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*Costs of State Vehicle and  
Driver Licensing in Indiana:  
A Comparison with Other States\**

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**I**ndiana is unique as the only state of the union to rely upon the political patronage system for the actual provision of vehicle and driver licensing services, with coordination and data collection handled by the State Bureau of Motor Vehicles. The governor appoints the Commissioner of the Bureau of Motor Vehicles (BMV), who appoints a manager recommended by the party chairman in each of the 92 counties. The county license branches are allowed to keep a specified amount of the revenues collected (retained revenues). The remainder of the revenues accrues to the state's Motor Vehicle Highway Accounts, except a small amount that the other major party collects from personalized license plates. The disposition of the funds retained by the license branches is at the discretion of the county party chairmen. Some portion of those funds offsets the costs of running the branches, and some portion accrues to the county party.

We compare the costs in Indiana to what we would expect them to be, given the costs in the other states. This comparison sheds light on whether Indiana has higher or lower costs, once we control for relevant output and input differences. Political patronage may provide services at lower resource cost than government bureaucracy. Even though each county party chair is assured of a four-year monopoly following each gubernatorial election, a motive indeed exists to promote efficiency. Given that net revenues after paying operating costs accrue to the chairmen, they have a strong incentive to reduce operating costs. However, we have no reliable data on the actual costs incurred by the license branches. We know their cost is less than their retained revenues, but not how much less. Lower operating costs may not mean lower costs to taxpayers and licensees.

For most of the states, costs of licensing are itemized in the budgets of their motor vehicle bureaus. However, they may not include the costs of buildings and grounds, which in Indiana are directly paid for by the license branches.

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The remainder of this paper is divided into three sections including theory and evidence, methodology and empirical results, and the conclusions and policy implications.

Economic theory suggests several reasons for a government provider to have higher costs than a private contractor. The primary reason is that a government manager is not rewarded for reducing costs. Even in a large private corporation, a manager obtains some rewards for lowering costs. In contrast, a government manager tends to be rewarded for having a bigger bureau. Further, civil service requirements make firing unproductive employees more difficult. (See Williamson, 1964, Downs, 1965, Alchian, 1965, Alchian and Demsetz 1972, Bennett and Johnson 1980, and Spann 1977.)

Several empirical studies have compared costs of private versus public provision of government services. We are not aware of any literature relating directly to driver and vehicle licensing, or to the comparison of the costs of government versus patronage-private monopoly provision. Conceptually closest to our research are studies concerning fire departments and refuse collection. Ahlbrandt (1973) compared the costs of public provision of fire protection with the costs of a private fire department and found that private costs were approximately 47 percent less. Several refuse collection studies have come up with contradictory results, however. Hirsch (1965) found no significant difference between the costs of public and private organizations. Kemper and Quigley (1976) and Stevens (1978) found private provision to be more costly than public, and competitive private provision to be more costly than monopoly private production. Kitchen (1976) and Bennett and Johnson (1979) found private provision to be substantially less costly than public provision.

It is possible that public provision of vehicle and driver licensing is more costly than private provision. If so, competitive bidding for the right to provide these services would be expected to cost less. It is plausible that the noncompetitive award of this right to county party chairmen is less costly as well. If ever they want to increase revenues per transaction, they must have those increases legislated. Most bureaucratic budget increases do not suffer that amount of public scrutiny.

The next section discusses our test of the costs in Indiana, relative to provision elsewhere.

The costs which a state administrative agency would incur to provide license branch service in Indiana can be estimated by examining other states. Theory suggests that the cost of providing these services depends on the number of transactions performed and other institutional and environmental factors. Our first procedure is to regress budgetary costs on these variables for the other states. The final equation is of the form:

$$C_i = a_0 + a_1 T_i + a_2 T_i^2 + a_3 \ln T_i + a_4 E_i + u_i \quad (1)$$

where  $i$  represents the state,  $C$  is the budgetary cost,  $T$  is the number of automobile registrations, titles, and drivers' licenses issued, the transformations of  $T$  measure economies of scale, equalling the square of  $T$  and the natural log of  $T$ ,  $E$  denotes the number of state employees, and  $u$  is the error term.

With regression coefficient values from the other states, we then calculate Indiana's expected costs by inserting Indiana's observed values for the independent variables into the equation

$$C^* = W' \hat{\beta} \quad (2)$$

where  $C^*$  is the predicted cost for Indiana,  $W'$  is the vector of values that the independent variables take in the state of Indiana, and  $\hat{\beta}$  represents the estimated coefficients from the regression. This estimated number is then compared to the sum of actual BMV costs and retained revenues. To test whether the current system results in significantly different costs, we apply a two-tailed t-test to the differential between actual and predicted costs. The interval around  $C^*$  is of the form

$$C^* \pm t_{d/2} S [1 + W'(X'X)^{-1} W]^{1/2}$$

where

$$t = (\text{actual costs} - \text{calculated costs}) / S,$$

$S$  is the standard error of estimate and  $X$  is the matrix of observations from the other states.

Completion of the project required cooperation from state governments. Expecting that not all states would have up-to-date information, we asked for 1981 data. Forty states responded, including Indiana, although missing data pared the usable observations down to 35. Not all states provide exactly the same services. We could only imperfectly adjust for this diversity.

The equation represented in Table 1 is the least squares estimate of the costs of provision. The number of full-time equivalent state employees (EMPLOYEE) is significant and of the expected sign. EMPLOYEE is highly correlated with all of the output variables, with simple correlations of 0.817, 0.899, and 0.592, respectively. Yet, surprisingly, it still exerts a strong individual influence on COST.

Because registrations, titles, and licenses are all highly correlated with costs and each other, we added them together to obtain a measure of total transactions. No a priori expectation was assigned to the portion of the function relating to output, since theory did not indicate whether scale economies should exist. The coefficients on transactions (OUTPUT), its square (OUTPUTSQ), and its natural log (LNOUTPUT) imply the existence of scale diseconomies throughout the entire range of output.

TABLE 1. Cost as a Function of Output and Input Variables

		t-values
Constant	-15,537 x 10 <sup>4</sup> **	-3.500
OUTPUT	-3.79261**	-3.356
OUTPUTSQ	25.93863 x 10 <sup>-8</sup> **	7.223
LNOUTPUT	11,801 x 10 <sup>-3</sup> **	3.642
EMPLOYEE	6,795.03056**	3.208
adjusted R <sup>2</sup>	.97819	
F	371.05116	
S.E.E.	47,787 x 10 <sup>2</sup>	
n	34	

\*p &lt; .05

\*\*P &lt; .01

Originally, we had included measures of population dispersion, other inputs and outputs, and contractual and institutional arrangements. Included in our population measures were its absolute size, the population density, and a Gini index. Other inputs and outputs considered were the costs of license plates, the frequency of their issuance, vehicle inspections, number of license branch offices, the number of offices leased, and the average monthly earnings of full-time state employees not involved in education. We created dummy variables for county and other non-state provision of titles and registrations and of driver licenses. None of these had significant explanatory power.

Table 2 includes the actual values for the independent variables and cost of provision in the state of Indiana. We concluded that we could not reject the null hypothesis at the 0.05 level of significance. Indiana costs were over \$7 million higher than predicted. Although this difference was substantial, the actual Indiana costs were within the range predicted by the model. While the adjusted R<sup>2</sup> was quite high, there was some variation in costs for all the states in the sample that was unaccounted for by the model. The purpose of the t-test is to judge whether Indiana costs are significantly different from what we would expect if they were drawn from the same population as the states in the sample.

TABLE 2. Determinants of Costs in Indiana

EMPLOYEE <sup>a</sup>	474
OUTPUT <sup>a</sup>	8,261,181
OUTPUTSQ	682,471.115 x 10 <sup>8</sup>
LNOUTPUT	15.927078
Actual Costs <sup>a</sup>	\$29,417,708
Predicted Costs	22,181,772

<sup>a</sup> Source: Indiana Bureau of Motor Vehicles.

The next section will discuss the policy implications that the results of the study might indicate.

The study suggests that the current Indiana system has resulted in costs that are not significantly different from costs in other states. If these results had indicated higher costs, this would not necessarily mean that the current system is *less efficient* than direct state provision. The level of service may be perceived as higher under patronage than under direct state operation. If such a gain in consumer benefits outweighs the extra costs, the patronage system would be more efficient despite higher costs. A survey of individuals who purchase licenses is necessary to draw a conclusion concerning efficiency. Another consideration in evaluating the efficiency of the current system is that the revenues retained by the license branches are greater than the costs of operation. Thus, costs that are not significantly lower may indicate that statutory rates of retention are too high.

Even if the current system had been found to be significantly more efficient, we could not conclude that it is the most desirable system of providing licensing services for at least two reasons. First, the issue of the desirability of such a system has political and ethical dimensions which may outweigh any finding concerning narrowly defined economic efficiency. Second, regardless of how that political argument is resolved, there may be methods of organization which are preferable to either direct state operation or patronage, including competitive bid contracting.

In September 1985, Governor Orr stated that, for the sake of public confidence, he was recommending total state operation of the license branch system. However, he warned that costs of such a system would be substantially higher than with the present patronage system. Our findings indicate that a state system that is no less efficient than systems in other states should not cost substantially more.

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