Change in Cash Operating Costs – The annual average increase in total cash operating costs over the five year projection period. Operating costs do not include other cash requirements such as federal income taxes, principal payments, machinery replacement, and family living expenses.
- Expense/Receipts – The ratio of cash expenses to cash receipts. This ratio provides an indication of the efficiency of the operation. In general, if the ratio is greater than 85 percent, the operation would have a difficult time surviving. The annual average ratio over the five year projection period is reported.
- NCFI – The annual average change in net cash farm income for the operation over the five year projection period. NCFI measures farm or ranch profitability. It is critical to note that NCFI includes operating revenues and expenses, and does not include other cash requirements such as federal income taxes, principal payments, machinery replacement, and family living expenses.
- Prob(NCFI<0) – Represents the five year average of the annual probability that net cash farm income is less than zero. This measure provides an indication of the profitability risk that a farm or ranch faces.
- Ending Cash – The ending cash balance for the operation at the end of year 5.

- Prob(Cash<0) – Represents the five year average of the annual probability that ending cash is less than zero. This measure provides an indication of the liquidity risk that a farm or ranch faces.

Results

The simulation results describing the impacts of eliminating the agricultural use valuation for property taxes and the agricultural use exemption on sales taxes are provided as an average for 183 operations and by region in Tables 2-8. The results are discussed as relative changes from the Base or current situation.

Across all operations, eliminating agricultural use valuation for property taxes would increase total cash costs by an average of $21,000 per operation (Table 2). Eliminating the sales tax exemption would increase total cash costs by an average of $17,000 per operation. Combining both tax policy changes would result in an increase in total cash costs of $38,000 per operation.

The impact of the Prop Tax, Sales Tax and Sales & Prop Tax alternatives would increase the average expense to receipts ratio by 6.5, 2, and 8.5 percent, respectively, across all operations (Table 3). The combined impact on all operations pushes the expense to receipts ratio up to 82.2 percent, close to the 85 percent rule of thumb for agricultural business success. For the Central and East Texas farms and ranches the change is even more critical. The elimination of the special valuation for agricultural use pushes the expense to receipt ratio over 100 percent. That means that cash expenses will exceed cash receipts even before principal payments, machinery replacement costs, family living expenses, and income taxes are paid.

The impact of the changes in agricultural taxes on net cash farm income mimics those on total cash costs (Table 4). But, while the cash amounts are the same, the change is a much larger percent of net cash farm income. As a percent of NCFI, the tax changes reflect a 17, 14, and 31

percent decrease in profit, respectively. The probability of NCFI being less than zero increases by 6 percentage points under the Prop Tax alternative and 3 percentage points under the Sales Tax alternative (Table 5). The combined scenario results in an average 9 percentage point increase in the probability of negative net cash farm income across all operations.

For all operations, ending cash balances at the end of the fifth year of the analysis are down an average of $76,000 resulting from the elimination of the agricultural use valuation for property taxes (Table 6). Eliminating the agricultural use exemption from sales taxes reduces cash balances by $68,000, on average, across all 183 operations. Combining the two effects, results in a $145,000 average decrease in ending cash balances by year 5 when compared to the base. The impact on the probability that ending cash balances are negative averaged across the five years is a 7 percentage point increase for Prop Tax, a 3 percentage point increase for Sales Tax, and a combined increase of 11 percentage points (Table 7).

Regional impacts were generally consistent with the overall results with two significant exceptions. The more rural regions were less impacted by the Prop Tax alternative relative to the Central and East Texas region. The Rolling Plains & West Texas and South Texas regions showed the smallest impacts for the Sales Tax alternative.

The results of this study do not include changes to property tax rates. A change in agricultural property valuation would likely result in a review of city, county, and school district property tax rates. Subsequent changes to property tax rates would depend on three significant factors: the need for additional tax revenue, the relative importance of agricultural property in the tax base, and the proportional change in valuation of agricultural property.

Higher property taxes increase the cost of land ownership and should have a negative impact on land values. Similarly, higher sales taxes reduce the profit potential of agricultural

land, also lowering land values. The results of this study do not include the impact of lost equity due to reduced land values.

The magnitude of impacts from eliminating the special valuation for agricultural property on the farms is also affected by the amount of land owned by the operator. Actual producer data were used so the proportion of owned land to rented land varied by farm. The more rented land in an operation the smaller the direct impact of the change in property taxes will be on the operation. However, as result of the higher cost of land ownership, operators may see an increase in land rent as landowners attempt to recover the tax increase. The results of this study do not include additional costs to the operator from changes in land rent.

Summary

Data from 183 cooperators in the Texas Cooperative Extension FARM Assistance program were used to assess the farm level financial impacts of eliminating special valuation for agricultural property taxes and eliminating agricultural exemptions from sales taxes. Projections indicate that eliminating the special valuation would result in an average increase in annual property taxes of $21,000 per farm, representing a loss of 17 percent of net cash income annually. On average, sales taxes on production inputs would increase costs by $17,000 annually. An annual average $38,000 cost increase, or 31 percent loss in net income, would result from the combined tax changes. Additionally, higher annual costs accumulated over time have the potential to substantially reduce farm cash flow, exposing a farm or ranch to greater downside financial risk.

Table 2. Increase in Average Annual Total Cash Operating Costs per Farm or Ranch

	Eliminate Special Valuation for Property Taxes	Eliminate Sales Tax Exemption	Eliminate Special Valuation and Sales Tax Exemption
All Farms & Ranches	$20,731	$16,682	$37,659
Northern Plains	$10,040	$21,454	$31,530
Southern Plains	$6,255	$23,177	$29,452
Rolling Plains & West Texas	$23,232	$7,791	$31,173
Central & East Texas	$63,576	$22,120	$86,246
South Texas	$11,457	$9,803	$21,867

Table 3. Average Annual Expense-to-Receipts Ratio per Farm or Ranch

	Baseline Scenario	Eliminate Special Valuation for Property Taxes		Eliminate Sales Tax Exemption		Eliminate Special Valuation and Sales Tax Exemption	
			Change from Base		Change from Base		Change from Base
All Farms & Ranches	0.737	0.802	0.065	0.757	0.020	0.822	0.085
Northern Plains	0.722	0.757	0.034	0.742	0.020	0.776	0.053
Southern Plains	0.701	0.725	0.024	0.719	0.018	0.743	0.041
Rolling Plains & West Texas	0.698	0.780	0.081	0.712	0.013	0.793	0.095
Central & East Texas	0.889	1.060	0.171	0.917	0.029	1.089	0.200
South Texas	0.712	0.754	0.042	0.734	0.022	0.776	0.064

Table 4. Impacts on Average Annual Net Cash Farm Income per Farm or Ranch

	Eliminate Special Valuation for Property Taxes		Eliminate Sales Tax Exemption		Eliminate Special Valuation and Sales Tax Exemption	
	$ Change	% Change	$ Change	% Change	$ Change	% Change
All Farms & Ranches	-$20,731	-17%	-$16,682	-14%	-$37,659	-31%
Northern Plains	-$10,040	-9%	-$21,454	-20%	-$31,530	-30%
Southern Plains	-$6,255	-3%	-$23,177	-10%	-$29,452	-13%
Rolling Plains & West Texas	-$23,232	-25%	-$7,791	-8%	-$31,173	-34%
Central & East Texas	-$63,576	-59%	-$22,120	-20%	-$86,246	-79%
South Texas	-$11,457	-11%	-$9,803	-9%	-$21,867	-21%

Table 5. Average Annual Probability of Negative Net Cash Farm Income per Farm or Ranch

	Baseline Scenario	Eliminate Special Valuation for Property Taxes		Eliminate Sales Tax Exemption		Eliminate Special Valuation and Sales Tax Exemption	
			Change from Base		Change from Base		Change from Base
All Farms & Ranches	16	23	6	19	3	26	9
Northern Plains	18	20	2	22	4	24	6
Southern Plains	11	12	1	13	2	14	3
Rolling Plains & West Texas	18	30	11	20	2	32	14
Central & East Texas	24	39	15	27	3	43	19
South Texas	12	15	4	14	2	18	6

Table 6. Average Ending Cash Balance in Fifth Year per Farm or Ranch ($1,000)

	Baseline Scenario	Eliminate Special Valuation for Property Taxes		Eliminate Sales Tax Exemption		Eliminate Special Valuation and Sales Tax Exemption	
			Change from Base		Change from Base		Change from Base
All Farms & Ranches	$178	$102	-$76	$110	-$68	$33	-$145
Northern Plains	-$109	-$148	-$40	-$202	-$93	-$242	-$133
Southern Plains	$589	$569	-$20	$501	-$88	$481	-$108
Rolling Plains & West Texas	$151	$72	-$79	$122	-$29	$42	-$109
Central & East Texas	$223	-$17	-$239	$128	-$94	-$117	-$340
South Texas	$208	$169	-$40	$172	-$37	$129	-$79

Table 7. Average Annual Probability of Negative Cash Balance per Farm or Ranch

	Baseline Scenario	Eliminate Special Valuation for Property Taxes		Eliminate Sales Tax Exemption		Eliminate Special Valuation and Sales Tax Exemption	
			Change from Base		Change from Base		Change from Base
All Farms & Ranches	30	37	7	34	3	41	11
Northern Plains	46	48	3	49	4	52	7
Southern Plains	16	17	1	19	2	20	3
Rolling Plains & West Texas	36	45	10	38	2	48	12
Central & East Texas	25	45	20	31	6	51	26
South Texas	18	23	4	22	4	27	9