Abridgment

International Registration Plan's Impact on State Road User Tax Collections

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This paper examines the 1976 operating user taxes paid to five states by a sample of 98 common carriers certificated by the Interstate Commerce Commission. With the exception of Virginia, effective tax collections by the sampled states were in the same order as nominal tax rates. Because of registration reciprocity, foreign carriers paid less to each state than did resident carriers. International Registration Plan (IRP) membership was found to lower the disparity between payments made by resident and foreign carriers to a state. Carriers from IRP states paid lower user taxes to the non-IRP states in which they traveled than did carriers from non-IRP states. This finding implies that non-IRP member states will come under increasing financial pressure to join. When 1976-estimated allocated costs by carrier type were compared with Virginia and federal user tax payments, it was found that no carrier class covered its allocated costs. Consequently, it was concluded that a disinvestment has been occurring in the state highway system.

Two issues are essential to an investigation of highway user charges and user costs. The first issue is equity among the several classes of highway users. Charges to highway users should be structured so that each class of highway user covers its allocated cost. The second issue is equity between in-state and out-of-state users. This paper addresses this second issue.

Ideally, there should be equality in the per mile user charges paid by vehicles domiciled in-state and out-of-state. For light passenger-carrying vehicles (automobiles, light trucks, and vans) such is usually the case, as their use is predominantly within the state of vehicle registration. These light vehicles represent approximately 90 percent of vehicular mileage traveled (1, p. 9).

But, for heavier trucks, which represent most of the remaining 10 percent of vehicular mileage, the close correspondence in user payments per mile between vehicles domiciled in-state and out-of-state is generally not present. Registration reciprocity agreements between states permit a vehicle that is properly registered in one state to operate within other party states without additional license registration. Since all states and provinces are party to one or more registration reciprocity agreements, an interstate motor carrier need pay no registration fees to a given state, even if travel is done in that state. Since registration fees vary widely among the states, a judicious selection of state registration can lower user tax payments significantly. Furthermore, because some states levy ad valorum taxes on vehicles registered therein, additional incentives exist to shop for registration. In 1976, the savings in user costs from registering the largest, five-axle tractor semitrailer combination in the lowest-cost state along the eastern seaboard (Georgia) as opposed to the highest-cost state (Virginia), would have been approximately $0.01/mile for a vehicle that travels 50 000 miles (2).

For several decades state motor vehicle administrators have recognized this problem. Initially, through the Uniform Vehicle Registration and Proration Agreement and, since 1976, through the successor International Registration Plan (IRP), the American Association of Motor Vehicle Administrators (AAMVA), with the support of the motor-carrier industry, has promoted the proportionate registration of heavy vehicles used in interstate commerce.

This paper will analyze the impact of IRP membership on operating user taxes paid by Interstate Commerce Commission (ICC)-certificated, common-motor-freight carriers to several states.

STRUCTURE OF ROAD USER TAXES AND THE IRP

Road user taxes traditionally have been divided into three broad classifications:

1. Motor fuel taxes and surcharges, termed first-structure taxes;
2. Motor vehicle registration and license fees, termed second-structure taxes; and
3. Other major road user taxes such as gross receipts or weight-distance taxes, referred to as third-structure taxes.

Fewer than 10 states have significant levies of the latter type.

In the early 1970s, 12 states and one Canadian province became charter members of the IRP, which is sponsored by the AAMVA. With the exception of Kentucky, Tennessee, and Virginia, charter members were located west of or along the Mississippi River, a reflection of previous membership in the Uniform Proration Aggreement. Over the past six years, IRP membership has increased to its present 23; North Carolina and Virginia are the only members along the Eastern seaboard.

Under the IRP, heavy vehicles used to carry passengers or property within two or more IRP states pay registration fees to each participant state in proportion to the mileage done in that state by the carrier during the previous year or that expected to be done during the present registration period. As such, the IRP supercedes registration reciprocity among the member states. The reciprocity agreements previously negotiated between IRP and nonmember states continue to govern vehicle registration between nonmember states and IRP states.

THE MODEL

To determine the impact that IRP has on state revenues from user charges, a sample of 98 motor carriers with class I, ICC common certificates was drawn from the files of the Virginia State Corporation Commission. Because the carriers were drawn on the basis of 1976 mileage traveled in Virginia, the sample represents more than 200 million miles of travel, or approximately 18 percent of total miles traveled in Virginia by large trucks and tractors (25 percent of for-hire carrier mileage) (3). Carriers that report leased mileage in excess of 20 percent were excluded from the sample. To include these carriers would introduce questions of lessee-lessor tax responsibilities in the several states.

Carrier operating user taxes to the federal and state highway trust funds in 1976 were obtained from the carrier M-1 annual reports filed with the ICC (4). The year chosen represents the last year that carriers have been required to report user taxes by state and the first full year of IRP operation for several states. Total annual mileage by each firm

Table 1. Effective 1976 state user tax payments to selected states.

Carrier Paid To	1976 State User Tax Payments[a] (¢/mile)				
	GA	MD	NJ	TN[b]	VA[b]
Non-resident carrier	2.19	2.57	3.32	3.33	2.92
IRP carrier	1.66	2.47	3.21	3.40	3.10
Resident carrier				4.09	4.76

Note: The in-state mileage for the sampled carriers was as follows: Georgia, 76.7 million miles; Maryland, 39.0 million miles; New Jersey, 44.1 million miles; Tennessee, 110.1 million miles; and Virginia, 220.6 million miles.

[a]Does not include state-capitalized taxes, if any. [b]IRP state.

Table 2. Nominal operating road user taxes for selected tractor, semitrailer combinations for sampled states in 1976.

Structure	Nominal Operating Road User Taxes (¢/mile)				
	GA	MD	NJ	TN	VA
First[a]	1.60	1.91	1.70	1.70	2.34
Second[b]	0.77	0.91	1.24	1.75	1.80
Total[c]	2.37	2.82	2.94	3.45	4.14

Note: None of the sampled states levies a third-structure tax.

[a]It was assumed that the vehicle averaged 4.7 miles/gal, the average fuel consumption rate of for-hire fleets in 1976. Excise tax rates per gallon were as follows: Georgia, 7.5 cents; Maryland, 9.0 cents; New Jersey, 9.0 cents; Tennessee, 8.0 cents; and Virginia, 11.0 cents.

[b]Annual registration fee on a for-hire, five-axle, diesel-powered, tractor semitrailer combination, 70 000 lb G.V.W., traveling 50 000 intrastate miles. Registration fees were as follows: Georgia, $385; Maryland, $455; New Jersey, $620; Tennessee, $878; and Virginia $894.

[c]The sampled carriers paid an average 2.62 cents/mile in operating and capitalized federal user taxes in 1976.

was obtained from the M-1 reports; mileage operated in each state was provided by the state tax authorities.

These data enabled us to estimate 1976 road user tax payments by the sampled carriers to Georgia, Maryland, New Jersey, Tennessee, and Virginia. The carriers were grouped on the basis of domicile and classified into one of three groups for each state. If the carrier's corporate headquarters was located within the state, the firm was classified as a resident carrier. Otherwise, the firm was considered a nonresident carrier. Nonresident carriers were also grouped as being from IRP or non-IRP member states. In 1976, two of the five states that responded were IRP members.

Table 1 shows what the carriers paid in operating user taxes per mile to the respective states in 1976. Table 2 shows nominal operating user taxes per mile under basic assumptions for the same year. The latter table represents what the carriers would be expected to pay per mile in operating taxes to the respective states. In Table 1, the first row contains the amount that non-resident carriers from non-IRP states paid in user charges per mile. These payments are generally greater than the motor-fuel tax liabilities (first structure taxes in Table 2) but less than the estimated nominal tax rate per mile (total of first and second structure taxes in Table 2). When we compare what foreign carriers actually paid per mile to states and the estimated tax per mile, New Jersey collects more than the estimate. These collections reflect the pickup and delivery vehicles of foreign-domiciled carriers used in the New York metropolitan area.

Table 1 also shows that Virginia collections from foreign-domiciled carriers are significantly lower than the estimate in Table 2. This finding is consistent with previous findings where the low effective tax rate was attributed to Virginia's high nominal rate (5, p. 917). As noted earlier, Virginia has the highest registration fees on tractor, semitrailer combinations along the eastern seaboard. Approximately 45 percent of the Virginia operating user taxes per mile would be derived from registration fees under the assumptions outlined in Table 2. But, under the registration-reciprocity agreements entered into by Virginia, no registration fee is required from vehicles properly registered in other states and provinces. Since more than 60 percent of the mileage traveled in Virginia by larger vehicles is by foreign-domiciled carriers (3), Virginia's effective rate is significantly less than its nominal rate.

As shown in Table 2, Tennessee has a nominal second structure tax rate only slightly lower than that of Virginia. However, its collections from foreign-domiciled carriers in Table 1 approximates the estimate in Table 2. Unlike Virginia, Tennessee administratively has worked to have foreign-domiciled carriers proportionately register line-haul vehicles in-state on a somewhat ad hoc basis. That is, if a carrier does 15 percent of its line-haul mileage on Tennessee highways, then it is asked to register approximately 15 percent of its vehicles in Tennessee. In essence, Tennessee enforces its own proportional registration requirement from non-IRP state carriers and, as a result, per mile payment to the state by the two types of foreign carriers are similar (Table 1).

Carriers from IRP member states should have been found to pay higher user charges to other IRP member states than carriers from nonmember states. This expectation was borne out (Table 1). In 1976, Tennessee and Virginia were IRP members. Both states received more from carriers domiciled in IRP states than from other foreign-domiciled carriers. The explanation for the Tennessee minimal differential was discussed above.

Note that, in Table 1 carriers from IRP states, although they paid higher user tax rates to member states than did non-IRP carriers, they paid lower user tax rates to nonmember states. This result was true for each nonmember state. For instance, although Georgia collected 2.19 cents/mile from foreign-domiciled carriers based in non-IRP states, it collected only 1.66 cents/mile from similar carriers domiciled in IRP states. This payment just covers the carriers' motor-fuel tax liabilities, which are not subject to reciprocity. This result reflects the tendency for IRP-state-based carriers to apportion more of their line-haul equipment. Thus, nonmember states receive even less in registration fees. This finding suggests that, the more widespread IRP membership becomes, the greater the adverse revenue impact on nonmember states and thus the greater political and economic pressure to join.

Table 1 also shows what resident carriers paid to their home states. There were enough carriers to give statistically significant results in two states, Tennessee and Virginia. As would be expected, road-user-tax payments per mile by resident carriers were significantly higher than payments by the two nonresident classes. In Tennessee, resident carriers paid 20 percent more per mile in road user charges, and in Virginia, resident carriers paid 54 percent more than foreign IRP carriers. The Tennessee proportional registration requirement again explains the narrower differential.

We noted earlier that IRP membership should lower collections of state user taxes from resident carriers. Data limitations permitted us to test this hypothesis only for Virginia. In 1973, the same sample of resident carriers was found to have paid 5.43 cents/mile to Virginia in user charges (6, p. 15), and a foreign sample was estimated to have paid 2.42 cents/mile. Although resident carriers in 1973 were estimated to have paid 124 percent more in road user taxes per mile than non-resident carriers, by

Table 3. Allocated costs and total user tax payments to Virginia by carrier class.

Class and Carrier Type	1976 Federal and State User Payments per Mile (¢)	1976 Federal- and State-Allocated Cost per Mile (¢)	Costs Covered (%)
All ICC-class I common carriers	5.96	8.57	70
Virginia resident, ICC common carrier	7.59	8.33	91
Nonresident, ICC common carrier from IRP state	5.78	8.66	67
Nonresident, ICC common carrier from non-IRP state	5.52	8.66	64

1976 (the first full year of IRP operation) this differential declined to 54 percent. This narrowing was the result of higher payments by IRP-foreign carriers and lower payments by resident carriers.

ESTIMATING ALLOCATED COSTS

Although estimation of allocated costs for the sampled carriers is beyond the scope of this paper, a brief comparison of costs and user revenues that relys on cost data developed elsewhere would put the above results in perspective (6). Because it has been the predominant method, allocated costs were estimated by using the incremental cost technique of the occasional cost method (7). Federal cost data (7) in 1964 dollars were used to generate Virginia costs. Then, indices were used to bring the results into 1976 dollars. Responsibilities for construction and maintenance costs by vehicle classification were calculated separately and summed.

To estimate Virginia cost responsibility per mile by type of motor carrier, estimates were made of the vehicle mix used by carriers of various domicile. ICC and Virginia data were used to estimate the vehicle mix. The estimated allocated cost per mile by carrier domicile is found in Table 3, second column. The highest Virginia cost responsibility is attributed to both IRP-member and non-IRP, foreign-domiciled carriers. This higher cost responsibility reflects their greater use of the largest tractor-semitrailer combinations. Total federal and Virginia road user tax payments are given in the first column of Table 3. The latter includes operating and capitalized payments.

From Table 3, Virginia-domiciled carriers had the highest coverage rate; user payments covered 91 percent of their allocated costs. This high coverage reflects that Virginia-domiciled carriers registered a disproportionate number of vehicles in their home state. Foreign-domiciled carriers from IRP-member states covered an estimated 67 percent of their allocated costs; foreign-domiciled carriers from non-IRP-member states covered 64 percent of their costs. Thus, in 1976, none of the carrier classes covered their allocated costs.

SUMMARY

This paper examined the 1976 operating user taxes paid to five states by a sample of 98 ICC-certificated, class I, common motor freight carriers. With one exception, effective tax collections by the sampled states were in the same order as nominal tax rates. Because of registration reciprocity, foreign carriers paid less in each state than did resident carriers. IRP membership was found to lower the disparity between payments made by resident and foreign carriers to a state. Carriers from IRP states paid lower user taxes to the non-IRP states in which they traveled than did carriers from non-IRP states. This finding suggests that non-IRP member states will come under increasing financial pressure to join. When estimated allocated costs by carrier domicile for 1976 were compared with Virginia and federal user tax payments, no carrier class was found to cover its allocated costs.

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