

Estimated Economic Impact of Removing Sales Tax Exemption From Agricultural Purchases and Sales

Developed for

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Commissioner of Agriculture

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Executive Summary

Personnel from the LSU AgCenter's Department of Agricultural Economics and Agribusiness examined the potential economic impact associated with the removal of sales tax exemptions to both purchases and sales by the agricultural sector. Direct impacts included increased costs associated with agricultural input and machinery purchases and reduced revenue associated with the sale of raw agricultural commodities. Estimates of these direct impacts were developed utilizing LSU AgCenter Enterprise Budgets and data, USDA Census of Agriculture information, and National Agricultural Statistics Service data. Indirect impacts include changes to income and spending that would be expected in the other sectors of the state's economy. These indirect impacts were developed using the economic modeling software, IMPLAN®.

Four different scenarios were examined. The first two assumed that purchases of agricultural inputs and machinery would remain the same despite the increase in sales tax as would agricultural output and sales of agricultural commodities. The next two scenarios assume that in-state purchases of agricultural inputs and machinery would fall by 10 percent as would agricultural output and sales of agricultural commodities. This reduction in economic activity would be a result of agricultural producers reducing purchasing and reducing output and/or making these purchases and sales of their output in surrounding states that currently exempt agricultural purchases and sales. A sales tax rate of 1 cent and 5 cents were also introduced in the four scenarios.

Results indicate that the indirect impact or losses to income for the agricultural sector range from \$42 to \$235 million depending on assumptions of the level of sales tax imposed and the level of in-state agricultural purchases and sales. Indirect impacts represent losses in income and spending associated with the other sectors of the state's economy. Results show these indirect impacts range from \$64 to \$360 million again depending on assumptions on sales tax levels and in-state purchases and sales. When taken together, direct and indirect impacts show the total economic impact expected for the state. Results indicate that total economic losses range from \$107 to \$596 million. These losses represent from 3 to as high as 18 percent of the estimated 2015 farm gate value of the commodities examined in the study.

Another consideration examined is the level of additional tax revenue generated from removal of the exemptions. While sales tax revenue associated with agricultural purchases and sales would be expected to increase, the additional cost of the sales tax would effectively reduce income levels for the agricultural sector. This would, therefore, reduce income tax revenue from this sector. In addition, because income and spending would also be negatively impacted for the other sectors of the economy, both income and sales tax revenue generated from these other sectors would be expected to decrease. Results indicate that net tax revenue increases would range from \$39 to \$218 million depending on the assumptions regarding sales tax rates and in-state agricultural purchases and sales. Results also indicate that net tax revenue is only 92 percent of the increase in sales taxes associated with agricultural purchases and sales. So, for every \$1 increase in tax revenue generated by increasing sales taxes on agricultural purchases and sales generates roughly a \$0.92 increase in net tax revenue received by the state. The reported slippage of 8 percent in tax revenue is believed to be conservative and could be as high as 15 percent. This would mean that for every \$1 increase in tax revenue generated by increasing sales taxes on agricultural purchases and sales would only generate \$0.85 in additional net tax revenue for the state.

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Introduction

According to data from the LSU AgCenter, the agricultural sector generated \$7.1 billion in farm gate value in 2014. An additional \$5.6 billion was generated in value added activities to bring the total impact to the state's economy of \$12.7 billion. Over the past 5 years, the annual contribution of the agricultural sector to the state's economy has averaged more than \$11 billion.

The importance of the agricultural sector to the state's economy has historically justified its status for tax exemption for critical inputs as well as sale of raw agricultural commodities. However, budget shortfalls and the desire to fund critical government services have created the need for the state to examine all potential revenue streams. This report examines the economic impact to the state's overall economy by removing sales tax exemptions to both agricultural purchases and sales. Specifically, it examines the impact of removing sales tax exemptions to purchases of agricultural inputs, purchases of agricultural machinery and equipment, and the sale of raw agricultural commodities.

The report utilizes four different scenarios in examining the impact. The first two scenarios assume no changes in the purchases of inputs and machinery by the agricultural sector as well as no changes in the output or sales of agricultural commodities. These first two scenarios differ in the assumed level of sales tax with the first assuming a 1 cent sales tax and the second a full 5 cent sales tax.

The last two scenarios soften the assumption that no changes in agricultural purchases or output would occur in the face of eliminating the sales tax exemption. The state could experience lower spending on agricultural inputs as producers, faced with increased costs associated with sales taxes, either reduce their total purchases and use of agricultural inputs and/or purchase these items in surrounding states that do not tax agricultural inputs. Similarly, the state could experience lower agricultural output from producers utilizing lower levels of critical inputs and/or selling their commodities in surrounding states that do not tax the sale of raw agricultural commodities.

While reduced input purchases and output are likely events associated with the removal of sales tax exemption, it is difficult to predict the exact magnitude of these changes. To show the potential impact of these reductions, the last two scenarios assume 10 percent reductions in in-state input purchases and agricultural output (raw agricultural commodity sales) through either reduced activity by producers in the state or by conducting those purchases and sales out-of-state. As with the first two scenarios described, the last two scenarios differ in the level of sales tax assumed with one assuming 1 cent and the other assuming a full 5 cents.

It should be noted that all four scenarios examined assume that no additional government spending would occur with the increased sales tax revenue generated by the removal of exemptions. It was assumed that the additional tax revenue would be solely utilized to cover budget shortfalls in current government expenditures.

Direct Impacts

The direct impact of removing sales tax exemption is the estimated change in income to agricultural producers in the state. In the case of agricultural input purchases, the sales tax has the direct effect of increasing the costs faced by producers. As a result of increased costs, producers would be expected to generate lower levels of income. Historically, commercial agricultural producers have been exempt from sales taxes on selected agricultural inputs. These include seed, feed, fertilizer, fuel, agricultural chemicals, pharmaceuticals used in livestock production, and polypipe used in agricultural irrigation. To estimate the annual purchases of these inputs by the agricultural industry, 2015 LSU AgCenter Enterprise Budgets were used to estimate the level of input use typically utilized in the production of major row crop and livestock enterprises in the state (See Table 1). It should be noted that this estimate only includes input purchases for production of corn, cotton, grain sorghum, rice, sugarcane, soybeans, wheat, beef cattle, and milk. While these commodities represent a large portion of total agricultural production, the estimates are not representative of all agricultural commodities grown in the state and should be viewed as a conservative estimate.

A similar effect would be expected with the removal of sales tax exemptions from the purchase of agricultural machinery and equipment. The removal of the sales tax exemption effectively increases the costs faced by producers and has the impact of reducing agricultural income. As with agricultural input purchases, no data is directly available on the level of agricultural machinery and equipment purchased annually specifically for Louisiana. As a result, Census of Agriculture data was used to develop an estimate. Census of Agriculture data is available on the market value of inventories of agricultural machinery and equipment held by agricultural operations in Louisiana. Unfortunately, the most recent estimate available is for 2012. For consistency, the 2012 needed to be adjusted to develop a projection for market value of inventories for 2015. This was accomplished by adjusting the 2012 Census data with USDA's Producers Prices Paid Index and resulted in an estimate of the market value of agricultural machinery and equipment in 2015. This estimate, however, only provides a projection of the market value of machinery and equipment in 2015 and is not an estimate of the level of machinery and equipment purchases in 2015. To estimate annual purchases of machinery and equipment in 2015, it was assumed that the age of machinery and equipment was evenly distributed and that a percentage of inventory level would be replaced each year. That percentage was set at the average length of the useful life of agricultural machinery and equipment. Based on LSU AgCenter Enterprise Budgets, the average useful life of machinery and equipment is roughly 8 years. Therefore, it would be assumed that roughly 1/8th of a farming operation's inventory would be replaced in any given year.

The impact of removing the exemption from the sale of raw agricultural commodities is reducing the level of income generated by agricultural operations. USDA and LSU AgCenter data was used to estimate the value of agricultural production for selected agricultural commodities in 2015. The value of agricultural production provides an estimate of the level of agricultural commodity sales in a given year. This, of course, assumes that all of the commodity produced in a given year would be sold in that same year. Because of data availability, only major row crop and livestock commodities were included in the analysis. These included corn, cotton, grain sorghum, rice, sugarcane, soybeans, wheat, beef cattle, milk, and broiler production. While these commodities represent a large percentage of all agricultural production, there are not all inclusive. Therefore, as with the agricultural input, the estimate should be viewed as conservative.

Table 1. Estimated Reduction in Agricultural Income Associated with Removal of Sales Tax Exemption

	Estimated 2015 Value	Scenario 1 ^A Direct Impact 1 Cent	Scenario 2 ^A Direct Impact 5 Cent	Scenario 3 ^A Direct Impact 1 Cent	Scenario 4 ^A Direct Impact 5 Cent
Agricultural Inputs Purchased ^B	\$999,762,385	\$9,997,624	\$49,988,119	\$8,997,861	\$44,989,307
Agricultural Machinery & Equipment Purchased	\$400,802,958	\$4,008,030	\$20,040,148	\$3,607,227	\$18,036,133
Value of Crop Production ^C	\$1,891,159,574	\$18,911,596	\$94,557,979	\$17,020,436	\$85,102,181
Value of Animal Production ^D	\$1,421,324,884	\$14,213,249	\$71,066,244	\$12,791,924	\$63,959,620
Total		\$47,130,498	\$235,652,490	\$42,417,448	\$212,087,241

^A Scenario 1 assumes no changes in agricultural purchases or output (sales) and a 1 cent sales tax. Scenario 2 assumes no changes in agricultural purchases or output (sales) and a 5 cent sales tax. Scenario 3 assumes a 10 percent reduction in in-state agricultural purchases and output (sales) and a 1 cent sales tax. Finally, Scenario 4 assumes a 10 percent reduction in in-state agricultural purchases and output (sales) and a 5 cent sales tax.

^B Estimate of purchases of seed, feed, fertilizer, fuel, agricultural chemicals, pharmaceuticals, and polypipe used in the production of corn, cotton, soybeans, sugarcane, grain sorghum, wheat, rice, beef cattle, and milk.

^C Estimate of the annual sales of corn, cotton, soybeans, sugarcane, grain sorghum, wheat, and rice.

^D Estimate of the annual sales of beef cattle, milk, and broilers.

Total Impact

In addition to the economic losses associated with reduced income and spending by the agricultural sector, the impact of removing sales tax exemptions can also be expected to have effects on income and spending levels of other sectors within the state's economy. As the agricultural sector experiences lower household income, it impacts the level of spending in other sectors in the state's economy. This reduced spending lowers the level of income experienced by these other sectors and, therefore, impacts those sectors' spending.

To model the multiple impacts associated with reduced income and spending by the agricultural sector on the remaining sectors in the state's economy, IMPLAN[®] was used. IMPLAN[®] is economic modeling software that provides a framework to examine changes to the economic activity of one sector in an economy to all of the remaining sectors of the economy. It does this based on historic relationships and interactions of all of the sectors of a given economy.

Tables 2a and 2b provide the direct, indirect, and total economic losses estimated with a removal of sales tax exemptions to agricultural purchases and sales under four separate scenarios. Table 2a provides estimates under Scenarios 1 and 2. Both scenarios assume that in-state purchases of inputs and equipment along with in-state sales of agricultural commodities would remain the same despite the removal of the tax exemption. They differ in the assumption of the level of sales tax. Scenario 1 assumes a 1 cent sales tax while Scenario 2 assumes the level of sales tax is at 5 cents.

Table 2b provides the estimates under Scenarios 3 and 4. Both scenarios assume that in-state purchases of inputs and equipment and sales of agricultural commodities would be reduced by 10 percent. In-state purchases and sales could be accomplished in two major ways. First, agricultural producers could reduce the level of inputs used in agricultural production and, therefore, reduce their total purchases. Reduced input use

would also be expected to reduce agricultural production and, therefore, reduce the level of commodity sales. The other manner in which in-state purchases and sales could be reduced is by agricultural producers maintaining their current level of purchases and sales but making those in surrounding states that provide tax exempt status for those transactions. Scenarios 3 and 4 differ in the assumption of the level of sales tax imposed. Scenario assumes a 1 cent sales tax while Scenario 4 assumes a 5 cent sales tax.

The results show that the total economic losses to the state of Louisiana from a removal of the sales tax exemption to the agricultural sector range from a low of \$107 million to a high of \$596 million. These estimated losses represent from 3 percent to as much as 18 percent of the estimated 2015 farm gate value of the commodities included in this analysis.

Table 2a. Estimated Direct, Indirect, and Total Economic Losses of Removing Sales Tax Exemption from Agricultural Purchases and Sales^A

	----- Scenario 1 ^B -----			----- Scenario 2 ^B -----		
	Direct	Indirect	Total	Direct	Indirect	Total
	Impact	Impact	Impact	Impact	Impact	Impact
	1 Cent	1 Cent	1 Cent	1 Cent	1 Cent	1 Cent
Agricultural Inputs Purchased	\$18,911,596	\$29,005,931	\$47,917,527	\$94,557,979	\$145,029,655	\$239,587,634
Agricultural Machinery & Equipment Purchased	\$14,213,249	\$21,799,775	\$36,013,024	\$71,066,244	\$108,998,875	\$180,065,119
Value of Crop Production	\$9,997,624	\$15,226,634	\$25,224,258	\$49,988,119	\$76,133,170	\$126,121,289
Value of Animal Production	\$4,008,030	\$6,147,373	\$10,155,403	\$20,040,148	\$30,736,865	\$50,777,013
Total	\$47,130,499	\$72,179,713	\$119,310,212	\$235,652,490	\$360,898,565	\$596,551,055

^A Values provide an estimate of the reduction in income and spending in the agricultural sector (direct impact) and the related reduction in income and spending in all other sectors of the state's economy (indirect impact).

^B Scenario 1 assumes no changes in agricultural purchases or output (sales) and a 1 cent sales tax. Scenario 2 assumes no changes in agricultural purchases or output (sales) and a 5 cent sales tax.

Table 2b. Estimated Direct, Indirect, and Total Economic Losses of Removing Sales Tax Exemption from Agricultural Purchases and Sales^A

	----- Scenario 3 ^B -----			----- Scenario 4 ^B -----		
	Direct	Indirect	Total	Direct	Indirect	Total
	Impact	Impact	Impact	Impact	Impact	Impact
	1 Cent	1 Cent	1 Cent	1 Cent	1 Cent	1 Cent
Agricultural Inputs Purchased	\$17,020,436	\$26,105,338	\$43,125,774	\$85,102,181	\$130,526,690	\$215,628,871
Agricultural Machinery & Equipment Purchased	\$12,791,924	\$19,619,798	\$32,411,722	\$63,959,620	\$98,098,988	\$162,058,607
Value of Crop Production	\$8,997,862	\$13,703,971	\$22,701,832	\$44,989,307	\$68,519,853	\$113,509,160
Value of Animal Production	\$3,607,227	\$5,532,636	\$9,139,863	\$18,036,133	\$27,663,179	\$45,699,312
Total	\$42,417,449	\$64,961,742	\$107,379,191	\$212,087,241	\$324,808,709	\$536,895,950

^A Values provide an estimate of the reduction in income and spending in the agricultural sector (direct impact) and the related reduction in income and spending in all other sectors of the state's economy (indirect impact).

^B Scenario 3 assumes a 10 percent reduction in in-state agricultural purchases and output (sales) and a 1 cent sales tax. Scenario 4 assumes a 10 percent reduction in in-state purchases and output (sales) purchases or sales and a 5 cent sales tax.

Additional Consideration

An additional consideration examined in this analysis was the level of tax revenue generated from the removal of the exemption to the agricultural sector. The primary reason for eliminating the current sales tax exemption is to generate additional revenue needed to meet planned state expenditures. While removing the sales tax exemption would be expected to increase sales tax collections associated with the agricultural

sector, it could also result in reduced income tax collections. Increased costs to the agricultural sector from increased taxes on purchases and reduced revenue from increased taxes on sales would be expected to reduce total taxable income for the agricultural sector. As such, collections of income tax from the sector would be expected to decrease.

Also, as was mentioned earlier, the reduction in income and spending in the agricultural sector has a ripple effect to other sectors in the economy. Indirect economic losses show that reductions in income and spending not only occur in the agricultural sector but also in the remaining sectors of the economy. Reduced income and spending in these other sectors would be expected to have negative impacts on both sales tax and income tax collections.

One of the components available through IMPLAN® is the ability to examine tax liability of each sector of the economy. Tables 3a and 3b show the expected increase in sales tax revenue, the decrease in income tax revenue, and the net tax revenue generated under the four examined scenarios.

Table 3a. Estimated Net Tax Revenue Generated With Removing Sales Tax Exemption from Agricultural Purchases and Sales

	----- Scenario 1 ^A -----			----- Scenario 2 ^A -----		
	Tax Revenue Generated ^B	Tax Revenue Lost ^C	Net Tax Revenue	Tax Revenue Generated ^B	Tax Revenue Lost ^C	Net Tax Revenue
Agricultural Inputs Purchased	\$18,911,596	\$1,362,064	\$17,549,532	\$94,557,979	\$6,810,319	\$87,747,660
Agricultural Machinery & Equipment Purchased	\$14,213,249	\$1,023,676	\$13,189,573	\$71,066,244	\$5,118,382	\$65,947,862
Value of Crop Production	\$9,997,624	\$717,814	\$9,279,810	\$49,988,119	\$3,589,070	\$46,399,049
Value of Animal Production	\$4,008,030	\$288,669	\$3,719,361	\$20,040,148	\$1,443,345	\$18,596,803
Total	\$47,130,499	\$3,392,223	\$43,738,276	\$235,652,490	\$16,961,116	\$218,691,374

^A Scenario 1 assumes no changes in agricultural purchases or output (sales) and a 1 cent sales tax. Scenario 2 assumes no changes in agricultural purchases or output (sales) and a 5 cent sales tax.

^B Tax revenue generated is the estimated sales tax generated through eliminating exemptions on agricultural purchases and sales.

^C Tax revenue lost is the estimated reduction in income taxes associated with the agricultural sector and the reduction in sales and income taxes across other sectors.

Table 3b. Estimated Net Tax Revenue Generated With Removing Sales Tax Exemption from Agricultural Purchases and Sales

	----- Scenario 3 ^A -----			----- Scenario 4 ^A -----		
	Tax Revenue Generated ^B	Tax Revenue Lost ^C	Net Tax Revenue	Tax Revenue Generated ^B	Tax Revenue Lost ^C	Net Tax Revenue
Agricultural Inputs Purchased	\$17,020,436	\$1,225,857	\$15,794,579	\$85,102,181	\$6,129,287	\$78,972,894
Agricultural Machinery & Equipment Purchased	\$12,791,924	\$921,309	\$11,870,615	\$63,959,620	\$4,606,544	\$59,353,076
Value of Crop Production	\$8,997,862	\$646,033	\$8,351,829	\$44,989,307	\$3,230,163	\$41,759,144
Value of Animal Production	\$3,607,227	\$259,802	\$3,347,425	\$18,036,133	\$1,299,011	\$16,737,122
Total	\$42,417,449	\$3,053,001	\$39,364,448	\$212,087,241	\$15,265,004	\$196,822,237

^A Scenario 3 assumes a 10 percent reduction in in-state agricultural purchases and output (sales) and a 1 cent sales tax. Scenario 4 assumes a 10 percent reduction in in-state purchases and output (sales) purchases or sales and a 5 cent sales tax.

^B Tax revenue generated is the estimated sales tax generated through eliminating exemptions on agricultural purchases and sales.

^C Tax revenue lost is the estimated reduction in income taxes associated with the agricultural sector and the reduction in sales and income taxes across other sectors.

The results indicate that net tax revenue is roughly 92 percent that of tax revenue generated. This means that for every dollar increase in sales tax revenue generated the agricultural industry results in an increase of total tax revenue received by the state of roughly \$0.92. The remaining \$0.08 or 8 percent represents the slippage in tax revenue generated due to offsetting reductions in both income and sales tax collections throughout the entire economy. This slippage in tax revenue generated is believed to be conservative with actual values that could increase to as high as 15 percent.