STAFF PAPER

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Contribution No. 93-571-D from the Kansas Agricultural Experiment Station, Kansas State University, Manhattan, KS 66506.

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Contribution No. 93-571-D by the Kansas Agricultural Experiment Station, Manhattan, KS 66506-4008.

THE U.S. HOUSE OF REPRESENTATIVES BTU TAX PROPOSAL

In January 1993, the Clinton administration proposed a broad-based energy tax. A previous study examines the impact of the original proposal on Kansas Farms (Williams, DeLano, and Langemeier 1993). This study considers the impact of the House Ways and Means Committee's modified proposal, which is briefly outlined below. The analysis is based upon the bill passed by the U.S. House of Representatives on May 27, 1993. Agriculture is not exempt from BTU taxes under this proposal.

A base rate of $0.268 per million BTU's would be imposed on all taxable fossil fuel energy sources. A supplemental tax of $0.342 per million BTU's (a total rate of $0.61 per million BTU's) would be imposed on all petroleum products other than heating oil, diesel fuel and gasoline used on farms, and liquified petroleum gases. On January 1 of each year beginning in 1998, the tax rates would be indexed for inflation using the implicit price deflator for the gross domestic product. Fossil fuels used to generate electricity would be exempt; all electricity would be taxed at rates set on a utility-by-utility basis, which would reflect the fuel mix actually used to generate the electricity.

Actual BTU content would be used to determine the tax on coal. For all other fossil fuels, the tax generally would be determined on the national average BTU content specified for that type of fuel. The tax on hydro- and nuclear-generated electricity would be calculated using the national average of BTU's required to produce fossil fuel-generated electricity (10,335 BTU's per kilowatt-hour of electricity).

The tax on natural gas would be imposed at the retail level for pipeline gas removed by a local distribution company (LDC), with secondary liability on

the LDC (except in the case of certain large customers). In other cases not involving a use tax, the tax would be imposed on removal from the transmission pipeline. The tax on petroleum would be imposed at the terminal rack. To minimize evasion, the Committee adopted a registration system for natural gas and petroleum parallel to the current rules for highway gas taxes. The tax on coal would be imposed upon receipt by the end user. The tax on electricity would be imposed at the retail level, with secondary liability on utilities (except in the case of certain large customers). A back-up use tax would be imposed for energy sources used before the points at which the tax generally would be imposed.

Imported taxable products would be taxed at the points provided for equivalent domestically produced energy sources. In addition, a tax would be imposed on certain imported products of which more than 2 percent of the value is attributable to direct energy inputs that would be taxable under the BTU tax, if the products were manufactured in the U.S. The tax would equal the tax that would be imposed had the product been manufactured in the U.S.

The collection point for the tax on highway and rail diesel fuel would be at the terminal rack. Diesel fuel to be used on farms and heating oil (which are exempt from the BTU tax supplemental rate) and highway and rail diesel fuel for uses exempt under the tax on highway and rail diesel fuel would be dyed to minimize evasion.

The BTU tax would be imposed at one-third of the full rates beginning on July 1, 1994, at two-thirds of the full rates beginning on July 1, 1995, and at the full rates beginning on July 1, 1996.

Nonfuel products such as lubricants would not be taxed. Nonfuel use of fossil fuels such as feedstocks also would not be taxed. This would include

feedstock uses of fossil fuels to produce fertilizers and agricultural chemicals.

The major changes from the Clinton Administration Proposal include a reduced rate for petroleum-based fuels consumed on the farm ($.599 to $.268 per million BTU's). Lubricants are eliminated from taxation. Although, fossil fuels used as feedstocks to produce fertilizers and chemicals are not taxed, those products would not be totally exempt. The cost of those inputs would be affected to some degree by a tax on the energy used in their packaging, transportation, distribution, and storage. In addition, all increases in costs would be slightly less because energy used to produce and refine oil and natural gas and its associated fuel products would not be taxed under the modified plan as they would be under the Administration's proposal.

OBJECTIVES

The general objective of this report is to evaluate the impact of the modified BTU tax on Kansas crop farms. The impact on whole-farm production costs is estimated for the typical farm in each Kansas Farm Management Association area using actual on-farm expenditures for energy and energy-intensive inputs. More specifically, the impact of the proposed BTU tax is determined for the average farm, irrigated cash crop farm, and dryland cash crop farm in each of the Kansas Farm Management Associations areas. The increased production costs are estimated and reported for the whole farm. In addition, the percent that each input contributes to the total increase in cost is reported. Impacts on specific enterprises are also evaluated using Kansas Farm Management Enterprise Budgets (Cooperative Extension Service, 1992a).

COST IMPACT ON KANSAS FARMS AND CROP ENTERPRISES

The impact of a BTU tax on Kansas farms is evaluated in two ways. The extent that production costs will increase for the average farm in each Kansas Farm Management Association area is estimated using actual expenditures for energy and energy intensive inputs in 1991 (Cooperation Extension Service, 1992b). The input costs that are examined in this analysis include seed, fertilizer, oil, irrigation energy, utilities, chemicals, hired machinery fuel, and fuel used in trucking at harvest.

The impact of a BTU tax on specific enterprises found on Kansas farms is also estimated using Kansas Farm Management Budgets (Cooperative Extension Service, 1992a). This evaluation includes the impact on energy and energy intensive inputs. These inputs include seed, herbicide, insecticides, fertilizer, fuel and oil for field operations, fuel and oil for irrigation, and grain drying expense.

The general procedure used in the analysis is to determine the dollar amount of each input used. This estimate is multiplied by the BTU tax per dollar of input for each specific input. The tax per dollar of input is determined by multiplying the tax per BTU by the BTUs contained in the number of units equivalent to a dollar of the input. Specific procedures are discussed in Williams, DeLano, and Langemeier (1993). However, there are several basic differences in the assumptions used in this report. First, the BTU values per unit of energy and energy-intensive inputs are different. The U.S. House of Representatives' version of the BTU tax specifies the BTU values to be equal to the national average BTU content of the energy. The Administration's proposal, evaluated previously, levied a tax on all BTUs used in evaluating the House proposal in the production of energy as well as the

marketable product. Therefore, the BTU values used based on heat content alone are somewhat smaller than those used to evaluate the Administration's proposal. The BTU values used for energy budgeting are presented in Tables A1, A2, and A3. The tax rates are also different. The rate for petroleum-based fuels consumed on the farm is $.268 per million BTUs, whereas that for petroleum-based fuels consumed off the farm is $.61 per million BTUs. The BTU taxes for basic energy inputs are provided in Tables A4 and A5.

IMPACT OF ENERGY TAXES ON THE AVERAGE FARM IN KANSAS

The impact of the proposed BTU tax on farm production costs for the average farm by Kansas Farm Management Association area ranges from $401 to $1,658. The impact is generally higher for crop farms classified as irrigated. Table 1 provides a summary of the cost increase from the energy tax by Kansas Farm Management Association areas. These estimates assume that the U.S. House of Representatives' proposal exempts feedstock energy used in the production of fertilizers and chemicals.

Table 2 summarizes the impacts on production costs of the Administration's original BTU tax proposal and of the U.S. House of Representatives' proposal with and without an exemption for feedstock fuels used in the production of fertilizers and chemicals. Even if feedstock energy used to produce these inputs is exempt, fertilizers and chemicals would not be totally unaffected because of the BTU tax on energy used in their packaging, transportation, distribution, and storage.

IMPACT OF ENERGY TAXES ON CROP ENTERPRISES IN KANSAS

Table 3 lists the increased cost of production per acre and per bushel for dryland crop enterprises in Kansas. Table 4 lists the increased cost of

production per acre and per bushel for irrigated crop enterprise in Kansas. The largest overall impact is on irrigated corn, and the smallest impact is on summer fallow dryland wheat. For dryland crops, the largest impact is on corn.

SUMMARY

The impact of the modified BTU tax on farm production costs ranges from a low of $401 for the average farm in northcentral Kansas to $2,638 for an irrigated crop farm in southwest Kansas. For the average farm, the estimated impact on production costs ranges from 1.9% to 5.7% of net income for 1991.

The majority of the BTU tax is likely to be passed on in the price of production inputs and incurred by the farm manager. In return, the manager will not be able to pass these costs on in terms of higher commodity prices. Although farm managers can reduce the use of energy-intensive inputs to some degree, resulting in smaller production and increased commodity prices, demand for some of the energy-intensive inputs is generally considered to be inelastic or unresponsive to price increases in the short run.

Some caution is needed when interpreting the results of this study. The impact of a feedstock fuel tax exemption for fertilizers and chemicals is difficult to incorporate into the cost estimates. It is unknown what percent of the fuels used in the production process will be classified as feedstocks versus the amount that will be taxed. The estimated impact on production costs also may be somewhat conservative for several reasons. The whole-farm analysis is based on the 1991 crop year, when energy use for irrigation in western Kansas was lower than normal because of above-average precipitation in the western three tiers of counties. The impact the BTU tax might have on costs of new equipment and equipment repair is not considered. Further, the

impact a BTU tax might have on local grain prices because of increased transportation costs is not included. Livestock enterprises are not specifically considered, but any reduction in grain production that leads to higher feed grain prices would affect livestock producers who purchase feed. Of course, those producers who raise their own feed would absorb the increased grain production costs. Increased transportation costs would affect the profitability of livestock enterprises as well. Costs for transporting livestock and feeds could actually be greater under the U.S. House of Representatives' proposal, because the tax on petroleum-based fuels consumed off the farm is about $.01 per million BTU greater than under the Administration's proposal.

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Table 1. Impact of Energy Taxes on Kansas Farm Production Costs

Farm Type, Numbers, and Costs	Farm Management Association Area					
	NW	SW	NC	SC	NE	SE
Average Farm						
Total	$1,150	$1,658	$401	$601	$520	$466
% of 1991 Net Income	4.35%	5.67%	2.45%	2.43%	2.78%	1.92%
$/Acre	$1.39	$1.73	$ .58	$ .68	$.81	$.63
Number of Farms	185	228	286	347	388	579
Dryland Farm						
Total	$580	$704	$458	$635	$659	$566
% of 1991 Net Income	1.68%	2.04%	2.49%	2.50%	3.99%	2.30%
$/Acre	$ .61	$ .69	$ .58	$.66	$1.23	$.58
Number of Farms	62	87	118	243	210	288
Irrigated Farm						
Total	$2,137	$2,638	---	$1,042	---	---
% of 1991 Net Income	7.23%	7.87%	---	2.33%	---	---
$/Acre	$2.40	$2.21	---	$1.30	---	---
Number of Farms	45	72	---	22	---	---

Table 2. Comparison of Energy Tax Scenarios.

Farm Type and Energy Tax Scenario	Farm Management Association Area					
	NW	SW	NC	SC	NE	SE
Average Farm						
Admin. Orig. Prop.[1]	$2,535	$3,145	$1,085	$1,678	$1,272	$1,192
HR w/o F&C Exempt[2]	$1,546	$2,120	$731	$976	$873	$821
Percent Reduction[3]	39%	33%	33%	42%	31%	31%
HR with F&C Exempt[4]	$1,150	$1,658	$401	$601	$520	$466
Percent Reduction[3]	55%	47%	63%	64%	59%	61%
Dryland Farm						
Admin. Orig. Prop.[1]	$1,672	$1,998	$1,311	$1,811	$1,732	$1,595
HR w/o F&C Exempt[2]	$927	$1,045	$772	$1,028	$1,122	$984
Percent Reduction[3]	45%	48%	41%	43%	35%	38%
HR with F&C Exempt[4]	$580	$704	$458	$635	$659	$566
Percent Reduction[3]	65%	65%	65%	65%	62%	65%
Irrigated Farm						
Admin. Orig. Prop.[1]	$4,312	$4,527	---	$2,909	---	---
HR w/o F&C Exempt[2]	$2,797	$3,347	---	$1,596	---	---
Percent Reduction[3]	35%	26%	---	45%	---	
HR with F&C Exempt[4]	$2,137	$2,638	---	$1,042	---	---
Percent Reduction[3]	50%	42%	---	64%	---	---

[1] Clinton Administration's original BTU tax proposal.
[2] U.S. House of Representatives' proposal assuming feedstock fuels for fertilizers and chemicals are not exempt.
[3] Percent reduction from the Administration's proposal.
[4] U.S. House of Representatives' proposal assuming feedstock fuels for fertilizers and chemicals are exempt.

Table 3. Production Cost Increase from a BTU Energy Tax by Crop Enterprise - Dryland

Crop	Budget Number	Cost per Acre	Cost per Unit
Wheat			
Summer Fallow Wheat (Western Kansas)	257	$ .33	$0.01/bu.
Continuous Cropped Wheat (Northeast Kansas)	572	$ .51	$0.01/bu.
Continuous Cropped Wheat (Central Kansas)	574	$ .49	$0.01/bu.
Dryland Wheat (Western Kansas WSF Rotation)	903	$ .32	$0.01/bu.
Continuous Cropped Wheat (Southeast Kansas)	992	$ .48	$0.01/bu.
Grain Sorghum			
Dryland Grain Sorghum (Northeast Kansas)	573	$ .74	$0.01/bu.
Dryland Grain Sorghum (Central Kansas)	575	$ .62	$0.01/bu.
Dryland Grain Sorghum (Western Kansas WSF Rotation)	904	$ .28	$0.01/bu.
Dryland Grain Sorghum (Southeast Kansas)	995	$ .68	$0.01/bu.
Dryland Sorghum Silage (Central Kansas)	648	$ .70	$0.06/ton
Corn			
Dryland Corn Production (Northeast Kansas)	571	$1.04	$0.01/bu.
Dryland Short-Season Corn Production (Southeast Kansas)	993	$ .96	$0.01/bu.
Soybeans			
Soybean Production (Southeast Kansas)	994	$ .58	$0.02/bu.
Soybeans Production (Northeast Kansas)	570	$ .63	$0.02/bu.
Alfalfa			
Alfalfa (Central and Eastern Kansas)	363	$ .90	$0.26/ton
Alfalfa Haylage (Central and Eastern Kansas)	523	$1.03	$0.16/ton

Table 4. Production Cost Increase from a BTU Energy Tax by Crop Enterprise - Irrigated

Crop and Irrigation Type	Budget Number	Cost per Acre	Cost per Unit
Wheat			
Center-Pivot Irrigated Wheat	583		
Natural Gas		$2.72	$0.05/bu.
Diesel		$2.01	$0.04/bu.
Electricity		$2.08	$0.04/bu.
Flood-Irrigated Wheat	590		
Natural Gas		$2.68	$0.05/bu.
Diesel		$1.98	$0.04/bu.
Electricity		$2.05	$0.04/bu.
Grain Sorghum			
Flood Limited-Irrigated Grain Sorghum	579		
Natural Gas		$2.74	$0.03/bu.
Diesel		$2.05	$0.02/bu.
Electricity		$2.12	$0.03/bu.
Flood-Irrigated Grain Sorghum	580		
Natural Gas		$3.87	$0.03/bu.
Diesel		$2.83	$0.03/bu.
Electricity		$2.93	$0.03/bu.
Center-Pivot Irrigated Grain Sorghum	582		
Natural Gas		$3.95	$0.03/bu.
Diesel		$2.88	$0.03/bu.
Electricity		$3.00	$0.03/bu.
Center-Pivot Limited Irrigated Grain Sorghum	587		
Natural Gas		$2.76	$0.03/bu.
Diesel		$2.04	$0.02/bu.
Electricity		$2.12	$0.03/bu.
Center-Pivot Irrigated Sorghum Silage	998		
Natural Gas		$4.13	$0.17/ton
Diesel		$3.06	$0.12/ton
Electricity		$3.18	$0.13/ton
Corn			
Flood-Irrigated Corn	578		
Natural Gas		$5.42	$0.04/bu.
Diesel		$4.03	$0.03/bu.
Electricity		$4.17	$0.03/bu.

Table 4. Production Cost Increase from a BTU Energy Tax by Crop Enterprise - Irrigated (continued)

Crop and Irrigation Type	Budget Number	Cost per Acre	Cost per Unit
Corn			
Center-Pivot Irrigated Corn	585		
Natural Gas		$5.41	$0.04/bu.
Diesel		$3.98	$0.03/bu.
Electricity		$4.14	$0.03/bu.
Center-Pivot Irrigated Short Season Corn	1000		
Natural Gas		$4.29	$0.04/bu.
Diesel		$3.22	$0.03/bu.
Electricity		$3.33	$0.03/bu.
Ridge-till Flood-Irrigated Corn	969		
Natural Gas		$4.56	$0.03/bu.
Diesel		$3.40	$0.02/bu.
Electricity		$3.52	$0.02/bu.
Flood-Irrigated Corn Silage	581		
Natural Gas		$5.47	$0.22/ton
Diesel		$4.07	$0.16/ton
Electricity		$4.21	$0.17/ton
Center-Pivot Irrigated Corn Silage	589		
Natural Gas		$5.62	$0.23/ton
Diesel		$4.20	$0.17/ton
Electricity		$4.35	$0.17/ton
Soybeans			
Center-Pivot Irrigated Soybeans	586		
Natural Gas		$3.82	$0.08/bu.
Diesel		$2.76	$0.06/bu.
Electricity		$2.87	$0.06/bu.
Flood-Irrigated Soybeans	577		
Natural Gas		$3.75	$0.08/bu.
Diesel		$2.70	$0.05/bu.
Electricity		$2.81	$0.06/bu.
Alfalfa			
Center-Pivot Irrigated Alfalfa	584		
Natural Gas		$5.83	$0.89/ton
Diesel		$4.12	$0.63/ton
Electricity		$4.30	$0.66/ton

Table A4. Energy Tax Rates per Million BTU

Coal	$.2680/million BTU
Oil	$.6100/million BTU
Natural Gas	$.2680/million BTU
Electricity Average	$.3289/million BTU
Diesel Fuel	
on Farm	$.2680/million BTU
off Farm	$.6100/million BTU
Gasoline	
on Farm	$.2680/million BTU
off Farm	$.6100/million BTU
L.P. Gas	$.2680/million BTU

Table A5. Tax per Unit of Energy Source

Diesel Fuel	
on Farm	$.037/gallon
off Farm	$.085/gallon
L.P. Gas	$.025/gallon
Lubricants	$.000/gallon
Natural Gas	$.273/1,000 $ft.^3$
Gasoline	
on Farm	$.034/gallon
off Farm	$.076/gallon
Electricity	
Average	$.0034/Kwh