EFFECTS OF A ROOM TAX ON RESORT HOTEL/MOTELS

J. PAUL COMBS AND BARRY W. ELLEDGE*

Introduction

INCREASINGLY, local governments are expressing concern about the costs of providing public services because citizens are becoming more and more reluctant to support leaders who increase the local property taxes, the primary source of discretionary revenue for local governments. This problem can be especially severe in counties where a substantial portion of the economic activity is generated by the resort industry, because the resort industry generates a substantial flow of tourists into and out of the resort area, causing additional costs to be imposed on the local population. These costs include (1) increased expenditure for local public services such as public safety, medical services, water and sewer systems, and road maintenance and (2) nonmonetary externalities such as time loss and frustration due to traffic congestions, pollution, unpleasant esthetic effects and other factors contributing to a decrease in the quality of life for local citizens. To the extent that these costs are uncompensated, local citizens who do not participate in the resort activity have a legitimate concern about the increasing cost of local government and may legitimately feel that they are subsidizing the resort industry.

One way in which the local government in a resort may deal with this situation is by imposing an occupancy tax on hotel/motel rooms. Administratively, a room occupancy tax should be relatively easy to impose and collect. The impact of a room occupancy tax depends upon the elasticity of demand for hotel/motel rooms in the resort. If demand is elastic, the tax will fall primarily on hotel/motel owners, causing them to bear a greater portion of the burden of local government. If demand is inelastic, the tax will fall primarily on room occupants, compensating local residents for some of the external costs of the resort activity.

There are several important questions which must be addressed by any local government considering the alternative of an occupancy tax on hotel/motel rooms. First of all, a local government should consider whether the travel industry pays its own way through general sales taxes, property taxes, privilege licenses, and expanding employment in the local economy. The measurement of costs imposed by the traveling public, especially external costs, presents a major problem in determining whether the travel industry generates benefits sufficient to offset the costs to the community.

If the travel industry does not generate benefits sufficient to cover the cost imposed on the community, a whole new set of questions concerning the impact of an occupancy tax should be addressed. To determine the revenue potential of the tax, one would need to measure the elasticity of demand for hotel/motel rooms. What size tax could be imposed without significantly affecting the demand for hotel/motel rooms and related goods and services?

Clearly, according to Musgrave's classification, a hotel room occupancy tax is a discriminatory tax since it fits the category of a selective excise tax; but, so do many other taxes.[1] However, one of the rallying points for hotel/motel associations is the claim that an occupancy tax imposes an "unfair" burden on hotel operators, both by singling out the travel industry and by singling out lodging as one component of the travel industry. A related, perhaps more important, question concerns the incidence of the tax: Does it impose a higher relative tax burden on low-income people than on high-income people?

In this paper, we address the questions raised above in an attempt to provide policy guidance for local officials.

*Department of Economics, Appalachian State University.

Revenue Potential of a Hotel/Motel Room Occupancy Tax

Two major issues involved in consideration of an occupancy tax are: (1) how much revenue will the tax generate for local government and (2) what will be the impact of the tax on the motel industry specifically and on the travel industry in general?

In order to address either of the two questions above, one must consider the price elasticity of demand for motel accommodations. The rental of a motel room can be considered as an input into the production of some composite good, such as, sales for a marketing representative, or a family vacation.

Viewing motel accommodations as an input into a production process, one can apply Marshall's rules for the elasticity of demand for a factor of production.[2] The demand for motel accommodations in a resort will be more inelastic (1) the more essential motel accommodations are for the production of resort vacations, (2) the more inelastic the demand for resort vacations, (3) the smaller the ratio of the cost of motel accommodations to the total cost of resort vacations, and (4) the more inelastic the supply of other inputs for producing resort vacations. Marshall's elasticity conditions pose a set of questions which, ultimately, can only be answered empirically, but some intuitive considerations of the implications of these conditions may prove fruitful.

The major input classifications for resort vacations include the family's time, transportation, lodging, food, recreation and entertainment. With the possible exception of recreation and entertainment, some amount of each of these would be required for a resort vacation of more than one day in duration, and very little substitution between these inputs is likely to occur. Transportation is generally by family car from point of origin to the resort area, and as such is not subject to much variation as long as the trip is taken. Food, lodging and recreation expenditures can be varied more than can transportation expenditures, but we expect that there would be little substitution between these inputs for the following reason. Vacation days are obviously not a homogeneous product; a vacation consisting of a luxury hotel and expensive food and entertainment is qualitatively different from a vacation of the same duration consisting of lodging in a cheaper hotel, eating in fast-food restaurants, and less entertainment. We expect families to attempt to maintain the same quality of life on vacation as they do at home, therefore reducing the likelihood of substitution among the inputs in response to a tax on motel occupancy.

Another possibility for substitution exists within the lodging category. Given time to adjust to the price increase resulting from a motel occupancy tax, the vacationer may choose alternative forms of lodging or lodging in a neighboring jurisdiction where an occupancy tax has not been imposed. The former problem can be handled by imposing the tax on all temporary lodging facilities which are rented for less than some fixed period, such as 60 days.

The problem of interjurisdictional spillovers cannot be handled quite so simply. Mikesell found a significant negative impact of interjurisdictional sales tax differentials on total sales and sales tax revenue collected in the areas with higher taxes.[3] This implies that an occupancy tax may cause some vacationers to locate in neighboring jurisdictions in order to avoid the tax. However, if the tax were to be imposed across the entire resort, the spillover problem would be minimized because of the additional transportation cost incurred by those attempting to avoid the tax by driving back and forth between their lodging and the resort activity.

Resort vacations may be identified as a luxury good, for which demand is likely to be elastic. Families may choose a less expensive resort or take their vacations at home in response to rising prices.

The supply of other inputs for resort vacations is expected to be highly elastic to the decision-making family because the family unit is a price-taker in the markets for food, transportation, and recreation. However, the easy availability of these other inputs will have little effect on the

demand for lodging if, as suggested, they are not good substitutes for lodging.

The fourth of Marshall's elasticity rules relates to the proportion of vacation cost accounted for by lodging. Intuitively, it seems that lodging must be a relatively small proportion of the total cost of resort vacations. Our intuition is supported by the recent BLS expenditure survey which indicates that lodging is less than 20 percent of vacation spending.[4] Thus, even if the elasticity of demand for resort vacations is (say) 2 with no substitutions among the inputs, a five percent increase in the price of lodging will result in only a two percent decrease in the quantity of vacations and lodging demanded.

Given all of the above considerations, we expect the demand for lodging in a resort to be inelastic with respect to price. An interesting observable phenomenon supporting this conclusion is the growth of cut-rate, minimum service motels along interstates and in metropolitan areas, but not in resorts. A logical conclusion is that the demand for resort lodging is inelastic.[5]

If, as we suggest, the demand for resort lodging is inelastic, a small ad valorem tax imposed on motel rooms and other forms of temporary lodging would have very little impact on the industry and would generate substantial revenue for the local government. For Watauga County, a small mountain resort county in Western North Carolina with approximately 1200 motel rooms and a population of 30,000, a four percent tax on an average room rate of $25 a day would yield about $350,000/year, assuming 80 percent occupancy. This does not include the tax yield from other short-term lodging. Table 1 below shows other possible tax yields from 1200 motel rooms under alternative assumptions concerning the rate of the tax and occupancy. The figures imply no reduction in occupancy as a result of the tax, i.e., either demand or supply is almost perfectly inelastic.

Equity Effects of a Hotel/Motel Room Occupancy Tax

The question of tax equity involves consideration of who benefits and who pays the tax. If the purpose of the hotel/motel room occupancy tax is to compensate the local population for tourist-related costs, a comparison is needed of the local tax revenues attributable to tourists versus the estimated local cost attributable to tourists. These costs would include both the direct (tangible) costs of providing local government services plus the indirect (intangible) costs of the tourist-related externalities, such as the congestion, etc. mentioned earlier. Although estimates such as these are difficult, and perhaps impossible for the intangible costs, such an approach examines whether or not tourists are contrib-

TABLE 1

Revenue Potential From 1200 Hotel/Motel Rooms Using Alternative Tax Rates and Occupancy Rates with $25 per day average room rental cost. (Table entries are potential tax revenues in dollars.)

		Room Tax as a Percent of Room Rental Charge					
		1	2	3	4	5	6
Occupancy Rate in Percent	60	65,700	131,400	197,100	262,800	328,500	394,200
	70	76,650	153,300	229,950	306,600	383,250	459,900
	80	87,600	175,200	262,800	350,400	438,000	525,600
	90	98,550	197,100	296,650	394,200	492,750	591,300

uting their share of local taxes.

Tourists already pay local taxes to the extent that they buy local goods and services and the businesses are able to shift their taxes forward. Such taxes may include: (1) a share of the property taxes paid by tourist-related businesses, prorated by the share of business done by transients, (2), a share of local excise taxes, and (3) user charges for public services used by tourists.

The tangible costs of providing services to travelers include a share of the following costs (again prorated to tourists): safety and law enforcement, roads and parking, water and sewer, solid waste disposal, health facilities, fire protection, legal and court costs, parks and recreation, and general government. This last item may be thought of as "social overhead," i.e., the costs of maintaining a functioning government and a going community, both of which are essential to the local tourist industry.[6]

Intangible costs attributable to travelers include: the costs of added traffic congestion, the added pollution and despoilation of the local environment, and whatever value is attached to an erosion of the local native lifestyle. These intangible costs cannot be estimated in dollar values; however, local elected government policy makers can form normative judgements about the magnitude of these costs when considering additional taxes on transients.

Another necessary assessment of any tax is to examine the incidence of the tax. The two basic philosophies traditionally used in distributing the tax burden have been: (1) the benefits received principle, and (2) the ability-to-pay principle. The ability-to-pay principle has been used to justify the majority of taxes (at least in terms of total tax receipts). For this paper, we accept the conventional wisdom that taxes be levied in accordance with ability-to-pay.

The room occupancy tax is a consumption-based tax. To measure the incidence of a consumption-based tax, the consumption (use) of the item being taxed across income classes needs to be examined. Davies and Black have used this approach in examining the equity effects of including the value of housing services in the sales tax base.[7] Progressive/Regressive indices were calculated depending upon the movement of the average rate of taxation with changes in the ability to pay.

Following traditional notions, a tax is considered regressive if the average rate of taxation declines as the ability to pay increases. A tax is progressive if the average rate increases as the ability to pay increases and the tax is proportional if the rate remains constant with changes in the ability to pay.

Alternative assumptions of the income (or ability-to-pay) measure are common in tax incidence theory. Annual income is the generally accepted measure of the ability-to-pay; however, income after taxes or total consumption expenditures can also be used. Income before taxes overstates "true" or disposable income; therefore an alternative income measure is also used in the following analysis. Lacking a measure of permanent income, total annual consumption expenditures provide a proxy for the ability-to-pay. Consumption better reflects the ability-to-pay over a longer period of time than does annual income before taxes.

Consumer expenditures for vacation-related lodging over 12 income classes are available from the BLS's *Consumer Expenditure Survey* (1976). Data for 1972 and 1973 are shown in Table 2.

The elasticity of vacation-related lodging expenditures with respect to the given income measure is used to indicate the incidence of an occupancy tax on hotel/motel rooms. If the elasticity of lodging expenditures with respect to income (i.e. the percentage change in expenditures divided by the percentage change in income) is greater than one, then the percentage change in receipts raised from the tax is greater than the percentage change in income; therefore a tax on the room occupancy is progressive. If the converse is true, then the tax would be regressive.

Elasticity coefficients for lodging expenditures were estimated with the fol-

TABLE 2

Current Consumption Expenditures and Vacation-Related Lodging Expenditures by Income Class, 1972 and 1973.

Before-Tax Income Class	Current Consumption Expenditures		Average Annual Vacation-Related Lodging Expenditures	
	1972	1973	1972	1973
Under $3,000	3,040	3,367	$ 6.86	$ 7.29
3,000 to 3,999	3,939	4,231	9.09	9.22
4,000 to 4,999	4,588	4,681	10.42	20.47
5,000 to 5,999	5,134	5,159	13.66	14.07
6,000 to 6,999	5,590	5,559	15.24	13.10
7,000 to 7,999	6,095	6,195	18.73	17.67
8,000 to 9,999	6,833	6,828	26.80	23.55
10,000 to 11,999	7,643	7,798	32.55	32.20
12,000 to 14,999	8,905	8,765	40.55	42.61
15,000 to 19,999	10,245	10,383	66.21	53.33
20,000 to 24,999	12,056	12,542	110.78	75.20
25,000 and over	15,943	16,197	172.06	130.17

Source: Consumer Expenditure Survey Series: Interview Series, 1972 and 1973. U. S. Department of Labor Statistics, Report 455-3, U. S. Government Printing Office, 1976.

lowing regression model, using total annual consumption as the measure of income.

$$\log E_i = a + b \log C_i + \varepsilon_i \qquad (1)$$

where E_i = the average annual vacation-related lodging expenditure of the ith class
C_i = the average annual total expenditures for the ith income class
a = constant to be estimated
b = expenditure elasticity coefficient to be estimated
and ε_i = the random disturbance term.

Transforming the variable into log form changes the coefficient b into an elasticity coefficient.

An elasticity coefficient of less than one suggests that a tax levied on the consumption of lodging is regressive on average over the range of incomes reported. Conversely, a coefficient of greater than one suggests such a tax would be progressive on average over the range of incomes reported.

The regression results for 1972, 1973, and both years combined are presented below as equations 2, 3, and 4 respectively.

$$\log E_i = -6.57 + 2.09 \log C_i \quad R^2 = .97 \qquad (2)$$
$$(.09976)$$

$$\log E_i = -5.59 + 1.82 \log C_i \quad R^2 = .95 \qquad (3)$$
$$(.12656)$$

$$\log E_i = -6.09 + 1.96 \log C_i \quad R^2 = .96 \qquad (4)$$
$$(.08400)$$

Figures in parentheses are standard errors.

Tests of significance on the elasticity coefficients show the following:

Null Hypothesis	*1972 Data*	*1973 Data* (t- values)	*Both years combined*
Elasticity coefficient is zero	20.95	14.38	23.33
Elasticity coefficient is one	10.93	6.48	11.43

Row one shows that the test of the routine hypothesis that the elasticity coefficient is zero is rejected at the one percent level of significance. A more appropriate null hypothesis, however, may be that the elasticity coefficient is one, since we are interested in whether a room tax is likely to be progressive. The t- values in the second row indicates that the elasticity coefficients are significantly different from one at the one-percent level of significance.

The results generally conform to expectations: a room occupancy tax is likely to be progressive, with the extent of progressivity depending on the income concept.[8] Using consumption as a measure of income, the elasticity coefficient is approximately 2.00, or elastic. Although crude, these estimates suggest that a tax on hotel/motel occupancy would fall more heavily on those with a higher ability to pay, at least through the range of available data.

It should be noted that, within income classes, there may be wide variations in spending patterns. Thus, there may be much variation in the use of hotels and motels within a given income class which affects the individual's tax burden. Moreover, extending the conclusion of the likely progressivity of a room occupancy tax to a particular locality requires the assumption that local hotel and motel use is distributed over income classes similar to the national data.

The foregoing incidence analysis assumes that the elasticity of demand for hotel/motel rooms is perfectly inelastic such that the tax would be passed completely along to the consumer. This is the conventional view of proponents of the tax, such as the big-city visitors bureaus that often are partially funded by part of the tax receipts. Frequently, governments act on this implied assumption of perfectly inelastic demand as well, assuming that tax revenue will rise in the same proportion as the tax. This assumption may or may not be realistic. Ideally, a locality considering such a tax would need to derive estimates of the local elasticity of demand for hotel/motel rooms. In practice, however, estimating the demand equation for hotel/motel rooms is difficult. Theory suggests that the demand for hotel/motel rooms is a function of own price, price and availability of substitutes (such as camping), income, and the total volume of travel. Attempts by the authors to empirically estimate the demand function have been unsuccessful due to lack of adequate data. We anticipate further work in this direction.

Policy Implications

Most counties are faced with a continuing problem of inadequate revenues relative to expenditures for county services. Although some relief in recent years has been provided by federal revenue sharing, county governments are forced to increase existing tax rates or to look for new tax sources. Counties have traditionally relied heavily on property tax receipts, but face increased resistance from property owners when property taxes are raised. This paper has examined a hotel/motel room occupancy tax as a partial substitute, albeit small, to the property tax in a resort county. The presence of a large number of tourists in a resort is likely to be related to substantial external costs such as congestion and pollution that may be uncompensated. A hotel/motel room tax may provide a means of forcing the tourist industry to pay the full costs relating to tourist activity.

Many states have already authorized localities to levy a hotel/motel room occupancy tax. In a resort community, a room occupancy tax may have special appeal as a means of compensating local taxpayers, (especially those who do not participate in and benefit from the tourist

industry) for the costs imposed by the tourist flow. Tax incidence analysis indicates that a room occupancy tax is likely to be progressive, with the degree of progressivity dependent upon the measure of ability to pay used. In addition, the elasticity of demand for hotel/motel rooms is likely to be small when considering accommodations costs as a component of total vacation costs. Thus a room occupancy tax may raise a significant amount of revenue for the locality.

Any locality considering a hotel/motel room tax must make its own estimates of the costs and benefits associated with tourism. A proper balance must be struck between encouraging tourism as a desired local industry and taxing that industry sufficient to cover all related costs. Normative judgements will have to be made relative to the external costs imposed by tourists. If it is concluded that the tourist industry is not currently paying its way locally, a hotel/motel room occupancy tax may be the most appropriate form of additional taxation.

It should be noted that hotels and motels represent only one component of the tourism industry that could be taxed: other components include restaurants, service stations, gift shops, and tourist-related recreation and amusement firms. However, additional taxes on restaurants and service stations are likely to fall on many local residents, as well as tourists. Taxes on gift shops and tourist-related recreation and amusements are likely to fall primarily on tourists. Some localities are already levying an amusement tax. Many of the same arguments for a hotel/motel tax could be made for an amusement tax: viz., the elasticity of demand is likely to be low when considered as one component of the costs of a vacation package; plus, the tax incidence is likely to be progressive. An optimal tax strategy might include both a room occupancy tax and an amusement tax.

A border city (county) problem may result if there is a business loss to surrounding lower tax (or non tax) areas because of geographic tax differentials. However, given the special attractions of a resort area, and the unlikely availability of good substitutes, the border problem is likely to be small for tourist-related taxes.

FOOTNOTES

[1]See Musgrave (1959), p. 349.

[2]See Marshall (1920), pp. 383–386.

[3]Mikesell (1971).

[4]U.S. Department of Labor Statistics, *Consumer Expenditure Survey Series* (1976).

[5]Note that these conclusions cannot be extended to business travel. Available substitutes and reasons for travelling differ from that of vacationers. Also, travel is likely to appear as a large recurring expense to a business firm.

[6]Netzer (1966), p. 169.

[7]Davies and Black (1975).

[8]A similar regression was done using income before taxes as the measure of income. However, it was felt that consumption, as reported above, is the more appropriate measure.

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