Journal of Agribusiness 20,1 (Spring 2002):41–50

How Much Do Farmers Pay in Taxes?

Gregory M. Perry and Clair J. Nixon

A variety of federal, state, and local taxes are levied on farming operations in the United States. To date, there has been no attempt to systematically estimate what the total tax burden is on U.S. farms and how that burden varies from state to state. Based on the results of this analysis, the total farmer tax burden in 1994 was estimated at nearly $17 billion, most of which was in the form of real property tax (44%) and federal personal income tax (26%).

Key Words: farms, income taxes, property taxes, tax burdens

Interest in determining the annual tax burden of U.S. farms stems back over 100 years. Early on, the term "farm taxes" meant property taxes, as this was essentially the only tax levied on farms. Indeed, in their historical 1840–1932 overview of agricultural economics in the United States, Taylor and Taylor (1952) note:

> In the earlier period of our history, when practically all income was derived from land, the capital value of property was perhaps as good a measure as any of personal tax-paying ability, and the method certainly was easily applied (p. 1002).

Concern about farm taxes increased in the 1890s and 1920s when farm commodity prices dropped and farmers found themselves in financial distress. In 1922, the Bureau of Agricultural Economics responded to these concerns by surveying farmers about the taxes they paid in 1913–14 and 1921–22. Additional estimates of taxes paid were made every few years, eventually becoming an annual exercise that continues to the present (Taylor and Taylor, 1952).

The early 1900s initiated a period of significant change in how federal, state, and local governments generated revenue. For example, federal and state income taxes came into existence in 1913 after the 16th Constitutional Amendment was ratified. The federal government first levied the estate tax in 1916. West Virginia adopted the business occupation tax in 1921, the first tax based on retail sales.

The need for revenue during the Great Depression encouraged a number of states (starting with Mississippi) to enact a state sales tax. States progressively moved away

---

Gregory M. Perry is professor, Department of Agricultural and Resource Economics, Oregon State University; Clair J. Nixon is professor, Department of Accounting, Texas A&M University. The authors express appreciation to Jim Johnson and staff at RED/ERS for providing access to unpublished expenditure data reported in the Farm Costs and Returns Survey, and also to Ron Durst and staff at ERS for assistance in obtaining income tax data. This is Technical Paper No. 11894 of the Oregon Agricultural Experiment Station.

from solely a property tax basis to an income and sales tax basis. Property taxes as a percentage of total state and local tax collections fell from 74% in 1930 to 31% in 1990. By 1980, sales and excise taxes were the largest single source of tax revenue for state and local governments [U.S. Department of Commerce (USDC), 1995b].

The shift in how federal, state, and local governments generate revenue has had an impact on the total tax burden for U.S. farms. Yet, little is known about the relative size of these tax payments. Farmers want to know if they are being "fairly" treated in their state compared to farmers in neighboring states. Legislators and policy makers are continually adjusting tax laws to reduce tax burdens, to address inequities that exist in current laws, or to promote certain social or economic goals. A more complete picture of the total tax burden on farms would be beneficial to addressing issues of equity for both farmers and taxpayers.

For purposes of this analysis, farm taxes were divided into two categories: (*a*) those levied on farm inputs, and (*b*) those based on income. Input taxes include taxes on real and personal property, sales and excise, and other specialty taxes. Income taxes include federal income and self-employment taxes as well as state income taxes, where applicable.

Calculating Total Input Taxes Paid

Most of the tax estimates reported here were calculated using the 1994 State Income Accounts, which contain a summary by state of farm business expenses by major expense category [U.S. Department of Agriculture/Economic Research Service (USDA/ERS), 1996]. These estimates, in turn, were calculated using the USDA's 1994 Farm Costs and Returns Survey (FCRS). Data on a number of important tax categories were directly collected in the survey, including real and personal property taxes, vehicle registration, and (in 1992) payroll expenses. Sales, state excise, insurance, and utility taxes were calculated based on tax laws in each state. A summation of the major input taxes paid in each category, by state, is given in table 1.

An understanding of the various taxes and how they are assessed is useful when considering their impact on farming operations. Real property taxes are levied by local governments on land and all improvements attached to the land. Personal property taxes are levied on capital assets not attached to the land, such as machinery, livestock, and vehicles. In virtually all states, real property taxes on land (and sometimes land improvements) are based on the asset's productive value. Although personal property taxes are generally calculated based on the asset's market value, the procedures used by some states generate values that are substantially less than market value. About 15 states levy no personal property taxes, while others limit the tax only to selected business assets. Property taxes are generally used to fund schools and other local services.

Registration costs are levied on vehicles driven on the road, and are used by state and local governments either for general purposes or, in some cases, for road maintenance and improvement. Payroll expenses include employer payments for employee social security, unemployment insurance, and worker's compensation insurance.

Although these payments provide specialized insurance coverage and pension programs, their mandatory nature caused us to report their estimates.

Sales, state excise, insurance, and utility taxes were calculated using the Commerce Clearing House (1993 and updates) summary of state tax law. The calculations were made assuming farm operators could not avoid paying these taxes.[1] Sales taxes are levied on a variety of items used in farming, including building materials, equipment, repair parts, and tools.[2] Because the focus of this study is on farm businesses, sales taxes on home consumption items were ignored. Further, given that a number of states have different local sales tax rates, a range for sales taxes paid was estimated based on the minimum and maximum rates in these states (refer to table 1). State sales tax revenues generally fund state services, with local sales taxes being used to supplement property taxes in funding local governments.

The major excise taxes levied by state and federal governments are imposed on gasoline, diesel fuel, tobacco products, and alcoholic beverages. Generally speaking, farm operators pay little or no tax for off-road gasoline and diesel fuel, but are required to pay these taxes on fuel used by on-road vehicles. In this analysis, we assumed farmers do not purchase fuel for off-road use and then use it for on-road purposes.

Insurance taxes are levied by state governments on insurance policies sold in the state. Utility taxes are generally levied on the sale of electricity, natural gas, and telephone services. For the most part, these taxes are calculated as a percentage of gross sales, although in a few cases electricity is taxed on a per kilowatt basis. Revenues from these taxes go into general state revenue funds.

As expected, real property taxes on land (the major capital input in agriculture) represent the largest category of taxes levied on farm operations, generating just over $6 billion in tax revenues in 1994. Sales taxes were also significant, however, generating $1–$1.3 billion in tax revenue. In addition, payroll taxes cost farmers almost $1 billion. The input taxes listed in table 1 represented 4.6% of total gross farm revenue in 1994.

Estimating Income-Based Taxes for Farm Operators

Calculating the amount of federal income, social security, and state income taxes paid by farm operators on their farm business operations is complex. Most individuals who receive income from farming operations also receive wages, salaries, interest, dividends, rental income, or other types of business income. Consequently, the entire income picture for a farm family must be considered when determining what proportion of the total tax burden can be attributed to the farming enterprise.

---

[1] This assumption is reasonably accurate given (*a*) most items purchased have such a small tax that it is not worth avoiding, and (*b*) states take steps to ensure the tax cannot be avoided on large items.

[2] See Perry, Nixon, and Stoff (1994) for a more in-depth discussion about how sales and excise taxes are levied by states on farming operations.

Table 1. Total Income, Sales, Excise, Property, and Other Taxes Paid by State in 1994 ($ millions)

State	Sales		Excise		Vehicle Regist.	Insurance & Utility	Property Taxes	
	Min.	Max.	Min.	Max.			Real	Personal
Ala.	9.5	24.8	4.6	4.6	6.6	1.3	13.8	8.2
Alaska	0.0	0.0	0.1	0.1	0.1	0.0	1.2	0.1
Ariz.	14.7	19.8	4.4	4.4	2.9	0.9	53.9	8.0
Ark.	13.8	22.4	15.4	15.4	3.2	1.9	61.1	11.7
Calif.	194.4	227.3	33.5	33.5	34.1	10.8	439.9	83.3
Colo.	15.9	37.9	11.1	11.1	12.7	2.1	95.5	11.2
Conn.	0.4	0.7	0.5	0.5	0.8	0.6	12.9	8.8
Del.	0.0	0.0	1.0	1.0	0.5	0.4	1.4	0.0
Fla.	30.0	35.6	5.9	9.1	4.9	2.2	157.8	22.9
Ga.	19.5	29.9	5.9	5.9	5.3	2.6	64.6	29.7
Hawaii	3.8	4.8	0.9	0.9	0.7	0.6	53.1	0.0
Idaho	8.2	9.4	9.0	9.0	10.7	3.5	42.3	14.2
Ill.	47.9	68.1	19.2	19.2	13.0	11.7	535.9	0.0
Ind.	36.8	36.8	12.3	12.3	5.0	2.8	164.3	53.7
Iowa	27.0	32.1	24.0	24.0	17.9	5.9	403.4	0.0
Kans.	23.3	33.8	20.5	20.5	11.0	2.0	154.3	38.5
Ky.	24.2	25.1	6.4	6.4	2.4	2.5	52.6	14.3
La.	17.1	28.4	6.8	6.8	0.6	1.6	28.3	3.0
Maine	2.9	2.9	1.4	1.4	1.2	0.4	18.2	12.0
Md.	5.2	5.5	2.7	2.7	2.3	0.7	29.4	18.5
Mass.	2.2	2.2	1.1	1.1	1.1	0.4	19.5	6.7
Mich.	13.8	13.8	7.9	7.9	6.0	3.0	237.3	21.3
Minn.	56.0	69.1	17.3	17.3	6.0	2.9	280.6	23.4
Miss.	21.9	22.5	11.9	11.9	2.4	1.8	35.7	9.3
Mo.	22.0	38.9	12.1	12.1	9.7	2.8	91.7	33.1
Mont.	0.9	0.9	10.6	10.6	6.3	2.2	76.2	29.2
Nebr.	33.1	42.4	22.1	22.1	5.4	2.4	589.5	22.9
Nev.	3.0	3.2	0.9	0.9	2.3	0.3	4.4	2.4
N.H.	0.0	0.0	0.3	0.3	0.4	0.2	12.6	2.8
N. Mex.	14.8	19.6	4.5	4.5	5.3	1.1	13.0	4.3
N.J.	4.5	5.9	1.5	1.5	1.2	1.0	43.6	6.7
N.Y.	13.9	28.1	13.0	13.0	4.5	4.0	186.2	0.0
N.C.	20.9	21.9	13.8	13.8	4.3	3.4	72.1	19.4
N. Dak.	29.2	36.9	12.7	12.7	6.8	3.4	127.4	10.3
Ohio	18.2	25.1	11.3	11.3	11.7	5.2	201.8	10.1
Okla.	12.9	23.4	12.6	12.6	13.0	3.0	62.9	22.3
Oreg.	0.0	0.0	7.0	7.3	2.5	1.8	90.3	8.9
Pa.	29.9	35.4	7.1	7.1	7.4	5.7	159.3	0.0
R.I.	0.0	0.0	0.1	0.1	0.1	0.1	3.8	1.5
S.C.	5.1	6.3	3.3	3.3	2.0	0.5	24.4	5.7
S. Dak.	24.5	38.5	10.5	10.5	4.1	3.3	193.6	0.0
Tenn.	23.5	29.4	9.0	9.0	4.6	1.6	63.0	11.4
Texas	50.9	73.4	40.0	40.0	16.8	7.3	378.1	39.8
Utah	4.6	5.7	3.3	3.3	2.8	0.7	13.4	6.2
Vt.	2.1	2.3	1.0	1.0	0.9	0.4	28.6	12.3
Va.	8.3	9.1	5.6	5.6	2.9	0.8	76.0	13.5
Wash.	63.9	73.7	10.5	10.5	19.6	4.6	98.4	24.6
W. Va.	3.2	3.2	0.9	0.9	1.3	0.5	6.0	2.7
Wis.	30.3	36.1	11.4	11.4	6.1	4.1	414.5	55.5
Wyo.	4.6	7.6	2.3	2.3	3.2	0.3	19.8	5.9
TOTAL	1,013.0	1,320.1	451.1	454.6	296.8	123.3	6,007.7	750.2

Table 1. Extended

State	Payroll	Federal Income	Social Security	State Income	Total Taxes by Category			Taxes as % of Gross Farm Income
					Input	Income	All	
Ala.	8.3	119.3	13.0	23.3	52.2	155.5	207.7	5.7%
Alaska	0.3	1.1	0.1	0.0	1.8	1.2	3.0	18.3%
Ariz.	13.3	37.9	9.6	7.1	98.1	54.6	152.7	7.5%
Ark.	11.1	163.9	29.8	44.1	118.3	237.8	356.1	5.9%
Calif.	313.0	523.2	58.5	137.7	1,109.0	719.4	1,828.4	8.4%
Colo.	13.4	86.5	15.9	18.8	161.9	121.2	283.0	6.2%
Conn.	5.0	16.1	2.4	3.1	29.0	21.7	50.7	9.7%
Del.	1.6	13.5	0.8	4.4	4.9	18.7	23.6	3.2%
Fla.	46.4	261.5	30.8	0.0	270.2	292.3	562.5	9.0%
Ga.	10.8	202.4	23.5	51.9	138.4	277.8	416.3	7.4%
Hawaii	14.5	5.0	0.5	1.9	73.6	7.4	81.1	15.1%
Idaho	15.8	56.3	12.3	17.2	103.7	86.0	189.7	5.6%
Ill.	15.2	213.0	76.4	35.1	642.8	324.5	967.4	10.0%
Ind.	10.7	101.5	35.1	25.9	285.7	162.6	448.3	7.8%
Iowa	13.3	222.6	63.6	68.6	491.5	354.8	846.3	6.5%
Kans.	11.9	110.0	54.4	26.5	261.5	190.9	452.4	5.0%
Ky.	7.6	135.0	25.8	39.4	110.0	200.1	310.1	8.0%
La.	7.2	60.2	10.9	8.7	64.5	79.8	144.4	5.8%
Maine	4.0	9.0	1.2	2.7	40.0	13.0	53.0	9.5%
Md.	6.1	33.0	1.9	8.4	65.0	43.4	108.4	6.9%
Mass.	5.0	13.0	2.0	4.4	36.1	19.4	55.5	10.5%
Mich.	25.2	60.5	24.9	15.5	314.6	101.0	415.6	10.8%
Minn.	20.8	124.9	44.9	42.2	407.0	212.1	619.1	6.9%
Miss.	8.3	64.4	11.5	12.0	91.3	87.9	179.2	4.9%
Mo.	9.9	145.9	43.5	30.8	181.2	220.3	401.5	7.5%
Mont.	6.9	62.0	9.7	16.3	132.3	87.9	220.2	9.1%
Nebr.	12.5	123.4	64.6	29.8	687.8	217.9	905.7	9.1%
Nev.	2.0	10.3	1.5	0.0	15.3	11.8	27.1	8.0%
N.H.	1.4	4.1	0.6	0.1	17.7	4.8	22.5	11.6%
N. Mex.	7.8	41.9	5.7	9.7	51.0	57.3	108.3	6.1%
N.J.	7.5	28.6	1.8	5.2	66.0	35.6	101.6	11.3%
N.Y.	21.5	73.5	4.0	25.5	243.0	103.0	346.0	11.2%
N.C.	13.5	252.9	55.6	82.9	147.5	391.4	539.0	7.0%
N. Dak.	4.9	41.8	26.6	5.4	194.7	73.9	268.6	6.8%
Ohio	13.2	130.7	49.6	30.0	271.5	210.3	481.8	8.9%
Okla.	6.9	157.2	15.4	41.8	133.5	214.4	347.9	7.2%
Oreg.	32.8	74.1	7.3	31.5	143.3	113.0	256.3	7.1%
Pa.	22.7	108.2	5.4	20.2	232.2	133.8	366.0	8.8%
R.I.	0.6	2.9	0.4	0.8	6.1	4.1	10.2	11.4%
S.C.	4.8	48.0	5.2	12.7	45.8	65.8	111.7	6.9%
S. Dak.	4.8	71.7	36.2	0.0	240.8	108.0	348.7	8.2%
Tenn.	5.2	86.5	16.5	0.8	118.3	103.8	222.1	8.2%
Texas	34.9	543.5	73.2	0.0	567.8	616.6	1,184.4	7.7%
Utah	4.6	25.9	4.6	7.7	35.6	38.1	73.7	7.4%
Vt.	2.5	12.1	1.5	3.3	47.7	17.0	64.7	12.0%
Va.	6.4	78.7	15.8	20.0	113.5	114.4	227.9	9.0%
Wash.	54.2	143.3	15.1	0.0	275.7	158.4	434.1	7.9%
W. Va.	1.0	11.3	1.9	3.1	15.5	16.3	31.8	6.3%
Wis.	28.4	107.2	40.8	37.5	550.4	185.5	735.8	11.4%
Wyo.	3.7	46.0	2.5	0.0	39.9	48.5	88.4	9.9%
TOTAL	903.2	5,065.7	1,055.2	1,014.0	9,545.3	7,134.9	16,680.2	8.1%

Income tax data are collected by the U.S. Internal Revenue Service (IRS) and distributed to the revenue offices of each state. Unfortunately, the states do not report detailed income tax information to the IRS, nor do they generally have the capability to estimate taxes paid by farmers in their state.

Another complicating dimension when estimating income taxes paid by farm operators is the fact that farm income can appear on several different federal tax forms. For example, Schedule F is used solely by farm operators (usually sole proprietors) to report most types of farm income and expenses. However, partnership, Subchapter S Corporate, and farm rental income not reported on Schedule F is summarized on form K-1 and reported on Schedule E, where it is commingled with partnership, corporate, and rental income from nonfarm sources. Sales of cull breeding stock, land, and other assets are treated as capital gains or losses and reported on Schedule D. Further, depreciation recapture is summarized on Schedule 4797.

The IRS draws a sample of returns filed each year for use in special research projects involving tax issues. The sample includes total values from all of the forms filed with each tax return, as well as limited additional data from each form. Although the total sample size drawn is several hundred thousand, only about 5,000 returns include a Schedule F. Given the relatively small sample size, the Statistics of Income Division within the IRS was unable to summarize the returns at the state level, but was able to provide summaries by USDA farm production regions for the 1994 study year.

The first step in using the IRS sample data set was to isolate all of the returns reporting some farm-related income. For this purpose, an entry on line 1 of Schedule SE (Self-Employment tax) became a key piece of information to identify tax returns that reported farm income. Line 1 summarizes farm profit for each self-employed person from Schedule F as well as income from Schedule K-1. Schedule K-1 is used to report an individual taxpayer's share of partnership, Subchapter S corporation, and trusts and estates income or loss. Based on these criteria, the IRS estimated that 2.344 million individuals received some form of farm income in 1994, of which 2.232 million filed a Schedule F and the remaining 112,000 reported only K-1 farm income.[3]

Once the farm-related tax returns were identified, the IRS prorated total taxes paid for each return based on the amount of income reported on Schedule E and Schedule F. If a loss was reported, taxes paid were set at zero.[4] Social security (self-employment) taxes were prorated based on the proportion of farm income to total income reported on Schedule SE. The income and social security taxes were calculated nationally and for each USDA production region. Capital gains taxes were also prorated based on the proportion of capital gains income to adjusted gross income.

As previously noted, Schedule E summarizes income from a number of farm and nonfarm sources. A major portion of Schedule E is devoted to rental real estate and royalties generated from nonfarm sources. By deducting this income from total

---

[3] This number seems very reasonable given (*a*) the *1992 Census of Agriculture* (USDC, 1995a) reported 187,000 partnerships, 65,000 family corporations, and 12,000 estates or trusts, and (*b*) one would expect a substantial proportion of partnerships or S corporations also have sole proprietor income, and therefore file a Schedule F.

[4] The IRS statisticians felt it was inappropriate to prorate losses.

Schedule E income, farm rental, partnership, S corporation, and estate and trust income was isolated. Although it was not possible to further separate farm and nonfarm partnership, S corporation, and estate and trust income, it seems likely most of this income was farm related.[5]

Schedule D (capital gains) income is also an important source of farm income because it includes sales of farm real estate and raised breeding livestock. In addition, Schedule D includes capital gains from the sales of stocks, bonds, and nonfarm real estate. Again, there was no way to separate the farm-related income from income generated off the farm. According to 1994 USDA estimates, only about 5% of farm business assets were in cash, savings, stocks, bonds, and similar assets, compared to 75% in real estate and 7% in livestock and poultry (USDA/ERS, 1996). Consequently, excluding the impact of capital gains income on total taxes paid by farmers would be inappropriate. Using this approach, taxes generated from the different forms were as follows: Schedule F = $917 million, Schedule E = $2,018 million, and Schedule D = $2,131 million.

Total taxes paid in each region were distributed to each state in the region using state calculations for personal income, cash farm income, and federal and state income taxes. The results are reported in table 1. Total federal income taxes were $5.07 billion. The taxes tended to be higher in states with no income tax, as well as states located in the southeastern United States. Social security taxes were $1.055 billion, a much smaller amount than the federal income tax obligation. These results are consistent with other studies suggesting that the relatively large portion of unearned income generated by farms results in a disproportionately low social security tax burden (Perry, Nixon, and Stoff, 1994). As seen from table 1, state income taxes were estimated at $1.014 billion, and total income-based taxes (i.e., federal, state, and social security) were $7.135 billion.

The pie chart in figure 1 illustrates the breakdown between income and input taxes paid by farmers in 1994, by major category. Property taxes represented the largest proportion (44%) of the total farm tax burden, with federal income taxes representing another 26%. The remaining tax burden was nearly equally divided among social security, state income, sales, payroll, and other taxes.

The results reported in table 1 identify Alaska as the state with the highest taxes for agriculture, with 18.3% of total gross income devoted to taxes. Other high-tax states are Hawaii, Vermont, New Hampshire, Rhode Island, and Wisconsin. All of these states assess per acre property tax values which are well above the national average (USDA/ERS, 1996). In New Hampshire, for example, per acre property taxes are high because the state has no sales tax and a limited income tax, making state and local government largely dependent on property taxes to fund services. In the other states, urban pressures have pushed farm property values to high levels. Although these states do not tax property at market value, they tend to have higher than average assessed values on land and improvements.

---

[5] Because of the method used to identify the study sample, nonfarm partnerships, S corporations, and trusts and estates would only be included in Schedule E totals if the individual also filed a Schedule F.

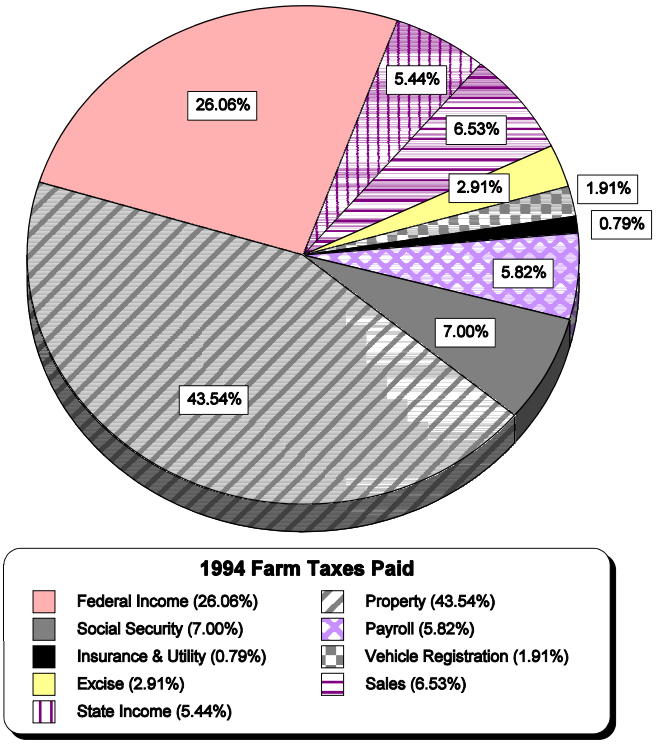

Figure 1. Farm taxes paid in 1994, by type of tax

From table 1, the state with the lowest overall tax burden for farms is Delaware, with only 3.2% of gross farm income devoted to taxes. Delaware has no sales tax and exempts much of its farm land from any property tax. Other low-tax states are Mississippi, Kansas, Idaho, and Alabama. Most of the low-tax states are at or near the bottom nationally in per acre property taxes paid.

In considering these results, we do ask the reader to keep in mind the following caveats. Given estimates of wages paid by farm operators, payroll taxes should be more than the amounts reported in table 1. This discrepancy could be caused by farmers (*a*) under-reporting these payments in the Farm Costs and Returns Survey, (*b*) failing to purchase worker's compensation insurance or unemployment insurance, or (*c*) under-reporting wage income for social security taxes.

Although 15 states do not levy personal property taxes on farm assets, all states are shown in table 1 to have some personal property taxes paid by farmers. This result may have occurred because farmers filling out the cost of production surveys were unsure where certain taxes should be reported. In addition, some farms have farm-related facilities designed to process or otherwise add value to their farm products, and these facilities are subject to the personal property tax.

Concluding Comments

The analysis conducted here provides insights into the relative importance of different taxes in determining farm operator tax burden on a state-by-state basis. Most research into farm operator tax burdens has been focused at the federal level. This study incorporates the federal income and employment tax results with state income and input tax values. Our analysis determined the following:

- Real estate taxes are the single largest tax paid by farm operators, representing approximately 44% of their entire input tax burden.
- Federal income taxes are also a significant tax, representing about one-fourth (26%) of the total tax burden.
- Federal social security, state income, and sales taxes likewise are a significant cost to farmers, representing over $1.5 billion annually.

Interestingly, most of the federal income taxes estimated here for farmers were generated from IRS Schedules E and D. While there will be some nonfarm taxable income included in the results, it will likely be offset by income taxes generated by C corporations that were not included in the estimates.

Although the results are based on only one year of data (1994), the findings do provide a snapshot of the relative farm operator tax burdens between states. Further, there have been changes in the federal and state tax laws since 1994. Still, the nature of these changes should not significantly shift the tax burden between states. Even changes in agricultural income since 1994 should not alter the basic tax burden relationships identified in table 1.

References

Ahearn, M. C., J. E. Perry, and H. S. El-Osta. (1993, January). "The economic well-being of farm operator households, 1988–90. Agr. Econ. Report No. 666, U.S. Department of Agriculture/Economic Research Service, Washington, DC.

Commerce Clearing House, Inc. (1993, with updates). *Multistate Sales Tax Guide*, Vols. 1–9. Chicago: Commerce Clearing House, Inc.

Perry, G. M., C. J. Nixon, and M. C. Stoff. (1994). "Sales and excise taxes: Differential state subsidies to production agriculture." *Agricultural Finance Review* 54, 80–93.

Taylor, H. C., and A. D. Taylor. (1952). *The Story of Agricultural Economics in the United States, 1840–1932.* Ames, IA: Iowa State College Press.

U.S. Department of Agriculture. (1994). "1994 Farm Costs and Returns Survey" (FCRS). Annual farm survey, jointly conducted by Economic Research Service and National Agricultural Statistics Service, USDA, Washington, DC.

U.S. Department of Agriculture, Economic Research Service. (1996, August). "Farm Business Economics Report, 1994." ECI 1995, USDA/ERS, Rural Economy Division, Washington, DC.

U.S. Department of Agriculture, National Agricultural Statistics Service. (1996). *Agricultural Statistics, 1995–96.* USDA/NASS, Washington, DC.

U.S. Department of Commerce, Bureau of the Census. (1995a, January). *1992 Census of Agriculture.* Data on two compact disks, CD92-AG-1B and 1C. Bureau of the Census, Economic and Statistics Administration, Washington, DC.

———. (1995b). *Statistical Abstract of the United States, 1995.* USDC/Bureau of the Census. Washington, DC: Government Printing Office.

U.S. Internal Revenue Service, Statistics of Income Division. (1994). Unpublished database: 1994 tax summaries by USDA farm production region. IRS, Washington, DC.