

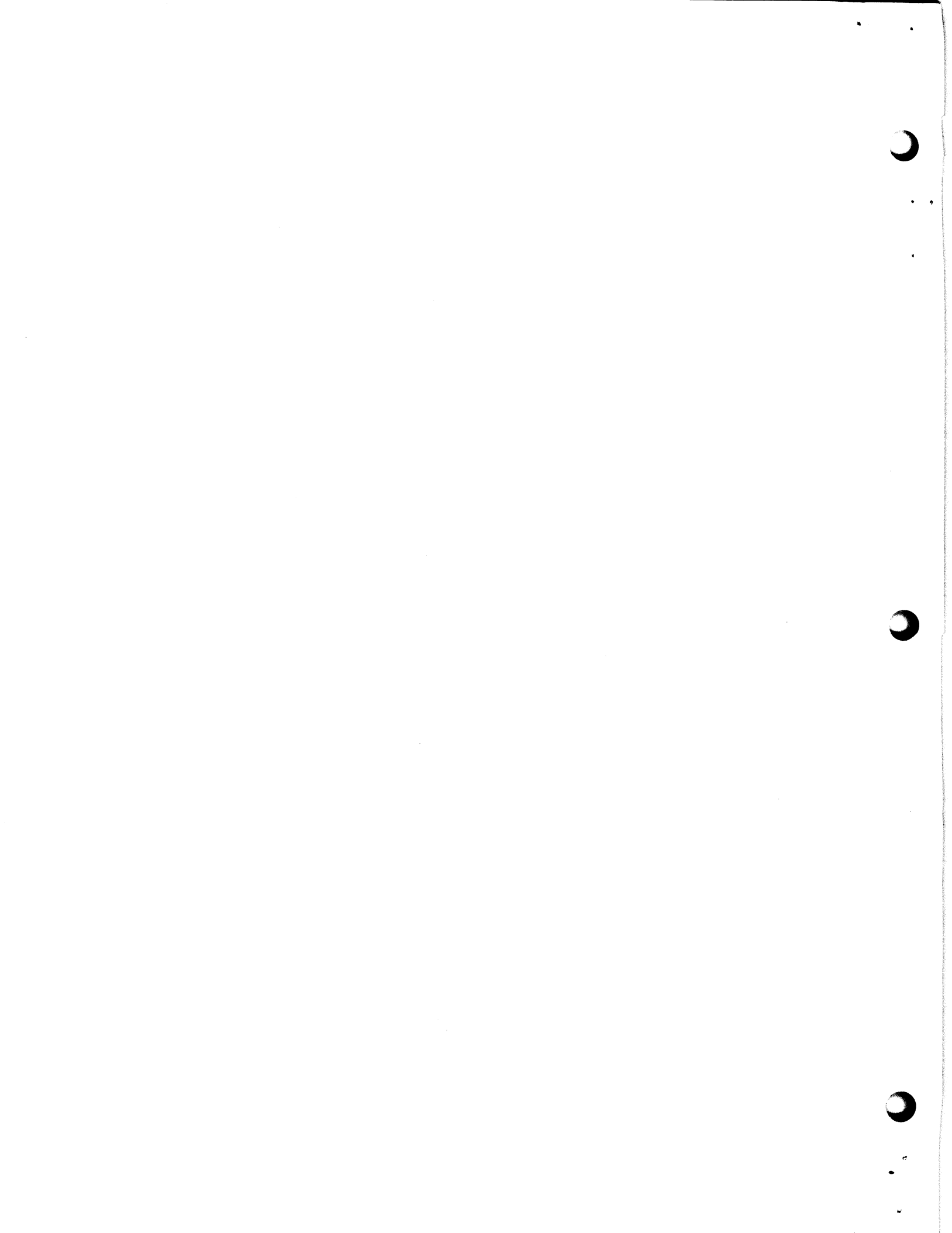
ALTERNATIVE HIGHWAY FINANCING POLICIES:  
IMPLICATIONS FOR OHIO AGRICULTURE

By

Michael J. Pesch and Donald W. Larson

An interim report prepared for the Ohio Department of Agriculture on a contract with the Department of Agricultural Economics and Rural Sociology at The Ohio State University and the Ohio Agricultural Research and Development Center.

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This is the fifth interim report on a series of studies analyzing transportation services for Ohio Agriculture. The authors wish to thank Karlene Robison, Kathy Weaver and Janice Christensen for their most valuable assistance in the preparation of this report.

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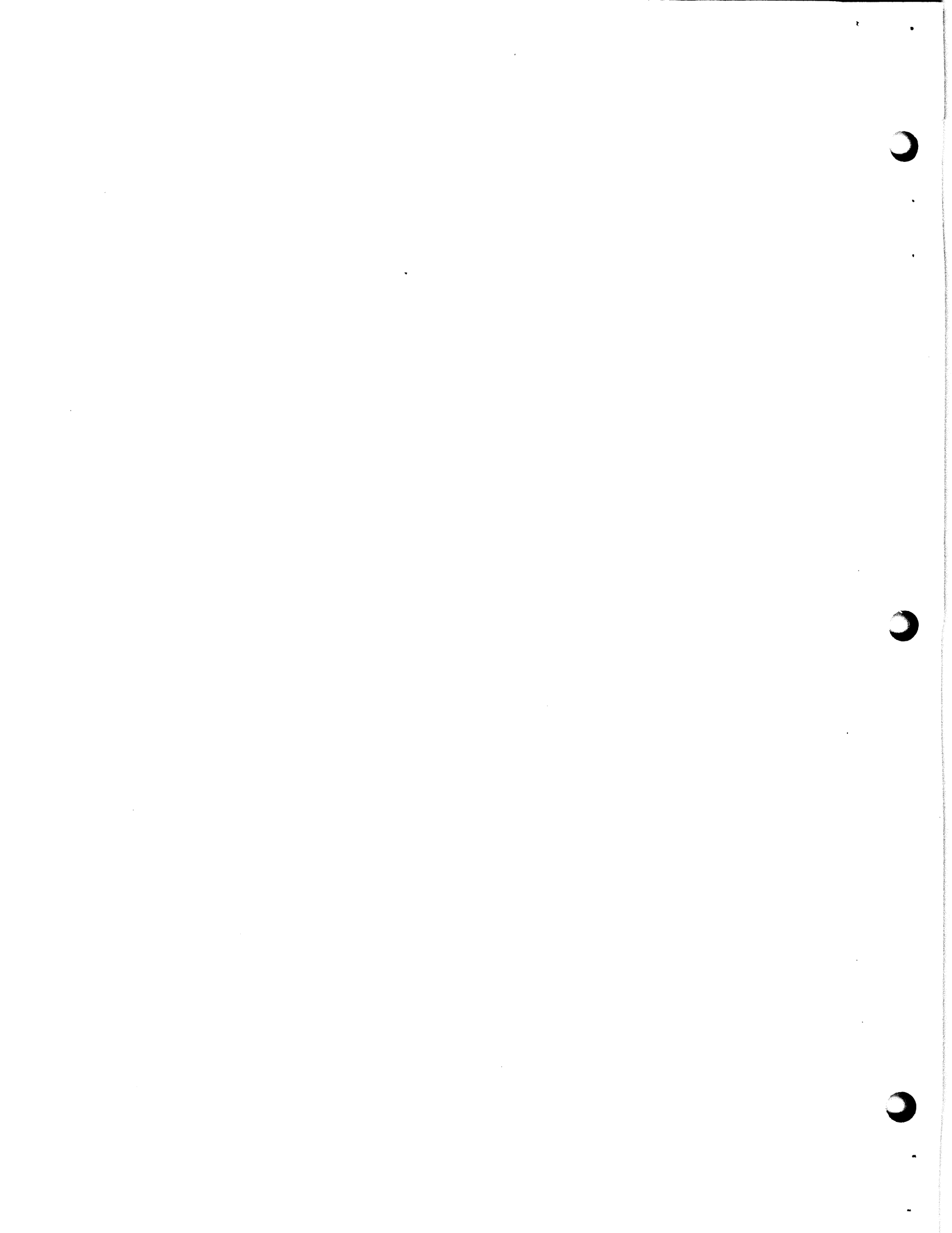
## Executive Summary

This report looks at alternative policies for increasing Ohio highway revenues. Vehicle registration fees in Ohio were doubled in 1981 and the state fuel tax was substantially increased by the Ohio legislature last summer. If future increases of highway funding sources are needed, the axle-mile tax, which has not been increased since 1953, is a prime target.

Increasing the axle-mile tax is a controversial subject. Questions abound over whether or not the trucks which must pay the axle-mile tax should pay a proportionately greater share of total highway costs. The Ohio Highway Cost Allocation Study which is being conducted by the Ohio Departments of Transportation and Taxation hopes to resolve the cost allocation question.

Increases in either the axle-mile tax or vehicle registration fees are not expected to affect significantly the per-bushel price of grain. Doubling the axle-mile tax would increase transportation costs by approximately 0.23 cents per bushel for a 50-mile grain transfer with no commodities backhauled. For the same 50-mile haul, a 100 percent increase in truck registration fees would increase transportation costs by approximately 0.10 cents per bushel.

The specter of more inflation and higher oil prices in future years portend additional highway funding requirements by ODOT and Ohio counties. It is critical that agriculture, the trucking industry, public officials, and all other groups and individuals who will be affected by new highway revenue policy initiatives remain informed and actively involved in this developing debate.



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Introduction

This report is part of a series of analyses which looks at problems and issues in transportation and attempts to determine their potential implications for Ohio agriculture. The present report discusses policy issues relating to the revenue structure for the Ohio highway system. The first part considers the growing demand for transportation services. The second part will present the Ohio highway revenue structure as it exists today. Following this discussion is a detailed review of the Ohio highway cost allocation study currently being conducted by the Ohio Departments of Transportation (ODOT) and Taxation (DOT). Finally, alternative highway revenue raising measures will be analyzed and discussed as they relate directly or indirectly to agriculture.

Table 1 projects Ohio surplus grain flows by mode of transportation for the years 1985, 1990, and 2000. During the period from 1977 to 2000 grain surpluses<sup>1/</sup> are expected to increase by a little more than 50 percent. Although the proportions of sur-

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<sup>1/</sup>A "grain surplus (deficit)" is defined as total bushels of corn, soybeans, wheat, and oats produced in Ohio plus total bushels of grain received from out-of-state, less total bushels consumed in-state for any given year.

\* Technical Assistant and Associate Professor, respectively, Department of Agricultural Economics and Rural Sociology, The Ohio State University, and the Ohio Agricultural Research and Development Center.

Table 1: Estimates of Quantities of Ohio Grain Requiring Transportation Services in 1985, 1990 and 2000

Mode of Shipment	1977	1985	1990	2000
	- - - - 000 bu. - - - -			
Truck	18,821	20,915	23,706	28,542
Rail	177,117	196,822	223,095	268,601
Water	140,147	155,739	176,529	212,536
Total	336,085	373,476	423,330	509,679

Percent Increase (All Grains)

1977-1985	1985-1990	1977-1990	1990-2000	1977-2000
11.1	13.3	26.0	20.4	51.6

Source: Hennen et al. Ohio Grain Flows by Mode of Transportation and Type of Grain Farms for 1970 and 1977: A Comparison, and Baldwin and Larson, Projected Production of Grain and Oilseeds and Consumption by Livestock in Ohio for 1985, 1990, and 2000.

Table 2: Gallons of Fuel Taxed in Ohio for Fiscal Years 1978-1981

Year	Total Gallons of Fuel Taxed	Total Gallons of Gasoline Taxed	Total Gallons of Special fuel Taxed (98% Diesel Fuel)
1978	5,951,745,323	5,284,830,496	666,914,827
1979	6,100,430,459	5,365,114,252	735,316,207
1980	5,729,962,076	4,999,104,871	730,857,205
1981	5,455,576,204	4,723,145,064	732,431,141

Source: Ohio Department of Transportation, Bureau of Research and taxation.



plus grain carried by truck, rail, and barge in the year 2000 may change from those in 1977, each mode currently provides important services to Ohio agriculture and undoubtedly will continue to do so in future years.

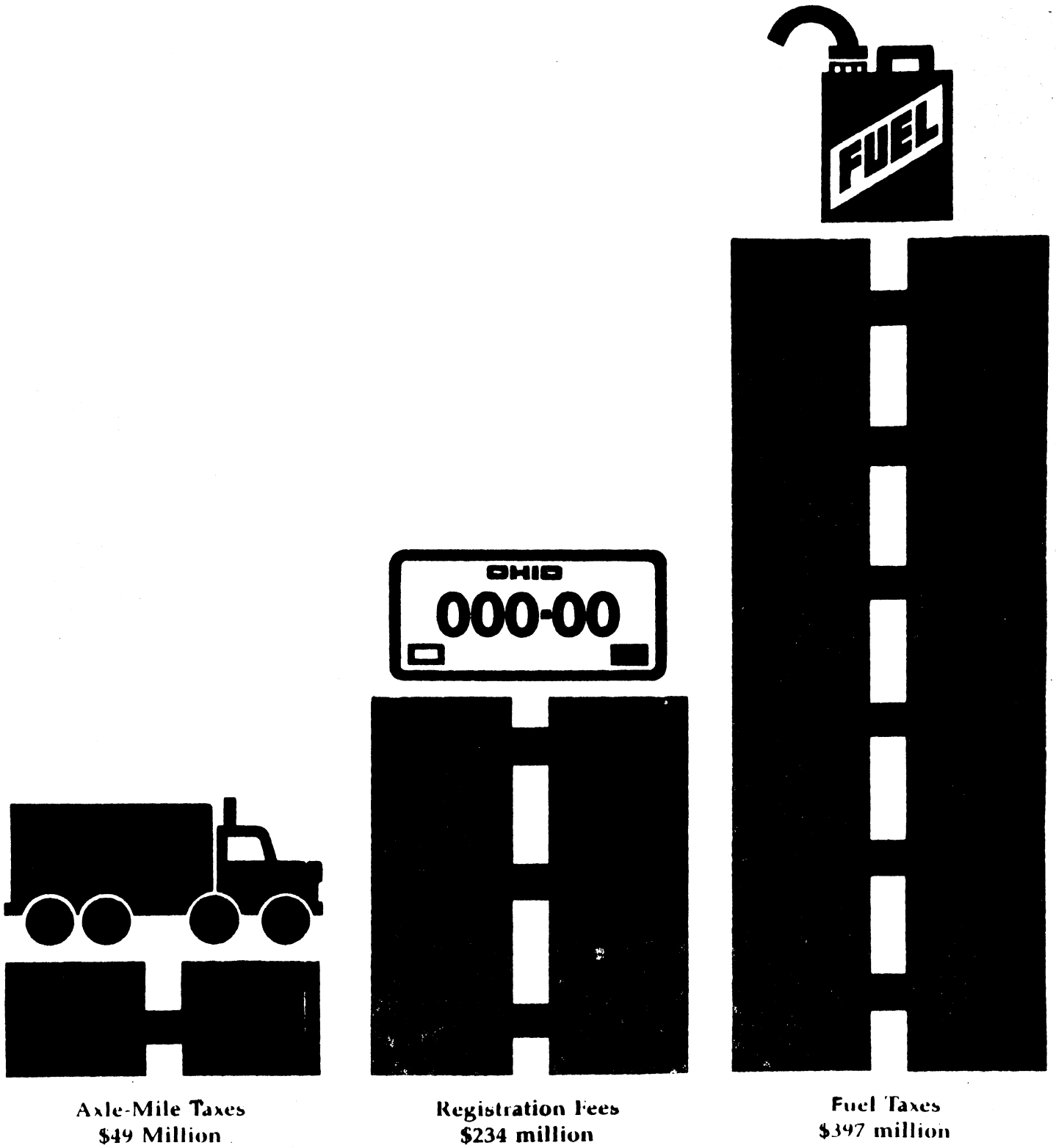
Table 1 indicates a growing demand for transportation services by Ohio agriculture. At the same time, in recent years the organizations which provide transportation services have had to conduct business in an environment fraught with inflation, deregulation, soaring energy prices, and increased taxes and user fees.

#### The Present Ohio Highway Tax Structure

Figure 1 gives the highway tax structure for Ohio in fiscal year 1980. This illustration is not the best reflection of the 1982 highway revenue structure because fuel taxes increased by 3.3 cents per gallon on July 1, 1981 and by another 1.4 cents on March 1, 1982. Today Ohio per-gallon fuel taxes are 67 percent higher than they were in 1980. This does not mean that total fuel tax revenues will increase by the same percentage as the per-gallon increase. Since 1979 total gallons of motor fuel consumed in Ohio has been declining at about a 5.5 percent rate (Table 2). Altered driving habits and more fuel-efficient vehicles have contributed to this overall decline in fuel consumption.

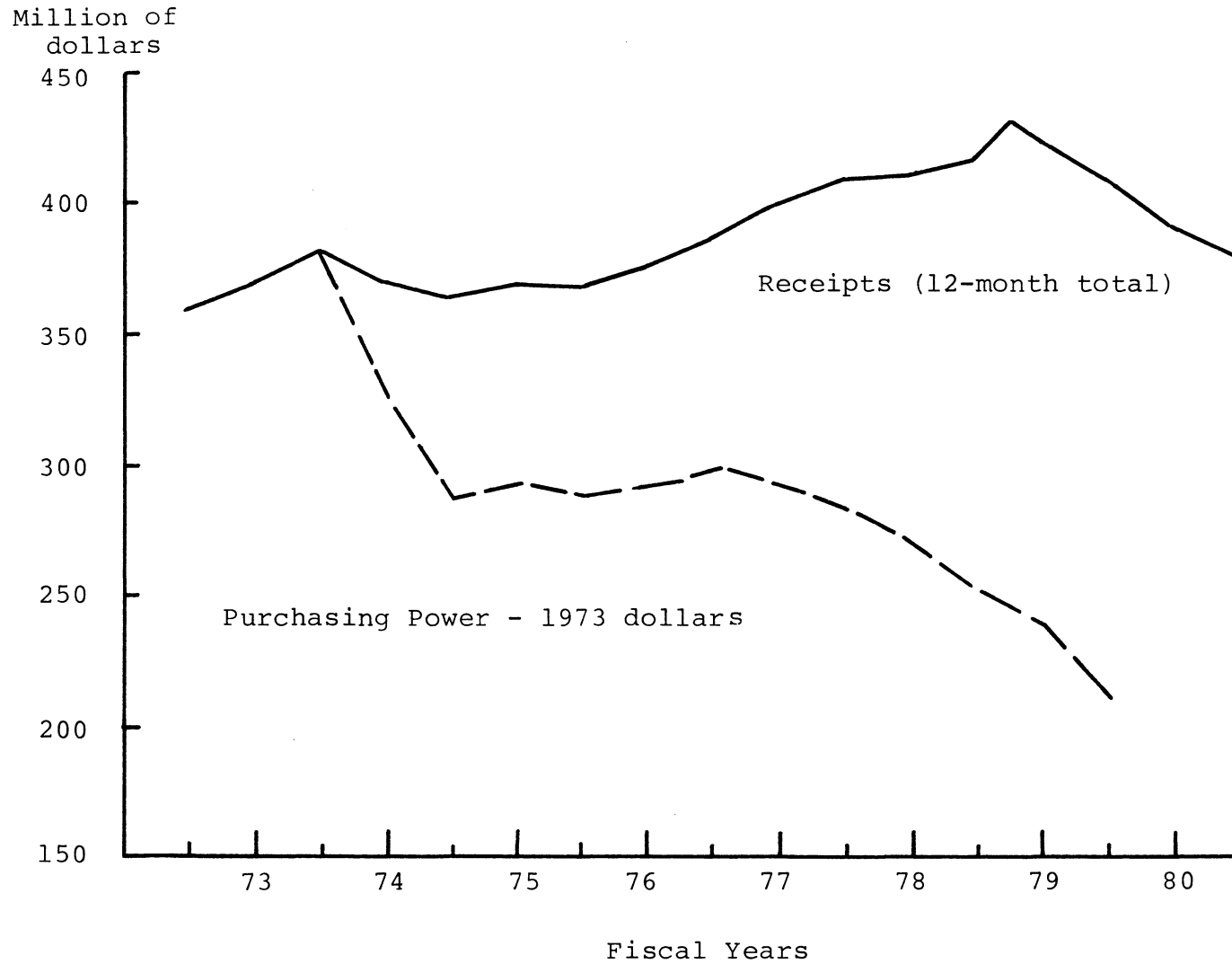
There are few Ohioians who doubt the need for the recent fuel tax increases. Since 1973 the purchasing power of Ohio's highway revenues has been eroded by inflation and declining fuel consumption (Figure 2). The state highway system, for which

Figure 1: Ohio Tax Receipts by Source of Funds for Fiscal Year, 1980



Source: Ohio Department of Taxation and Ohio Bureau of Motor Vehicles

Figure 2: Current and Deflated Value of Ohio Motor Fuel Tax Receipts, 1973-80



Source: Ohio Department of Transportation

ODOT is responsible, receives more than 80 percent of its funding from state fuel tax revenues. Many important state highway construction and maintenance programs which have been deferred for lack of money will now be resurrected as a result of increased fuel tax revenues.

At the county level the majority of revenue support for Ohio road and bridge programs comes from vehicle registration fees. In 1981 the counties received a shot in the arm when vehicle registration fees were doubled. Previous to 1981, registration fees had not been increased for 30 years. Ohio County engineers report that while the increase helped to ease their budget problems, it was long overdue and additional funds still are needed to keep pace with road and bridge deterioration.

The third major source of Ohio highway revenue is the Ohio axle-mile tax which is levied against trucks with 3 or more axles. The tax is figured on a per-mile basis according to the type of truck and the number of axles. Table 3 gives the breakdown of the axle-mile tax. The tax is "self-assessed" which means that each truck carrier must make quarterly payments to ODOT, based on truck classification and the number of miles travelled in Ohio during the previous 3 months.

The axle-mile tax, first assessed in 1953 as a measure to retire state highway bonds, has not been increased during its entire 28 year existence. The major controversy concerning the Ohio highway revenue structure centers around whether the current structure proximates the actual costs generated by different classes of users. Many groups and individuals question

whether trucks should pay a larger proportion of highway costs. They protest that while registration fees and fuel taxes have been increased drastically, the axle-mile tax remains at the same level as in 1953. Meanwhile, the Ohio trucking industry responds that trucks comprise 15.3 percent of total Ohio highway vehicles but pay 43.6 percent of the total highway user taxes in the state (1979 figures). Ohio truck tax payments make up 56.7 percent of all registration fees, 100 percent of the Ohio Axle-Mile tax, and 33.5 percent of total fuel taxes. To help answer the question of equity in the highway revenue structure the Ohio Legislature called for a study.

Table 3: Axle-Mile Tax Assessed on Trucks Travelling in Ohio

	Single Unit 3 or More Axles	Tractor- Trailer 3 Axles	Tractor- Trailer 4 Axles	Tractor- Trailer 5 or more Axles	Commercial Car*
Cents Per Mile	0.5	1.0	1.5	2.0	2.5

\* A "commerical car" is defined as either a full-size truck with a trailer or a tractor-2 trailer combination.

Source: Ohio Department of Taxation

The Ohio Cost Allocation Study

House Bill 102, which became law on July 1, 1981, requires that a highway cost allocation study be completed by the Ohio Department of Transportation (ODOT) and the Ohio Department of Taxation (DOT). According to an interim report completed by ODOT in December, 1981, H.B. 102 instructs ODOT to "determine the relationship between the highway activities of the design, construction, maintenance, resurfacing, rehabilitation and reconstruction of highways and the various classes of vehicles on Ohio highways with their differing rates of usage." ODOT is further instructed to determine the costs associated with the above list of highway activities, including environmental costs, and identify those costs which can be directly attributed to specific vehicle classifications. The interim report states that the Department of Taxation will "identify the revenues generated by the various vehicle classes and then compare them to the costs that have been attributed to each vehicle class as a result of the Transportation Department study." If the costs which have been attributed to each vehicle class are not matched closely by the tax revenues paid by each vehicle class, DOT will develop alternative revenue-raising proposals.

Under H.B. 102 the Ohio highway cost allocation study is to be completed by July 1, 1982. However, a delay in the completion of a federal highway cost study, upon which the Ohio study will be based, will cause a delay in the completion of the final draft of the DOT report.

The federal highway cost allocation study, presently being conducted by the U.S. Department of Transportation, utilizes two distinct cost assignment methodologies. Major emphasis is placed upon the "primary" method which develops separate assignment methodologies for width-related pavement costs, width-related bridge costs, width-related grading and drainage costs, original pavement costs, non-structural pavement repairs, major pavement reconstruction, new bridge costs, replacement bridge cost, bridge repair costs and traffic (capacity) related costs. The primary method is based on the premise that most costs can be attributed to the general levels and characteristics of traffic.

The second major cost assignment methodology applied in the federal study is referred to as the "incremental" approach. This procedure first determines the cost of building a "basic highway structure" which can provide good service exclusively for passenger cars and pickup trucks. Vehicles with axle loads of between 6,000 - 9,000 pounds are then added to the passenger car and pickup truck traffic. The incremental cost of redesigning the highway structure in order to accommodate the heavier vehicles becomes the portion of highway costs which can be attributed directly to this heavier vehicle classification. A total of 6 cost increments are calculated and attributed to heavier axle weight vehicle classifications. Finally, the actual cost of the highway structure is calculated, with the last incremental cost attributed to the heaviest axle weight vehicle

classification. The incremental approach is being used in the federal study to assign costs related to new highway construction whereas the primary method is used with respect to pavement replacement costs.

The Ohio highway cost allocation study will also consider the incremental and primary approaches used by the University of Maryland for a study done for the Maryland Department of Transportation. The Maryland study is different from the federal study in terms of the assumptions and design decision criteria built into the methodologies. ODOT plans to use the "best" features of both the Maryland and federal studies. In its interim report ODOT states that the selection of attribution methodology is crucial to the final results of the study. This is because some costs cannot be attributed to specific vehicle classes. These non-attributable costs are called "common costs" and historically have been assigned to all vehicles according to vehicle-miles-travelled (VMT), regardless of vehicle size and weight classification. The proportion of highway costs that are considered common varies according to whether the incremental method or the primary method is used. Under the incremental approach most costs are attributable, whereas the primary approach considers a larger portion of costs as common.

The task of the ODOT study is to "produce an estimate of the proportionate share of all costs which can be assigned to each vehicle class." DOT will use these estimates to compare revenue generated by each vehicle class with the costs incurred by that same class. If any sharp inequities become evident as



a result of this comparison, DOT will offer alternative tax schemes designed to rectify these problems.

The trucking industry finds fault with the primary method being used in the federal study. According to John L. Reith, Director of Interstate Cooperation at the American Trucking Associations, Inc., the primary method is more accurately called the "consumption" approach, whereby vehicles "consume" highway structures. Reith points out that the consumption approach is relatively new in comparison to the incremental approach and is based solely upon federal studies which measured relative road damage done by various classifications of equivalent axle loads. Reith states that other effects on highway wear such as weather and age were ignored in the equivalent axle load studies and routine maintenance work which would be done on any road structure was not done on the highways used in the studies. The trucking official also claims that study results were obtained from road sections which were underdesigned for use by heavier axle weight vehicles.

The trucking industry complains that the primary or consumption approach is too subjective because it generates more common costs than does the incremental approach. If these common costs are allocated on a basis of equivalent axle loads, trucking officials say their industry would be forced to pay an unfair share of total highway costs. The ATA and the Ohio Trucking Association accuse the railroad industry of lobbying Congress to accept the "new (consumption) method which has no

clear theoretical base or defined measure of equity."<sup>2/</sup> The argument advanced by the trucking organizations charges the railroad industry with attempting to increase trucking costs in order to improve their competitive position.

Robert A. Manning, Statehouse Lobbyist for the Ohio Railroad Association, welcomes the Ohio highway cost allocation study and points to past federal studies which show that heavy vehicles (those weighing over 50,000 pounds) are underpaying for highway use privileges. Manning also cites a study done by the Oregon Department of Transportation which concluded that road damage is 19 percent weather-related, 1 percent passenger car-related, and 80 percent truck-related.

#### Alternative Highway Revenue Raising Measures

The present report will not attempt to answer the equity question which is currently being addressed by the Ohio highway cost allocation study. Whether or not different vehicle classes are paying their "fair share" of highway costs, new revenue raising measures for Ohio road and bridge programs may be needed in the near future. The two major sources of highway funds, registration fees and the fuel tax, are not designed to compensate for future increases in the costs of highway construction and maintenance. Revenues from registration fees are fixed according to the number of vehicles owned and operated in Ohio. Fuel tax revenues are tied to fuel consumption. If fuel consumption continues to decrease (Table 2) and the number of registered

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<sup>2/</sup>Lill, Richard A., "Review of Interim Report on Ohio Cost Allocation Study," American Trucking Associations, Inc., February, 12, 1982.

vehicles remains relatively steady, the Ohio legislature may soon have to take further steps to insure adequate funds for highway programs in the state. The remainder of this report will evaluate the political and economic implications of alternative proposals to increase Ohio highway revenues.

#### Fuel Taxes

The passages of House Bill 102 in the summer of 1981 established until March 1984 the rate at which the Ohio fuel tax would be assessed. On July 1, 1981 the fuel tax increased from 7 cents per gallon to 10.3 cents per gallon. On March 1, 1982 the fuel tax increased an additional 1.4 cents per gallon to a total of 11.7 cents per gallon. This current tax rate will remain effective until March 1, 1983 when the tax will increase to 12 cents per gallon. H.B. 102 states that the 12 cents per gallon tax will remain effective through February 28, 1984.

It is improbable that the Ohio legislature will make further adjustments to the fuel tax until 1984. The groups and individuals which claim the trucking industry is not paying a fair share of highway costs argue that increasing fuel taxes does not change the proportions of costs paid by each vehicle class. If the Ohio highway cost allocation study determines a need for trucks to pay more toward highway costs, revenue raising measures other than fuel tax increases are likely to be considered.

#### Registration Fees

Registration fees for all vehicles increased in 1981 by 100 percent. Another across-the-board increase in vehicle registra-

tion fees is probably not politically feasible in the short-term. Results from the cost allocation study which show that trucks should pay more in highway use taxes will support a proposal to raise registration fees for trucks only. Table 4 gives user fees and taxes paid by intrastate truck operators in each of the 50 states.

#### The Axle-Mile Tax

Of all the possible proposals to increase highway tax revenues in the future, a plan to increase the axle-mile tax would probably receive a significant amount of attention by the Ohio legislature. Those who presently support an increase in the axle-mile tax emphasize that the tax has not been increased since it was first instituted in 1953. In contrast, both the fuel tax and vehicle registration fees have been increased recently.

Figure 3 shows how axle-mile tax revenues have increased steadily over the years, mainly because the number of trucks travelling on Ohio highways has been increasing. However, when these revenues are converted to equivalent purchasing power figures a picture different from Figure 3 comes to light. The Federal Aid Highway Construction Cost Index, developed by the U.S. Department of Transportation, was used to convert axle-mile tax revenues to equivalent purchasing power values. Figure 4 illustrates how the purchasing power of axle-mile tax revenues has eroded since 1973. Past increases in axle-mile tax revenues have not been sufficient to compensate for the soaring costs of labor and materials for highway construction and maintenance.

Table 4: State Highway User Taxes Paid by a Typical 78,000 Pound 5-Axle Tractor Semitrailer Operating Intra-state For-Hire, March 1, 1982

State	Registration Fees 1/	Miscellaneous Taxes 2/	3rd Structure Taxes	Fuel Taxes 3/	Total
Alabama	\$ 801.00			\$1,787.52	\$2,588.52
Alaska	230.00	\$ 55.00		1,191.52	1,476.52
Arizona	987.00		\$5,600.00	1,429.82	8,016.82
Arkansas	1,057.00	5.00		1,500.03	2,562.03
California *	1,081.00	491.37		2,025.58	3,597.95
Colorado	33.00		3,897.15	1,340.46	4,270.61
Connecticut	878.00	10.00		1,638.34	2,526.34
Delaware	399.00			1,638.34	2,037.94
District Of Columbia	699.00			1,936.22	2,635.22
Florida	474.00			1,191.52	1,665.52
Georgia *	708.00	5.00		1,623.45	2,336.45
Hawaii *	405.95	180.51		1,921.33	2,507.79
Idaho	136.80	25.00	2,992.50	1,712.81	4,867.11
Illinois *	1,492.00	19.00		1,728.61	3,239.61
Indiana *	730.00	24.00		2,293.68	3,047.68
Iowa	1,660.00	10.00		2,010.69	3,680.69
Kansas	1,350.00	10.00		1,489.40	2,849.40
Kentucky	861.00	25.00		1,504.29	2,390.29
Louisiana	946.00	10.00		1,191.52	2,147.52
Maine	791.00	8.00		1,340.46	2,139.46
Maryland	639.00			1,340.46	1,979.46
Massachusetts	576.00	10.00		1,653.23	2,239.23
Michigan *	867.00	50.00		2,323.46	3,240.46
Minnesota	1,532.75	20.00		1,936.22	3,489.02
Mississippi *	1,395.50	13.00		2,412.83	3,821.33
Missouri	1,058.50	25.00		1,020.81	2,104.31
Montana	952.25	840.36		1,638.34	3,430.95
Nebraska	1,250.00	15.00		2,070.27	3,335.27
Nevada	166.80	419.00		1,563.87	2,149.67
New Hampshire	604.46	10.00		2,085.16	2,699.62
New Jersey	691.00			1,191.52	1,882.52
New Mexico	85.00		1,826.30	1,340.46	3,251.76
New York *	562.25		1,820.00	2,144.74	4,526.99
North Carolina	787.00	1.00		1,824.52	2,612.52
North Dakota	1,086.00	40.00		1,191.52	2,317.52
Ohio	671.40	30.00	1,400.00	1,742.60	3,844.00
Oklahoma	731.00	5.00		968.11	1,704.11
Oregon	200.00	5.00	4,480.00		4,685.00
Pennsylvania *	1,116.00			2,133.57	3,249.57
Rhode Island	430.00	7.00		1,787.28	2,224.28
South Carolina	673.00	100.00		1,936.22	2,709.22
South Dakota	1,430.00	10.00		1,936.22	3,376.22
Tennessee	1,300.00	5.00		1,936.22	3,241.22
Texas	795.30	11.00		968.11	1,744.41
Utah	526.00			1,638.34	2,164.34
Vermont	2,023.45				2,023.45
Virginia	944.00	3.00		1,936.22	2,883.22
Washington	1,020.75	32.00		1,787.28	2,840.03
West Virginia	698.50	28.50		1,563.87	2,290.87
Wisconsin	1,578.00	40.00		1,936.22	3,563.22
Wyoming	120.00	15.00	2,524.34		2,659.34

\* Includes state sales tax on fuel.

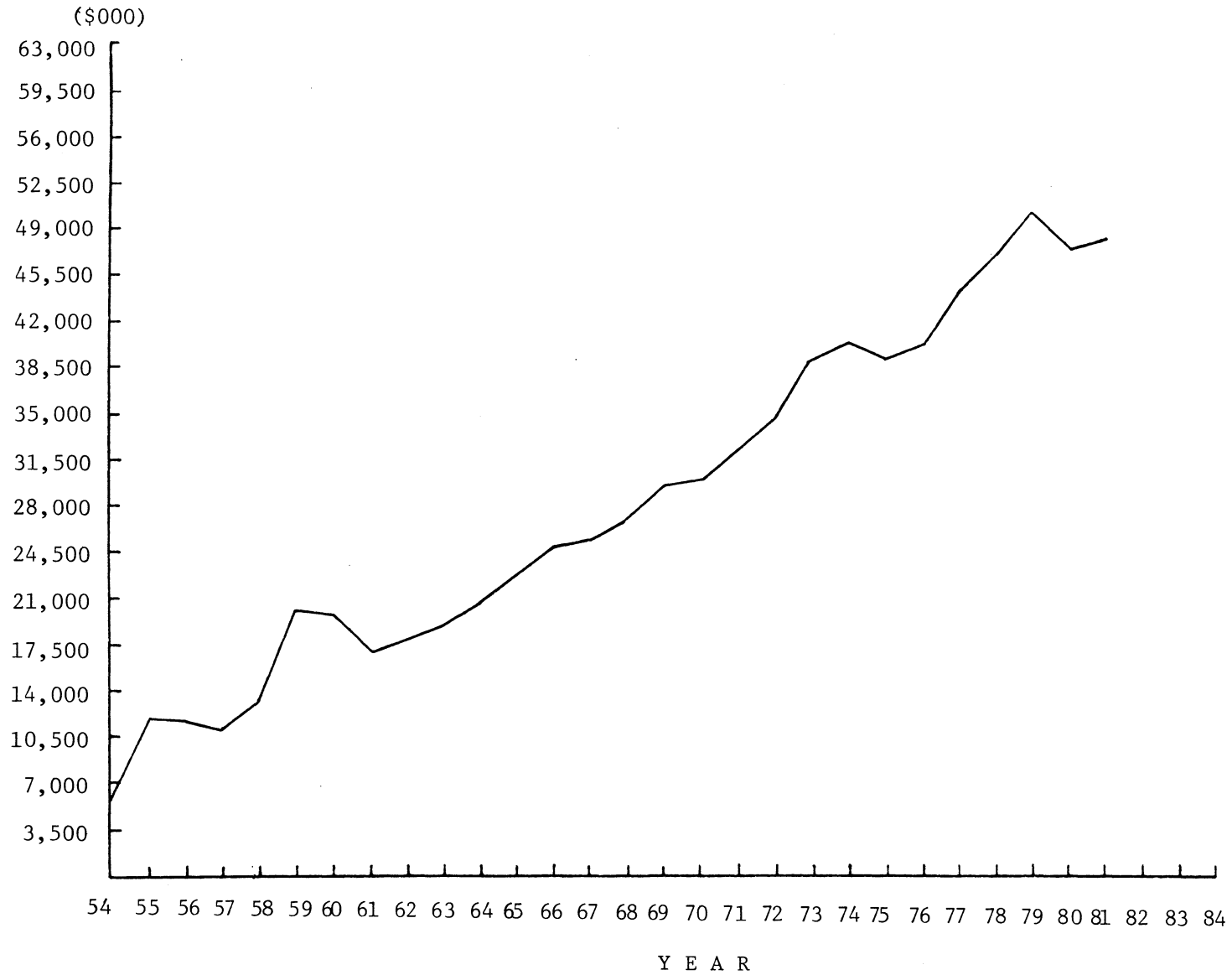
1/ In Arkansas, Illinois and Missouri the registration fee is based on the maximum gross weight allowed on 73,280 pounds.

2/ Includes carrier taxes, cab cards, gross receipts taxes and other miscellaneous fees.

3/ Based on 70,000 miles of annual travel at 4.7 miles per gallon. [14,894 Gallons]

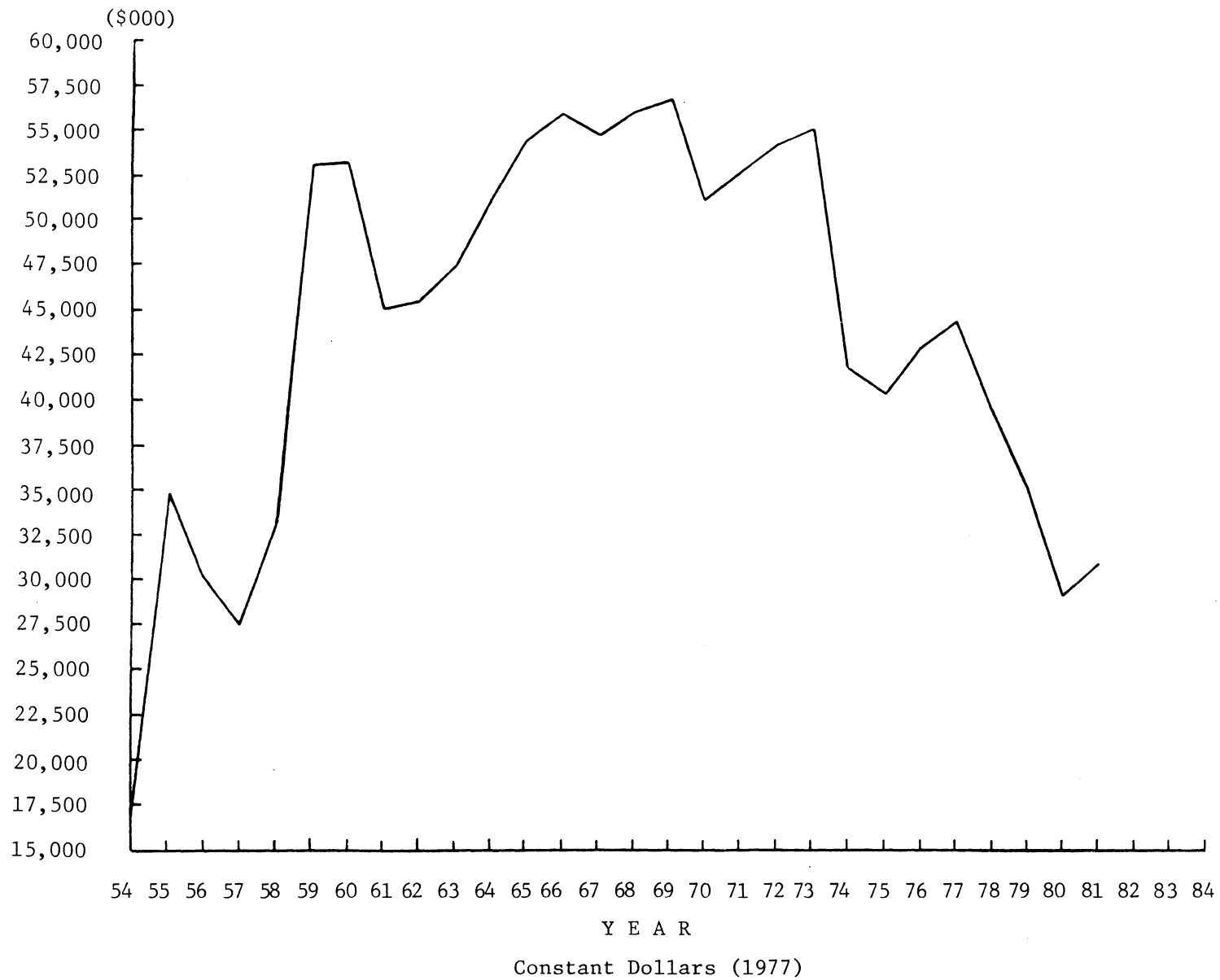
Source: The Ohio Trucking Association

Figure 3: Current Value of Ohio Axle Mile Tax Revenue, 1954-81



Source: Ohio Department of Taxation

Figure 4: Deflated Value of Ohio Axle Mile Tax Revenue, 1954-81

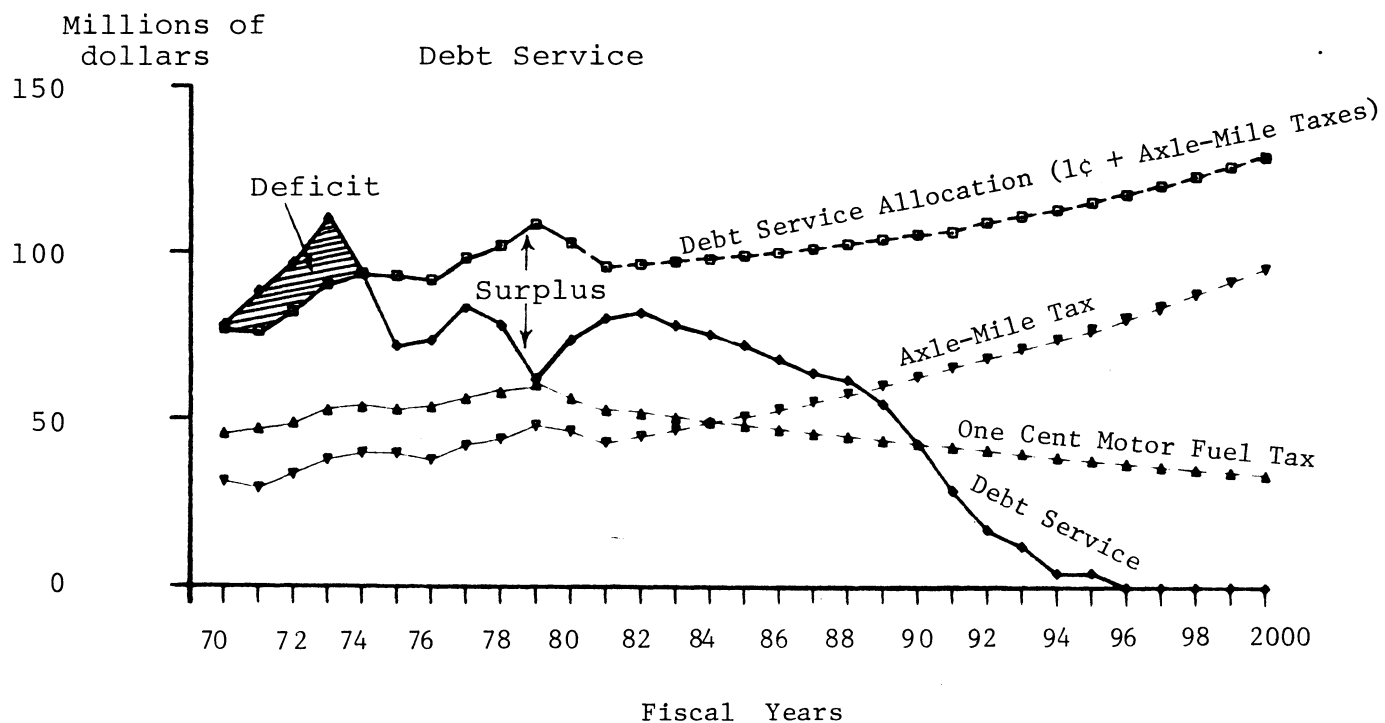


As oil prices have skyrocketed since 1973, so have the costs of oil-based road materials.

The Ohio Trucking Association points out that the axle-mile tax was created solely for the purpose of providing funds for highway bond retirement. In this capacity the tax has more than achieved its goal. ODOT has dedicated the axle-mile tax and one cent of the state fuel tax to payment of debt service. Figure 5 plots actual figures through 1980 and projects figures through the year 2000 for debt service requirements and revenues collected from the axle-mile tax and the one cent motor fuel tax. The projection of axle-mile tax revenues is based on the tax rates currently in effect. Since 1974, as is indicated by Figure 5, debt service requirements have been met entirely by the axle-mile tax and the one cent fuel tax. In fact, beginning this year, an excess of debt service funds is expected to be generated at an increasing rate through the year 2000. All excess funds from the debt service program are deposited into the general state highway operating fund. If the Ohio highway cost allocation study determines that heavy-duty trucks need to pay more in highway use taxes, the axle-mile tax will be viewed more in terms of a method to increase the proportion of total highway costs paid by the trucking industry and less in terms of how effectively the tax contributes to highway bond retirement. If today's axle-mile tax rates were adjusted to match the purchasing power generated by the tax rates when they were first applied



Figure 5: Actual and Projected Debt Service Requirements and Revenues Collected from the Axle-mile Tax and One Cent Motor Fuel Tax



Source: Ohio Department of Transportation

in 1953, the rates would be 4.4 times higher than they are today.<sup>3/</sup> Table 5 compares today's axle-mile tax rates with a rate schedule which would generate revenues with purchasing power equivalent to that of revenue generated in 1953.

Impacts of Increased Highway User Fees on Agriculture

Tables 6 and 7 were developed to illustrate how a grain shipper might be affected by increases in either truck registration fees or the axle-mile tax. In deriving these tables, the following simplifying assumptions were made:

- A 78,000 pound 5-axle tractor semitrailer operates intrastate for-hire.
- The truck travels 70,000 miles annually.
- There are no commodities backhauled (truck runs empty on the return trip).
- The truck averages 4.7 miles per gallon of fuel.
- Fuel taxes are assessed at 11.7 cents per gallon of fuel.
- The present axle tax is 2 cents per mile for this particular vehicle classification.
- The truck carries 875 bushels of grain.
- Grain is hauled 50 miles from origin to destination.

If a truck carrier is able to haul a commodity on a return trip from hauling grain, the grain shipper would benefit by not having to pay the full costs (including highway user taxes) of the return trip. However, even without a backhaul commodity, a grain shipper would probably not be affected significantly by an increase in either axle-mile taxes or truck registration fees.

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<sup>3/</sup>Based on the Federal Aid Highway Construction Cost Index, U.S. Department of Transportation.

Table 5: Current and Adjusted for Inflation Axle-Mile Tax Rates by Motor Vehicle Class, Ohio, 1982

	Single Unit 3 or More Axles	Tractor Trailer 3 Axles	Tractor Trailer 4 Axles	Tractor Trailer 5 or More Axles	Commercial Car
Current Rates	0.5	1.0	1.5	2.0	2.5
Adjusted Rates to Match 1953 Purchasing Power	2.2	4.4	6.6	8.8	11.0

Table 6: Impact of Selected Tax Increases on Total Taxes Paid by a Five Axle Tractor Semitrailer, Ohio, 1982

Scenario	Registra- tion Fees	Miscellan- eous Taxes	3rd Structure (Axle-Mile) Taxes	Fuel Taxes	Total Taxes
Present Structure	\$671.40	\$30.00	\$1,400.00	\$1,742.60	\$3,844.00
Double The Axle Tax	671.40	30.00	2,800.00	1,742.60	5,244.00
Triple the Axle Tax	671.40	30.00	4,200.00	1,742.60	6,644.00
Quadruple the Axle Tax	671.40	30.00	5,600.00	1,742.00	8,044.00
Increase Registration Fees by 50 Percent	1,007.10	30.00	1,400.00	1,742.60	4,179.70
Increase Registration Fees by 100 Percent	1,342.80	30.00	1,400.00	1,742.60	4,515.70

A doubling of the axle-mile tax would increase transportation costs by 0.23 cents per bushel for a 50 mile grain haul with no commodities backhauled. A 100 percent increase in truck registration fees would increase transportation costs by 0.10 cents per bushel.

Trucks which are privately owned by farmers typically do not travel 70,000 miles per year as is assumed in Table 6 and 7. This means there are fewer miles over which the farmer can distribute the cost of registration fees. The fewer miles a truck travels each year, the greater is the impact of an increase in

Table 7: Increased Grain Trucking Costs Resulting From Selected Tax Increases, Ohio, 1982

Scenario	Tax Cost Per Mile To Truck Operator	Tax Cost Assessed To Shippers, Empty Backhauls	Truck Tax Per Bushel Assessed to Shipper For a 50 Mile Haul	Total Truck Tax Assessed To Shipper for a 50 Mile Haul
Present Structure	\$0.055	\$0.11 <sup>a/</sup>	\$0.0063	\$5.50
Double the Axle Tax	0.075	0.15	0.0086	7.50
Triple the Axle Tax	0.095	0.19	0.0109	9.50
Quadruple the Axle Tax	0.115	0.23	0.0131	11.50
Increase Registration Fees by 50 Percent	0.060	0.12	0.0069	6.00
Increase Registration Fees by 100 Percent	0.064	0.128	0.0073	6.40

<sup>a/</sup>A grain shipper must pay the full round-trip costs of a one-way grain haul if there is an empty backhaul.

truck registration fees on a per mile basis. However, it is difficult to make direct comparisons between commercial vehicles and farm vehicles because registration fees for farm vehicles are currently about two-thirds of the fees charged for a commercial vehicle of the same classification.

The Impact of the Gasohol Fuel Tax Credit

Motor fuel sold in Ohio which contains 10 percent ethanol receives a 3.5 cent per gallon tax credit on the state motor fuel tax. A relatively insignificant amount of this "ethanol-enhanced" motor fuel is sold in Ohio, primarily because even with the state tax credit and an exemption from the federal fuel tax, gasohol is not price-competitive with gasoline. Ethanol producers estimate that retail gasoline prices of \$1.75 to \$1.90 per gallon would be required to make tax-subsidized gasohol price-competitive with gasoline. These producers are optimistic that gasoline prices are destined to increase in the near future.

South Point Ethanol is a joint venture partnership, located in South Point, Ohio. Ashland Ethanol, Inc., a subsidiary of Ashland Oil of Ohio, owns a 50 percent share of the partnership; a 20 percent share is held by Ohio Farm Bureau Synfuels Investment, Inc., a subsidiary of the Ohio Farm Bureau Federation, and 15 percent interests are held by Publisher Gasohol, Inc. and UGI Ethanol Development Corporation, both of Pennsylvania.

Last year South Point Ethanol (SPE) secured a \$24 million loan from the U.S. Department of Energy on which the company agreed to pay an annual interest rate of 8.5 percent. In addi-

tion, SPE is financially supported by a \$32 million loan which is guaranteed by the Farmers Home Administration. SPE plans to begin producing ethanol by the end of 1982. When operating at full capacity the plant will use 24 million bushels of corn to produce 60 million gallons of 199 proof ethanol annually. This output would make it the third largest ethanol facility in the country.

The purpose of profiling SPE in this report is to identify a developing situation which could affect Ohio highway revenues in the very near future. SPE has been planning and constructing ethanol facilities for more than 3 years. After having secured some impressive financial support, the company is ready to make a serious attempt at realizing its goal of full-scale ethanol production. The only drawback in this venture is decreasing gasoline prices. Even if currently depressed gasoline prices prove to be an aberration in a long-term trend of ever-higher prices, the short-term outlook shows SPE needing all the help it can get in marketing its ethanol product.

To successfully market ethanol, SPE needs the gasohol tax subsidies granted by Ohio and the federal government. Obviously, SPE would like gasoline prices to increase enough to allow the ethanol producer to market its entire full-capacity output of 60 million gallons. If a significant portion of this output was marketed in Ohio in the form of gasohol, the state could lose a substantial amount of highway fuel tax revenue. SPE's 60 million

gallon output of ethanol translates to 600 million gallons of gasohol or 12.7 percent of all 1981 Ohio gasoline sales. A 3.5 cent per gallon tax credit on 600 million gallons of gasohol translates into a \$21 million loss in state fuel tax revenues.

Of course, the Ohio legislature can remove the gasohol tax credit at any time. However, the timing of such a maneuver would be critical to the economic viability of SPE. Removing gasohol production incentives is a politically sensitive matter. The U.S. Treasury recently has sent Congress proposals to phase out tax incentives for gasohol production. Included is a plan to repeal the exemption of gasohol from the 4 cent per gallon federal fuel tax. But strong bipartisan support in the Senate to keep most of the gasohol incentives is expected to prevent any of the phaseout programs from being approved this year. Political debate in Ohio over the removal of gasohol incentives would probably be equally as vigorous as it is at the federal level.

#### Other Alternative Plans to Increase Highway Funds

The Ohio Trucking Association wonders if farmers should continue to be able to pay vehicle registration fees which are lower than those for commercial vehicles. OTA says most county roads and bridges are used more by farm vehicles than any other heavy vehicle. If Ohio counties need more funds to improve the condition of its roads and bridges, why not let the real users pay their "fair share?"

Another issue is the fuel tax exemption for fuel consumed on farms. This exemption is supported by the idea that farm

vehicles do not use the roads and bridges which are built and maintained with fuel tax revenues so they should not be subject to the fuel tax. On the other hand, some groups and individuals point out that many farmers do indeed use tax-exempt fuel to operate trucks and other farm vehicles and even passenger cars on fuel tax-supported thoroughfares.

A third alternative which would raise county road revenues consists of increasing farm real estate taxes. Although none of these last three suggestions hold much favor with the agricultural sector, they nonetheless must be included as highway revenue increasing proposals.

#### Conclusion

The results from the Ohio cost allocation study are due on July 1, 1982. Highway revenue policy in Ohio could be significantly influenced by these results. The specter of more inflation and higher oil prices in future years portend additional highway funding requirements by ODOT and Ohio counties. It is critical that agriculture, the trucking industry, public officials, and all other groups and individuals who will be affected by new highway revenue policy initiatives remain informed and actively involved in this developing debate.