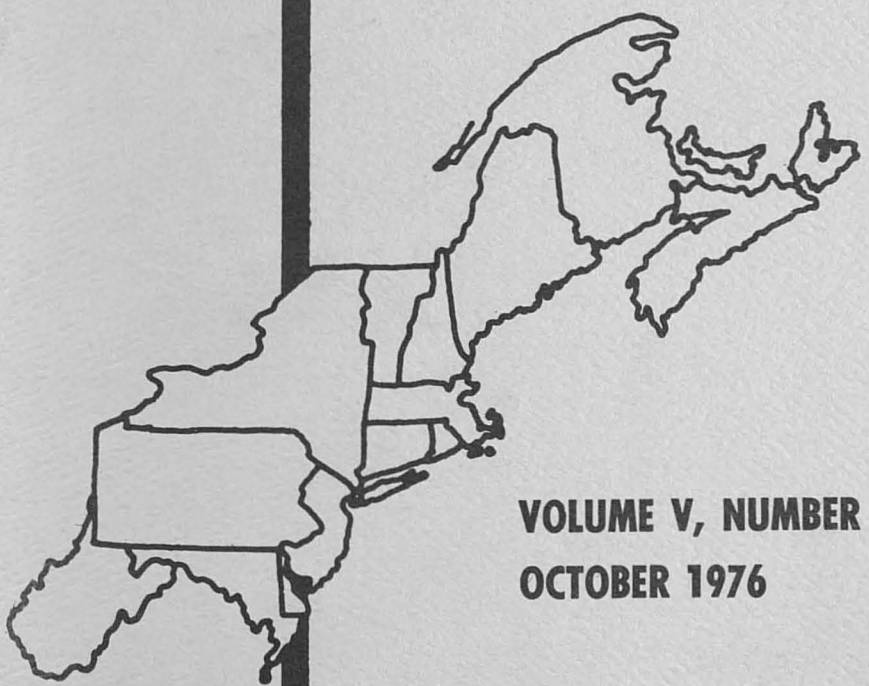
JOURNAL OF THE

Northeastern Agricultural Economics Council



VOLUME V, NUMBER 2
OCTOBER 1976

THE AGRICULTURAL SECTOR AND HORIZONTAL EQUITY OF THE PROPERTY TAX: A HISTORICAL LOOK

Jerome M. Stam and Ann Gordon Sibold, Economists
Economic Development Division, USDA-ERS
Washington, D.C.

The property tax continues to play a major role in raising public revenues at the local level. While this tax contributed only 15.1 percent of all governmental (Federal, State and local) tax revenue in fiscal 1974, it accounted for 35.3 percent of local general revenue and 82.2 percent of all local tax revenue [20]. It also continues to be especially important as a source of revenue for local schools with 57.4 percent of all local property taxes going to support local schools in 1969-70--the latest year for which data are available [3, pp. 18-19].

Despite its continued importance the property tax remains controversial. Its alleged shortcomings are numerous, and one major criticism involves its lack of equity. This paper examines the treatment of the agricultural and nonagricultural sectors in a horizontal equity framework. The analysis draws on both historical data and recent revisions in the theory of tax incidence. The paper concludes with a discussion of some implications of the analysis for the future.

The principle of horizontal equity states that equals should be treated equally. In United States law this principle is reflected in the legal rule of equality under the law. In tax theory it is reflected in the ability-to-pay criterion, which states, first, that individuals ought to be taxed according to their ability-to-pay, and second, that individuals having similar economic circumstances should be taxed equally. In this paper, horizontal equity is measured in terms of taxes as a percentage of income. 1/

1/ It is recognized that income is not the only criterion of ability-to-pay. The property tax is a type of wealth taxation and another measure of horizontal equity between sectors could be tax payments as a percentage of wealth. (This assumes that wealth is correlated with holdings of taxable property.) However, the data problems in dealing with wealth are severe and the wealth question is not addressed in this paper.

Importance

A reexamination of the equity of the property tax seems appropriate at this time for two reasons. First, the theory of property tax incidence has been under considerable discussion lately, and the current thinking of specialists in this area needs to be incorporated into the thinking of others who make use of property tax data, but do not specialize in tax work. In addition, there have been a number of secular changes in both the agricultural sector and in local government finance which may invalidate earlier studies. These changes include: (1) The decline in the agricultural sector's share of the gross national product, (2) the decrease in importance of the property tax in the U.S. system, (3) the increase in the use of local nonproperty taxes, especially in the urban areas, (4) the long-run contraction of the property tax base, manifested in increased exemptions of personalty from taxation; the widespread efforts to provide property tax relief to homeowners and aged and low-income families; and the passage of farm use-value assessment laws in nearly three-fourths of the States since 1956, and (5) the changes in educational finance which affect the property tax. This paper focuses on the question of how the agricultural sector has fared, compared to the nonagricultural sector, as these changes have occurred.

Recently a number of economists have changed their view of property tax incidence. They rejected the traditional view that landowners bore the tax on land, but that the tax on buildings, improvements, and businesses was borne in large part by consumers in proportion to their consumption patterns. This view led to the characterization of the property tax as an excise tax. Excise taxes are thought to be regressive because increases in income do not lead to proportionate increases in consumption.

The new view, simply stated, is that the property tax leads to a lower overall rate of return on investment and so is ultimately borne by the owners of capital [2]. This leads to the conclusion that the tax is progressive because the ownership of capital is concentrated in the higher income brackets. The importance for the agricultural sector is that the degree of horizontal tax equity it receives, compared with the nonagricultural sector, depends in part on the theoretical view held.

The Property Tax Data

Three key property tax series provide the core data for much of the analysis. These are the Bureau of the Census, Governments Division's total property tax series, and the USDA series on the farm real estate and farm personal property taxes, respectively [5, 17, 19, 20, 21]. The Census series reports taxes conditioned on the ownership of property and its value. This series dates back to 1902, but includes only data for selected years prior to 1944. The USDA tax series on farm real estate includes all ad valorem taxes levied on farmland and improvements that

are imposed by State and local governments. The USDA farm personal property tax series, estimated since 1924, shows total ad valorem taxes levied by State and local governments on farmers' taxable personal property--farm machinery, household furnishings, livestock, and motor vehicles.2/

Analysis

In comparing the property tax burden of the agricultural and non-agricultural sectors, the focus is on the tax as a share of income flows. This stresses the ability-to-pay principle of taxation. It should be recognized, however, that in the final analysis the entire tax burden must be borne by individuals. Even though taxes may be collected from business firms, the ultimate burden must be traced to individuals or households in their roles as owners of the business, as its employees, or as consumers of its products.

The total U.S. property tax bill was $47.8 million in 1974 (Table 1). Farm property taxes totaled $2.9 million or 6.0 percent of the U.S. total that same year. Farm real estate taxes comprised 85.4 percent of the 1974 farm total with farm personal property taxes making up the balance. In 1927, the earliest year for which farm personalty data are available in Table 1, farm real estate taxes were 87.8 percent of the farm total.

Tax changes through time are revealing. The farm real estate tax and the total U.S. property tax bills increased 21.2 and 66.6 times, respectively, during the 1902-74 period. Or, viewed another way, farm real estate taxes declined from 15.7 percent of the U.S. total in 1902 to 5.1 percent in 1974. Most data series must be compared on the basis of a shorter time span due to data limitations in the earlier years. Thus, total farm property (real and personal) taxes declined from 12.7 percent of total U.S. property taxes in 1927 to 6.0 percent in 1974. (A short-lived increase occurred from 12.7 percent to 13.1 percent between 1927 and 1932 before the longer term decline set in.)

2/ Compared with the Governments Division's property tax series, the USDA farm tax series are lagged one year prior to 1962 and six months thereafter. This is because of the Government Division's switch to a fiscal year basis in 1962-63. Thus, 1961 USDA taxes levied data are compared with 1962 Census taxes collected data, etc., prior to 1962. After 1962, the 1963 USDA taxes levied data are compared with the 1963-64 Census taxes collected data, etc. The shortening of the lag time may reflect actual conditions to a large degree since the interval between property tax assessment and collection has shortened through the years. It is now only a few months in many States [7].

Table 1
Total property taxes, farm property taxes, and national income, United States, selected years, 1902-74 a/

Year	Total property taxes	Farm real estate taxes	Farm personal property taxes	Total farm property taxes	Farm real estate taxes/total property taxes	Farm personal property taxes/total property taxes	Total farm property taxes/total property taxes	National income from farming/ national income	Total property taxes/ national income	Total farm property taxes/national income, farm sector	Total non-farm property taxes/national income, non-farm sector
	Million dollars				Percent						
1902	706	110.5	NA	NA	15.7	NA	NA	NA	3.4	NA	NA
1913	1,332	191.2	NA	NA	14.4	NA	NA	NA	3.8	NA	NA
1922	3,321	509.7	NA	NA	15.3	NA	NA	NA	5.3	NA	NA
1927	4,730	525.6	73.0	598.6	11.1	1.5	12.7	NA	5.8	NA	NA
1932	4,487	526.1	62.5	588.6	11.7	1.4	13.1	8.0	10.6	17.4	10.0
1934	4,076	398.4	39.3	437.7	9.8	1.0	10.7	8.5	8.4	10.6	8.2
1936	4,093	392.3	42.0	434.3	9.6	1.0	10.6	8.7	6.4	7.7	6.2
1938	4,440	404.8	47.1	451.9	9.1	1.1	10.2	8.8	6.7	7.8	6.6
1940	4,430	406.8	49.1	455.9	9.2	1.1	10.3	7.5	5.6	7.6	5.4
1942	4,537	406.7	56.1	462.8	9.0	1.2	10.2	8.8	3.3	3.9	3.3
1944	4,604	400.2	76.8	477.0	8.7	1.7	10.4	7.8	2.5	3.4	2.5
1945	4,802	418.9	80.4	499.3	8.7	1.7	10.4	8.3	2.7	3.3	2.6
1946	4,986	464.8	91.5	556.3	9.3	1.8	11.2	10.0	2.8	3.1	2.8
1947	5,507	518.7	98.5	617.2	9.4	1.8	11.2	9.5	2.8	3.3	2.8
1948	6,126	605.4	127.7	733.1	9.9	2.1	12.0	9.6	2.8	3.5	2.7
1949	6,842	656.0	150.1	806.1	9.6	2.2	11.8	7.5	3.2	5.0	3.1
1950	7,349	706.2	166.5	872.7	9.6	2.3	11.9	7.2	3.1	5.2	3.0
1951	7,926	742.4	176.9	919.3	9.4	2.2	11.6	7.1	2.9	4.7	2.8
1952	8,652	776.7	208.8	985.5	9.0	2.4	11.4	6.4	3.0	5.4	2.9
1953	9,375	810.4	228.6	1,039.0	8.6	2.4	11.1	5.4	3.1	6.4	2.9
1954	9,967	846.9	221.4	1,068.3	8.5	2.2	10.7	5.2	3.3	6.9	3.1
1955	10,735	878.4	216.0	1,094.4	8.2	2.0	10.2	4.4	3.3	7.5	3.1
1956	11,749	931.2	223.0	1,154.2	7.9	1.9	9.8	4.2	3.4	7.9	3.2
1957	12,864	974.2	219.4	1,193.6	7.6	1.7	9.3	4.0	3.6	8.2	3.4
1958	14,047	1,032.1	228.2	1,260.3	7.3	1.6	9.0	4.6	3.9	7.5	3.7
1959	14,983	1,080.7	247.9	1,328.6	7.2	1.7	8.9	3.6	3.8	9.2	3.6
1960	16,405	1,154.7	274.0	1,428.7	7.0	1.7	8.7	3.8	4.0	9.2	3.8
1961	18,002	1,243.1	286.1	1,529.2	6.9	1.6	8.5	3.8	4.2	9.5	4.0
1962	19,054	1,311.0	297.5	1,608.5	6.9	1.6	8.4	3.6	4.2	9.8	4.0
1963	19,833	1,372.2	304.1	1,676.3	6.9	1.5	8.5	3.4	4.1	10.3	3.9
1964	21,241	1,417.2	320.2	1,737.4	6.7	1.5	8.2	2.9	4.1	11.4	3.9
1965	22,583	1,466.7	331.3	1,798.0	6.5	1.5	8.0	3.2	4.0	10.1	3.8
1966	24,670	1,535.7	338.7	1,874.4	6.2	1.4	7.6	3.1	4.0	9.8	3.8
1967	26,047	1,633.8	367.4	2,001.2	6.3	1.4	7.7	2.7	4.0	11.3	3.8
1968	27,747	1,730.5	385.5	2,116.0	6.2	1.4	7.6	2.5	3.9	11.7	3.7
1969	30,673	1,881.8	402.8	2,284.6	6.1	1.3	7.4	2.7	4.0	11.2	3.8
1970	34,054	2,038.8	388.3	2,427.1	6.0	1.1	7.1	2.6	4.3	11.7	4.1
1971	37,852	2,169.1	402.8	2,571.9	5.7	1.1	6.8	2.5	4.4	12.0	4.2
1972	42,133	2,294.1	409.3	2,703.4	5.4	1.0	6.4	2.7	4.4	10.4	4.3
1973	45,283	2,390.5	424.9	2,815.4	5.3	0.9	6.2	3.9	4.2	6.7	4.1
1974	47,754	2,450.1	420.1	2,870.2	5.1	0.9	6.0	3.2	4.2	7.8	4.1
Total b/	609,997	41,804.6	8,483.8	49,477.0	6.9	1.4	8.2	4.1	4.0	7.9	3.8

NA= Not Available. a/ Includes Alaska and Hawaii beginning with 1960. b/ Based on years for which data are available.
Sources: [5, 17, 19, 20, 21, 24]

Farm personal property taxes as a percent of all U.S. property taxes decreased from 1.5 percent to 0.9 percent during the same period, but peaked at 2.4 percent in 1952-53 during the interim. This reflects the relative decline of personal property taxation in the U.S. property tax structure through time.

A common standard for the appraisal of taxes is that of economic neutrality among industries, inputs, and locations. According to Netzer "Net output, or national income originating, is perhaps the most satisfactory readily available statistic with which to measure neutrality" [12, p. 26]. National income (NI) is an especially appropriate basis for comparison because it reflects earnings by the factors of production. Indirect business taxes--and the property tax is treated as such in the national income accounts--are in addition to the earnings of the factor suppliers. National income originating in farming (NIF) was 8.0 percent of all NI in 1932 and 3.2 percent in 1974 (Table 1). During the interim the high was 10.0 percent in 1946 and the low was 2.5 percent in 1968 and 1971--but the long term trend was one of declining relative importance of the farm sector as a source of NI.

Total property taxes were 3.4 percent of NI in 1902, increased to 10.6 percent during the Great Depression (1932) decreased to a low of 2.5 percent during 1944, then exhibited minor fluctuations, and amounted to 4.2 percent in 1974 (Table 1).3/ Total farm property taxes as a percentage of NIF decreased from 17.4 percent in 1932 to 7.8 percent in 1974 with intervening fluctuations between 3.1 percent (1946) and 12.0 percent (1971). Total nonfarm property taxes as a percent of national income originating in the nonfarm sector (NINF) declined from 10.0 percent in 1932 to a low of 2.5 percent in 1944 and ended the period in 1974 at 4.1 percent. Thus, the importance of property taxes as a percentage of NI (including NINF) has fluctuated through time with no strong trend being apparent. However, for the agricultural sector, property taxes as a percentage of NIF tend to increase during periods of weaker demand and lower farm prices.

When the analysis is limited to those years for which all data series are available, the pattern is more easily discerned. Data are available for all series since 1932 (Table 1). These show that for the 1932-74 period farm property taxes accounted for 8.1 percent of all property taxes, but that NIF was only 4.1 percent of total NI. During the same time span property taxes took 7.9 percent of NIF and only 3.8 percent of the NINF. The changes throughout the 1932-74 period also are of interest. In 1932 the ratio of the percentage of property taxes paid by farmers divided by the percentage of national income originating in farming

---

3/ National income statistics have been officially reported regularly for the years since 1929, but data for earlier years have been estimated unofficially [22].

was 1.64. It was 1.88 in 1974 but never went below 1.12 (1946) or above 3.04 (1968) during the 1932-74 span. Similar ratios that show the percentage which property taxes are of NIF divided by the percentage property taxes are of NINF also are of interest. This ratio was 1.74 in 1932 and 1.90 in 1974, but ranged from a low of 1.11 in 1946 to a high of 3.16 in 1968.

This analysis leads one to conclude that the agricultural sector has been paying proportionately more of the Nation's property tax bill than has the nonagricultural sector when taxes paid are compared with the sector's share of NI.4/ A number of explanations have been advanced in the literature regarding the reasons for the non-neutrality of taxes. Netzer states that the property tax is not neutral among industries for "...whatever the reason: whether it is related to differences in capital-output ratios, in the profitability of investment reached by the property tax (which is not quite the same thing), in geographic location, or in property tax coverage and administration" [12, p. 26]. There are other factors which can play a role as well, and despite Netzer's pessimism, it is of interest to pursue three of them at this point--tax shifting, regressivity, and relative capital intensity.

Tax Shifting--An important consideration for the agricultural sector is the potential degree of property tax shifting to consumers. If market power enables firms or an industry to pass the property tax to consumers, the situation becomes analogous to the traditional excise tax perspective of property tax incidence and the tax will be regarded as regressive. But, if the tax cannot be passed forward and must be absorbed by owners of capital, the situation is like the revised incidence view with a more progressive impact by income class [16, pp. 35-36]. Thus, the important question is how much of the agricultural property tax can be shifted.

One finds a variety of answers in the literature. For example, the most extreme view is a 1972 study by the New Jersey Tax Policy Committee cited by the Advisory Commission on Intergovernmental Relations (ACIR). This study assumed that all property taxes on businesses and farms were shifted forward to consumers [3, pp. 170-171]. Netzer, in his review of the property tax, states that "The conventional wisdom surely overstates the degree of forward shifting" [13, p. 527]. He notes that, to the extent that there is less forward shifting, more of the burden falls on owners of land and capital [13, p. 527]. Such changes in shifting assumptions will lead to generally more progressive results. Netzer believes that half or less of business, nonresidential, reproducible capital

---

4/ This is true despite the recognition that any comparison of taxes and incomes between the agricultural and nonagricultural sectors is likely to be biased to some degree, because unrealized capital gains are apt to be somewhat larger in the agricultural sector than in the remainder of the economy.

(including farm) property taxes are shifted forward [13, p. 534]. Musgrave notes that it is an issue of market power and that in his view less than one-third of the property tax on nonhousing property is shifted [9, p. 225]. The Musgraves note that farms and household personal property are unlikely to offer much option for administered pricing and forward shifting of property taxes to consumers [11, p. 418]. Thus, one is led to conclude that, because of its many small firms operating in a competitive market, the agricultural sector possesses limited opportunity for forward shifting to consumers. The revised incidence theory, therefore, may have more potential importance to this sector than to the much of the remainder of the economy--especially on the issues of regressivity and overall burden.5/

Regressivity--Available data on the personal income of the farm population extend back to 1934. They show that the personal income of the farm population has been typically below that of the nonfarm population [23]. Thus, other factors being equal, the farm population would pay proportionately more of the property tax if one viewed the tax as being regressive. This was the case according to traditional incidence theory.

5/ The entire subject of property tax shifting by the agricultural sector is a somewhat confused one. Netzer earlier followed traditional logic in assuming that a property tax on the land would be borne by landowners. But he then assumed that a general tax on improvements and personal property could be expected to be shifted forward to consumers when imposed on a competitive industry "... confronting relatively inelastic demand like agriculture" [12, p. 250]. This stress on the strength of inelastic demand to draw forth the agricultural property tax burden is interesting in view of the futile hope of an earlier generation of agricultural economists that inelastic demand coupled with population growth would ultimately "solve" the farm problem.

Netzer also earlier cited studies on both sides of the shifting issue. He noted that Musgrave and Daicoff (1958) essentially followed the demand pull reasoning and assumed that three-fourths of the property tax on agriculture was shifted forward to consumers and one-fourth was borne by recipients of income. But he found that Brownlee (1960) assumed that such taxes were borne entirely by farmers. A Wisconsin study (1959), he observed, assigned 75 percent of the farmland tax to the owner and 25 percent to the consumer, and divided the taxes on farm structures and personalty evenly between owners and consumers [12, pp. 247-251].

Based on these theoretical underpinnings, the idea that the property tax is regressive has been widely accepted throughout the twentieth century [2, p. 2]. The literature which takes this viewpoint for granted is extensive [1, p. 212]. Gaffney maintains that today's current concept of regressivity owes much to the data, assumptions, and approach involved in the work of Musgrave, Carroll, Cook, and Frane [10] which was published in 1951 [8, p. 411]. Within the past ten years four important empirical studies--Netzer (1966), the Musgraves (1973), ACIR (1973), and Pechman and Okner (1974)--have shown the property tax to be regressive [3, 11, 12, 16]. This line of reasoning would lead one to conclude that the agricultural sector probably pays more than its share of the property tax bill, at least in a significant part, due to the regressive nature of the tax.

But how would the agricultural sector fare comparatively under the revisionist theory of property tax incidence? This view holds that the tax is ultimately borne by the owners of capital. Because capital ownership is largely concentrated in the higher-income brackets, any reduction in the rate of return to capital caused by the imposition of a property tax must result in a progressive distribution of the tax burden [8]. To answer the question of how the agricultural sector fares relative to the rest of the economy, one must examine the relative distribution of capital ownership between the agricultural and nonagricultural sectors by income level. Available evidence suggests that there is a much higher ratio of net worth to income in the agricultural sector (Table 2). Moreover, internal agricultural sector net worth is skewed much more toward the lower end of the income scale than is the case of net worth for the U.S. economy as a whole. These facts would tend to negate a substantial part of the progressivity of the property tax for the agricultural sector under the new theoretical view of property tax incidence. It thus follows that under the new approach the agricultural sector could still end up paying proportionately more of the tax due to comparatively more net worth at the lower income levels.

However, it is interesting to note in passing that the empirical evidence regarding farm property tax regressiveness is somewhat inconclusive. For example, Pasour's recent study of the capitalization of farm property taxes for the United States using 1969 data found little evidence of farm real estate tax regressiveness [15, pp. 546-547]. For a tax decrease of $0.20 per $100 value under average circumstances, he found that the amount of the tax capitalized into higher property values as a percentage of income for farm sales categories was as follows: 1.19 ($2,500-$4,999), 1.21 ($5,000-$9,999), 1.30 ($10,000-$19,999), 1.19 ($20,000-$39,999), and 1.15 ($40,000 and over). Pasour lists a number of caveats regarding these findings including the possibility of considerable variation in the burden of property taxes at any given level due to differing capital intensities.

Table 2
Ratio of net worth to income, agricultural households, 1966, and U.S. households, 1962

Agricultural households, 1966[a]		U.S. households, 1962	
Income bracket	Ratio of net worth to income	Income bracket	Ratio of net worth to income
$0 - 2,499	29.14	$0 - 2,999	4.8
2,500 - 4,999	10.70	3,000 - 4,999	2.5
5,000 - 9,999	6.87	5,000 - 7,499	2.1
10,000 - 14,999	5.40	7,500 - 9,999	2.2
15,000 - 24,999	7.55	10,000 - 14,999	2.3
25,000 or more	8.00	15,000 - 24,999	3.5
		25,000 - 49,999	8.4
		50,000 - 99,999	10.7
		100,000 and over	10.7
		All incomes	3.3

a/ Data includes off-farm income and off-farm wealth in net worth statements.

Sources: [3, p. 32; 6, p. 39]

Also critical to any analysis of tax regressiveness is the income concept employed. For instance, the longer the time period over which income is measured the less likely it is to yield a false picture of the household economic situation. Good and bad years tend to even out thus giving credence to the use of a permanent income concept in studying tax incidence by income class. Aaron notes that the use of annual income makes the distribution of tax burdens more progressive [2, p. 28]. He feels that the evidence suggests the family consumption-income ratios by income class do not vary much if a normal income concept is used. Thus, if the traditional view that property taxes are borne in proportion to consumption is followed such taxes may be proportional to normal income [2, p. 30]. Recent work by Paglin, which corrects for intrafamily income over the life cycle, shows that the typical Lorenz curve (based on the concepts of perfectly flat family age-income profiles and annual income) yields a Gini ratio which overstates the actual degree of inter-family income variation by 50 percent [14]. Thus, further research is

needed to resolve the question of property tax regressivity for taxpayers in general and farmers in particular.6/

Relative Capital Intensity--Perhaps a more plausible reason why the agricultural sector pays a disproportionate share of the property tax simply may be due to its relatively greater capital intensity. Indeed, the data in Table 2 hint at this, showing that a much greater level of net worth is required in the sector to provide the same level of income as the rest of the economy. USDA data show that in 1975 average investment per farm worker was $98,540; per production worker in manufacturing enterprises, $55,252.7/ (Average investment per employee--both production and management--in manufacturing enterprises was $40,277 in 1975.) Other estimates based on a cost rather than a current value basis suggest that investment per worker in agriculture may be only about 10 percent higher than in manufacturing, not 50 to 100 percent [18]. But this may not be relevant in a tax context because property taxes must be paid on the basis of value rather than cost. Land is the most important input in the agricultural sector and its value has been appreciating rapidly in recent years, thus helping cause the two series (agriculture and manufacturing) to diverge more than was the case in earlier years. Thus, in the final analysis, the relatively higher capital intensity of the agriculture sector appears to be a cause of its paying a disproportionate share of the property tax.

6/
ACIR recently called the property tax regressivity issue "... something of a red herring" [4, p. 16]. They argue that there would be a need for low-income property tax relief even if the tax were progressive "... if the absolute level of the tax worked a hardship on some persons" [4, p. 16]. A reasonable analogy in their view is the need for exemptions to protect subsistence income under a progressive income tax system.

7/
This is based on the average number of total farm workers, including both self-employed and hired, and average number of production workers for manufacturing. Agricultural assets exclude those not used in production and are valued on a current basis, i.e., an inventory of physical units is multiplied by the current market value per unit. Assets for manufacturing enterprises are compiled from financial statements of manufacturing firms and are generally values based on cost less capital consumption. For more detail see [18].

Conclusions

The traditional view of property tax incidence was that landowners bore the tax on land, but that the tax on buildings, improvements, and business was borne in large part by consumers in proportion to their consumption patterns. Thus, the property tax was thought of as an excise tax and it was considered to be regressive because increases in income do not lead to proportionate increases in consumption. Moreover, historically the view has been that the impact of the property tax on the agricultural sector has been quite regressive.

The revised incidence theory says that the property tax leads to a lower overall rate of return on investment with the tax ultimately being borne by the owners of capital. Under this theory funds are thought to move to other lower tax industries where the marginal rate of return is higher, until in the long-run the marginal rate of return in all sectors becomes the same. The general result is that, under the new theory with owners of capital bearing much of the burden, the property tax is less regressive than was suspected with the old partial equilibrium model. Thus, the horizontal equity between the agricultural and nonagricultural sectors may be somewhat better than under the traditional view.

However, agriculture's historical lack of market power and greater capital intensity also has an impact on the amount of taxes it pays, and how the agricultural sector fares in comparison to the nonagricultural sector depends upon the relative distribution of capital ownership between the sectors by income level. Unfortunately, available evidence suggests that there is a much higher ratio of net worth to income in the agricultural sector. Moreover, internal agricultural sector net worth is skewed much more toward the lower end of the income scale than is true for the economy as a whole. These facts tend to negate a substantial part of the progressivity of the property tax for this sector under the new theoretical view. It follows that under the new approach the agricultural sector could still end up paying proportionately more of the tax due to the concentration of net worth at the lower income levels. More current evidence on income-net worth relationships is needed, but it appears that the agricultural sector faces a horizontal inequity concerning the property tax no matter which set of assumptions is used.

Unfortunately, the basic historical factors that have been influencing the farm property tax do not appear likely to change significantly in the foreseeable future. Thus, perhaps the most important implication is that the long-run horizontal inequity of the property tax borne by the agricultural sector is likely to continue.

References

1. Aaron, Henry J. "A New View of Property Tax Incidence," American Economic Review, Vol. 64, No. 2, May 1974, pp. 212-221.

2. _____. Who Pays the Property Tax? A New View, Washington, The Brookings Institution, 1975.

3. Advisory Commission on Intergovernmental Relations, Financing Schools and Property Tax Relief--A State Responsibility, A-40, Washington, D.C., January 1973.

4. Advisory Commission on Intergovernmental Relations, Property Tax Circuit-Breakers: Current Status and Policy Issues, M-87, Washington, D.C., February 1975.

5. Bailey, Mary L. Farm Real Estate Taxes: Recent Trends and Developments, RET-15, U.S. Department of Agriculture, Economic Research Service, March 1976.

6. Carlin, Thomas A. and Edward I. Reinsel. "Combining Income and Wealth: An Analysis of Farm Family 'Well-Being,'" American Journal of Agricultural Economics, Vol. 55, No. 1, February 1973, pp. 38-44.

7. Commerce Clearing House, Inc. State Tax Guide, Washington, 1975.

8. Mason, Gaffney M. "The Property Tax Is a Progressive Tax," Proceedings of the Sixty-Fourth Annual Conference on Taxation, National Tax Association, 1971, pp. 409-426.

9. Musgrave, Richard A. "Is a Property Tax on Housing Regressive?" American Economic Review, Vol. 64, No. 2, May 1974, pp. 222-229.

10. _____ and J. J. Carroll, L. D. Cook, and L. Frane. "Distribution of Tax Payments by Income Groups: A Case Study for 1948," National Tax Journal, Vol. IV, No. 1, March 1951, pp. 1-53.

11. _____ and Peggy B. Musgrave. Public Finance in Theory and Practice, New York, McGraw-Hill Book Co., 1973.

12. Netzer, Dick. Economics of the Property Tax, Washington, The Brookings Institution, 1966.

13. _____. "The Incidence of the Property Tax Revisited," National Tax Journal, Vol. 26, No. 4, Dec. 1973, pp. 515-535.

14. Paglin, Morton. "The Measurement and Trend of Inequality: A Basic Revision," American Economic Review, Vol. 65, No. 4, Sept. 1975, pp. 598-609.

15. Pasour, E. C., Jr. "The Capitalization of Real Property Taxes Levied on Farm Real Estate," American Journal of Agricultural Economics, Vol. 57, No. 4, Nov. 1975, pp. 540-548.

16. Pechman, Joseph A. and Benjamin A. Okner. Who Bears the Tax Burden?, Washington, The Brookings Institution, 1974.

17. Sibold Ann Gordon. Taxes Levied on Farm Personal Property, 1960-72, Ag. Econ. Rept. No. 321, U.S. Department of Agriculture, Economic Research Service, Jan. 1976.

18. Smith, Allen G. "Comparative Investment per Worker in Agriculture and Manufacturing Sectors of the Economy," American Journal of Agricultural Economics, Vol. 53, No. 1, Feb. 1971, pp. 101-102.

19. U.S. Bureau of the Census. Census of Governments, 1972, Historical Statistics on Governmental Finances and Employment, Vol. 6, 1962, 1967, and 1972 issues.

20. _____. Government Finances in 1973-74, Series GF74-No. 5, Nov. 1975.

21. _____. Government Finances in the United States, 1951, Series G-GF51-No. 2, Aug. 1952.

22. _____. Historical Statistics of the United States: Colonial Times to 1957, 1960.

23. U.S. Department of Agriculture, Economic Research Service. Farm Income Statistics, Stat. Bul. No. 558, July 1976.

24. U.S. Department of Commerce. Survey of Current Business, various issues.