Effects of Discriminatory Excise Taxes on Car Rentals

Unintentional Impacts on Minorities, Low Income Households, and Auto Purchases

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We have been asked to evaluate the effects of discriminatory car rental excise taxes on specific groups of customers; and on certain forms of economic activity related to the car rental industry. Our study focuses on short term rentals rather than long term leases. We describe excise taxes as discriminatory because they are not broad based levies (like a sales tax or income tax), but rather specifically target rental car customers.

To date, governments in 43 states and the District of Columbia have imposed 118 different excise taxes on car rentals in various jurisdictions—representing more than an eight-fold increase in the number of such taxes since 1990. Many additional excise tax proposals are currently pending across the country.

These taxes have proliferated because of the perception that (1) car renters are from out-of-town, (2) car renters can afford the extra tax; and (3) car rental excise taxes will only be paid by those renting a car.

We were asked by Enterprise Rent-A-Car to test the validity of these perceptions. Our findings show conclusively that each assertion is false, undercutting the primary rationale for imposing

such taxes. In addition, our research indicates that car rental excise taxes have many unintended consequences, including:

- A significant impact on low income populations
- A disproportionate impact on minority households
- A measurable reduction in the number of vehicles purchased by rental car companies.

More Car Rentals Occur at Neighborhood Locations than at Airport Locations

Whether it's a luxury car for a special occasion, a pick-up truck or cargo van for a project or a move, a larger car for a road trip, a replacement for a car that's being repaired, or a rental for one who chooses not to own a car for financial or environmental reasons, people rely on car rental or car sharing in their hometown every day. Yet, despite the number of car rentals taking place away from the airport, many assume most car rentals occur at the airport.

However, according to the January-February 2006 edition of *Auto Rental News*, the truth is that in the $18 billion U.S. rental-car industry, more revenue is generated by neighborhood-based locations than by airport locations. According to the report, the estimated total market revenue for 2004 was $17.6 billion, with home-city rental accounting for $9.5 billion (or 54 percent of the market) and airport approximately $8.1 billion (or 46 percent).

Yet this fact is lost on those promoting car rental taxes. For example, the former Mayor of Atlanta said of the proposed 3% per rental transaction tax, *"This financing plan is ideal. It allows us to keep the Hawks downtown without any burden on Atlanta residents."* It's not just Atlanta. When asked about its proposed rental car tax in 2006, the Mayor of Sandy Springs, a suburb North of Atlanta, said *"We're not raising any tax. I didn't think it would be a big deal most rentals are to visitors anyway."(sic)* In fact, using transactional data from the nation's largest provider of off-airport car rentals, we've found that in calendar year 2008 alone, Georgia residents renting a car in their hometown accounted for $1,870,866 in extra rental car taxes. The $1,870,866 in rental car taxes is in addition to the $4,591,490 in sales tax (average rate of 7% state & local combined) that was paid by these renters. This means local resident paid $6,462,356 in Georgia taxes on their car rentals in 2008 alone.

Lower Income Populations Pay a Large Share of Car Rental Excise Tax Payments

There is a commonly held misconception that car rental is a luxury reserved for the wealthiest individuals, and therefore the burden of discriminatory excise taxes does not impact lower income individuals. The data do not support this conclusion. In fact, results of our analysis of actual rental car transactions—summarized in Table 1—indicate that lower income households pay a significant share of rental car excise taxes. 19% of all such levies on retail rental transactions were paid by members of households earning under $50,000 per year—roughly the median income in 2008, the year in which these transactions occurred. Surprisingly, 7% of the total, or roughly three and a half million dollars was paid by households earning less than $25,000 per year—roughly the poverty line for a family of four. High income households—defined here as households earning more than $100,000 per year—pay only about half of all excise taxes.

Table 1

2008 Discriminatory Tax Payments
Associated With Home Based Retail Rentals
By Household Income Level and Census Region

Census Region	Less than $25,000	$25,000 to $49,999	$50,000 to $99,999	$100,000 or more	All Households
New England	$114,865	$178,978	$438,782	$1,066,259	$1,798,885
Middle Atlantic	$930,651	$1,332,927	$3,064,013	$7,852,357	$13,179,948
East North Central	$214,183	$318,597	$677,330	$1,293,874	$2,503,983
West North Central	$104,027	$181,835	$408,324	$749,550	$1,443,737
South Atlantic	$1,216,743	$1,967,267	$4,187,987	$8,926,658	$16,298,656
East South Central	$18,858	$27,107	$53,310	$87,995	$187,269
West South Central	$420,319	$611,010	$1,141,356	$2,092,645	$4,265,330
Mountain	$284,303	$513,709	$1,100,436	$1,996,239	$3,894,687
Pacific	$230,218	$404,573	$939,756	$2,006,017	$3,580,565
All Regions	$3,534,168	$5,536,003	$12,011,295	$26,071,595	$47,153,061
Percent of Total	7%	12%	25%	55%	
Cumulative Percent of Total	7%	19%	45%	100%	

These results are based upon a statistical analysis of the relative propensity to rent by income category. We related the number of rentals and rental days generated by residents of a ZIP code

area to data such as the demographic and socioeconomic makeup of the area; the level of discriminatory taxes in effect at rental locations serving the area; and other factors. Our analysis focused on rental transactions conducted at Enterprise locations near the renter's residence in which the renter pays the cost of the rental out-of-pocket. We computed discriminatory tax payments by low income households using a regression analysis that provided estimates of propensity to rent by income category. Details of this analysis are presented in the Appendix in Table A-1.

Using socioeconomic data provided by Claritas, we allocated the proportion of excise taxes paid by residents in a ZIP code area to households of various income categories residing in the ZIP code. This allocation was based upon the prevalence of each income category in the population of that ZIP code; and upon their propensity to rent, as measured by the regression model. We thus allocate to higher income households a share of discriminatory tax payments that appropriately reflect their greater propensity to rent.

Car Rental Excise Taxes Fall to a Disproportionate Extent on Minority Households

In analyzing the data about the impact of car rental excise taxes on low income populations, we also gained some important insights about how such taxes disproportionately affect minority households.

According to our analysis—summarized in Table 2— African Americans generate 26 percent of rental car revenues and pay 27 percent of the excise taxes assessed on retail car rentals, despite the fact that they account only for about 12 percent of the population.[1] Members of other minority groups pay 13 percent of the total such taxes nationwide, despite the fact that they represent only about 7 percent of the population. Hispanics account for another 12 percent of all excise taxes paid on retail car rentals. Caucasian households, despite the fact that they account for roughly two-thirds of the population, account for less than half of all such excise tax payments.

[1] In our study we included all individuals, regardless of race, who identified themselves as Hispanic within the Hispanic category. Thus, when we refer to African Americans, Caucasians and members of other minority groups, we are speaking only of the non-Hispanic members of these racial groups.

Table 2

Distribution of Population, Rental Demand and Discriminatory Tax Payments by Race/Ethnicity

	Race/Ethnic Group			
	Caucasian	**African American**	**Hispanic**	**Other Minorities**
Population	65%	12%	15%	7%
Rental Days	47%	26%	13%	14%
Rental Revenues	48%	26%	13%	14%
Discriminatory Tax Payments	48%	27%	12%	13%

In terms of actual dollars, the impact of these payments is significant. Total payments are summarized in Table 3. In 2008, African Americans paid approximately $13 million in excise taxes on their retail car rentals; Hispanics and members of other minority groups each paid about $6 million during that same period.

Table 3

2008 Discriminatory Tax Payments Associated With Home Based Retail Rentals By Race/Ethnicity

	Race/Ethnicity				
	Caucasian	**African American**	**Hispanic**	**Other Minorities**	**Total**
New England	$ 1,204,361	$ 243,749	$ 139,557	$ 211,420	$ 1,799,087
Middle Atlantic	$ 6,817,463	$ 3,173,148	$ 1,329,601	$ 1,859,970	$ 13,180,181
East North Central	$ 1,193,823	$ 773,713	$ 254,040	$ 282,441	$ 2,504,017
West North Central	$ 940,170	$ 249,016	$ 85,711	$ 168,864	$ 1,443,762
South Atlantic	$ 6,819,027	$ 5,988,879	$ 1,908,128	$ 1,583,001	$ 16,299,035
East South Central	$ 89,547	$ 80,886	$ 5,710	$ 11,127	$ 187,269
West South Central	$ 1,623,789	$ 1,432,801	$ 809,897	$ 398,907	$ 4,265,395
Mountain	$ 2,046,661	$ 467,519	$ 805,152	$ 575,364	$ 3,894,696
Pacific	$ 1,834,515	$ 409,365	$ 288,757	$ 1,048,067	$ 3,580,703
All Regions	$ 22,569,356	$ 12,819,075	$ 5,626,554	$ 6,139,161	$ 47,154,146
Percent of Total	48%	27%	12%	13%	

Using the example cited earlier in this report of the rental car taxes paid by local residents in Georgia, consider that $1,166,629 of the rental car taxes are paid by minorities, compared to only $704,237 paid by Caucasian residents. This is particularly significant because, in Georgia, minorities only comprise 34.6% of the population yet they are paying 62.4% of the taxes.

These figures were derived from the same statistical analysis described above. For the purposes of this analysis, we distinguished four racial/ethnic groups: Caucasian, African American, Hispanics and members of other races. (This "other" category includes Non-Hispanic individuals of Asian ancestry, Native Americans, and members of mixed races.) We then measured the propensity to rent for the latter three groups relative to Caucasian.

Working from these results, we used a two-step process to calculate the share of discriminatory excise taxes paid by members of minority households. First, we totaled the amount of excise tax payments made by residents in a ZIP code area. Second, we apportioned those payments among the four racial/ethnic groups, based on their share of overall rental car demand.

As summarized in Table 4**,** we learned that African Americans generate over four times as many retail rental transactions as otherwise comparable Caucasian. Hispanics and members of other races are substantially more likely to rent than Caucasian.[2] There are a variety of potential explanations for these results, including cultural differences, differences in household wealth, differences in auto ownership rates, or differences in the physical characteristics of the neighborhoods within which minority households reside. Regardless of the explanation, the association between the presence of minority households and the level of retail rental demand is strong and statistically significant.

[2] These results are based upon a statistical analysis of rental days.

Table 4

Relative Propensity to Rent by Race/Ethnicity

Race/Ethnicity	Propensity to Rent (Relative to Caucasians)
Caucasian	1.00
African American	4.29
Hispanic	1.37
Other Minorities	2.63

Source: Calculations based upon results shown in Table A-1.

Car Rental Excise Taxes Affect Auto Purchases

As we have seen, excise taxes inevitably increase the cost to consumers of renting automobiles. In turn, these increased costs decrease the demand for such rentals, reducing both the number of rental transactions completed, and the total number of rental days per transaction.

Companies such as Enterprise base their business models on achieving a certain amount of rental revenue to cover the cost of maintaining a vehicle in the rental fleet. As overall rental demand decreases, car rental companies must make a corresponding reduction in the size of their rental fleet, ultimately reducing the number of auto purchases these companies make each year.[3]

To quantify the effects of discriminatory excise taxes on new auto purchases, we relied on a variation of the regression analysis used for other parts of this study. We focused our analysis on home-city rentals, but in this case included all transaction types – not just retail rentals – in order to assess tax effects on total rental demand (and by extension, the impact on the overall rental car fleet). Detailed results of these analyses are shown in the Appendix in Table A-2.

[3] We recognize that the auto acquisition process for rental car companies is complex, and that a variety of different factors can influence the timing of decisions either to retire vehicle from the fleet or to purchase batches of new vehicles. Quite apart from these timing questions, however, it remains true that autos will be added to the fleet only if there is enough demand to support them.

Our analysis of home-city rentals identified a very specific correlation: a ten percent increase in excise taxes (relative to the base rental rate) reduced actual rental demand by approximately 11.5 percent. When we examined overall rental demand, ignoring the proximity of the rental location to the residence of the renter, we learned that demand is much more sensitive to the level of discriminatory excise taxes.[4] Based on our analysis, we believe that home-city rental transactions provide a more reliable depiction of the factors driving rental demand, so we based our conclusions on that set of results. In effect, we believe that results based on home-city rental transactions provide a conservative estimate of the impact on auto purchases for rental fleets.

By calculating the sensitivity of rental demand to discriminatory excise taxes, it is possible to compute how much additional demand would be generated if those taxes were eliminated. We developed this estimate by setting taxes to zero at all locations, and then recalculating the level of rental demand for all residential ZIP codes. Results of this calculation are shown in Table 6. Using this formula, we estimate that removal of discriminatory excise taxes would have increased rental demand by almost 8 million rental days—or 3.9 percent—at Enterprise in 2008.

Table 6

2008 Effects of Estimated Excise Taxes on Enterprise RAC Auto Purchases

2008 Enterprise RAC Rental Days	200,864,879	[1]
2008 Lost Rental Days Due to Effect of Rental Excise Taxes	7,912,812	[2]
Percetage Lost Days due to Rental Excise Taxes	3.9%	[3]
2008 Average fleet size	560,246	[4]
Annual loss in Enterprise RAC Auto Purchases	**22,070**	[5]

Notes:
[1]: Enterprise Holdings rental transaction data. (Transaction Types "Insurance" and "Body Shop" are included.)
[2]: *The Brattle Group* analysis.
[3] = [2] / [1]
[4]: 09/15/2009 Email from Client, RE: 2008 Fleet Info.
[5] = [3] x [4]

To support this 4.4 percent increase in demand would have required a corresponding increase in the size of the rental fleet – or the addition of 22,070 vehicles, based on the company's average domestic fleet size of 560,246 vehicles in 2008.

[4] See Appendix Table A-4.

To calculate the implications of this increase in rental demand for auto purchase, we first note that the company's average domestic fleet size in 2008 included 560,246 vehicles. On average, Enterprise expects to keep a vehicle in its fleet for about one year. This means that in order to maintain a fleet of 560,246 vehicles, Enterprise has to purchase 560,246 vehicles per year. We have assumed that in order to accommodate a 3.9 percent increase in rental days Enterprise would have to expand the size of its fleet by 3.9 percent, or 22,070 vehicles. To maintain this larger fleet Enterprise would therefore have to purchase an additional 22,070 vehicles per year.

The net impact: Discriminatory excise taxes on car rentals cause the loss of about 22,000 new vehicle sales into the Enterprise fleet every year.

Appendix

Technical Approach

Information We Relied Upon

We used empirical methods to statically analyze data on rental car demand; discriminatory tax levies; and other factors that contributed to our conclusions. Therefore, these results are based not just upon economic theory or opinion, but also upon a careful examination of the data from reliable sources.

ERAC rental car data

Rental car demand data for this analysis were provided by Enterprise Holdings, which also provided funding for this research. Specifically, Enterprise provided a computer file listing every car rental transaction conducted at one of the U.S. locations in calendar year 2008, the most recent year for which complete data were available.[5] Each transaction in this file listed the ZIP code for the residence of the renter, the Enterprise location at which the rental transaction took place, the starting and ending dates of the car rental, the base rental rate, the gross rental rate (including all surcharges and excise taxes), and the nature of the transaction.

Enterprise also provided a list of all of its rental locations. Among the information provided for each rental location were its geographic coordinates and an indication of whether it was associated with an airport. Using these geographic coordinates and information about ZIP code locations, we were able to compute the approximate distance from the renter's residence to the Enterprise location at which the rental was made.

[5] This file included only rental car transactions involving the Enterprise brand.

Claritas socioeconomic data

Our study also relied upon ZIP code level demographic data obtained from Claritas. These data described the population in each of the ZIP code regions in the United States as of 2008, providing detail about the households in each ZIP code – including race and household income.[6]

Discriminatory Excise Tax Data

Enterprise provided a listing of all excise taxes targeting car rentals currently in effect across the nation. This listing described the structure of each tax (e.g., fixed dollar charge per day, percentage of base rental amount, etc.), the transactions to which it applied (e.g., all rental transactions, all rental transactions except replacement transportation for autos undergoing repair, etc.), the political jurisdiction levying the tax (e.g., city, county, state or special authority), and the date on which the tax went into effect.

Careful analysis of the excise tax data allowed us to determine which taxes applied to each of the transactions in the Enterprise dataset. Using information on the effective date for each tax, we were able determine which taxes were in effect in 2008 – or, for those that took effect during that year, the portion of the year during which the tax was in effect.

Methodology

The Enterprise rental data did not include information about the race or income of the company's customers. To discern these attributes of the Enterprise customer base, we turned to the Claritas data, which described the income and the racial/ethnic composition of the neighborhoods from which Enterprise customers were drawn.

In using this Claritas data, we had to address the issue of differences across households in their propensity to rent. If members of all racial/ethnic groups in a neighborhood were equally likely to rent, one could simply "assign" to each customer the average racial/ethnic makeup of the ZIP code area in which he or she resided. In addition, any excise taxes paid by rental car customers

[6] The Claritas data were available only for residential zip codes. Some valid zip codes may contain no residents because of the makeup of the geographic area to which they apply. Others correspond to no specific geographic area, but rather to buildings or institutions. For example, the U.S. Postal Service assigns six zip codes to the Pentagon.

could be similarly assigned based on the proportion of the racial/ethnic groups residing in that ZIP code area. A similar assumption regarding the propensity to rent among households of different income levels would have provided a way to allocate excise tax payments by income level. However, there was no reason to expect that the relative propensity to rent would be the same across racial/ethnic groups or across income levels. (Indeed, we would expect households at different income levels to exhibit markedly different propensities to rent.) Failure to take such differences into account could lead to seriously distorted results.[7] Therefore, in order to use the Claritas data effectively, we needed to test differences across racial/ethnic groups and across income categories with respect to the propensity to rent.

To measure the impact of excise tax payments on rental transactions, we focused exclusively on transactions paid for by the renter (without reimbursement). This limited our analysis to two transaction types: "retail" and "other". For each transaction, we knew the Enterprise location at which the transaction took place and thus could identify which excise taxes (if any) were in effect at the location on the date of the transaction. We could also identify the form of the tax (i.e., flat fee or percent of base fee), the base rental rate, and what exclusions or caps might have been in effect. This provided the data needed to calculate the excise taxes associated with each transaction. We then added these payments together, to compute total excise tax payments by ZIP code area.

To allocate excise taxes paid by racial/ethnic group, we used the Claritas data to determine their prevalence in the population of that ZIP code; and applied the results of the regression model – summarized in Table 4 to reflect their greater propensity to rent.

To quantify the impact of discriminatory excise taxes on auto premiums, we needed a way to compute the total taxes levied on replacement transportation auto rentals. In the Enterprise data files, these rentals appear under two different transaction types: "insurance" and "body shop." In computing taxes associated with such transactions, care had to be taken to account for exemptions, since a number of jurisdictions exclude replacement transportation rentals from

[7] If, for example, high income households were much more likely to rent than low income households, the former would account for a much larger fraction of the rental coming out of an area than their share of the population taken by itself would suggest.

excise taxes they impose. Where such exemptions existed, we accounted for them in computing the total tax bill.

In order to measure the effects of discriminatory excise taxes on car purchases by rental companies, we needed to measure the extent to which such taxes suppressed rental car demand. This required more than a simple comparison between areas with such taxes and areas without them. Such areas might differ in any number of ways, including racial composition or income levels. To isolate the impact of discriminatory excise taxes, we must control for the effects of other demand factors.

To address all these various requirements in our study, we employed a regression analysis, a widely used technique for separating and measuring the individual effects of multiple causal factors. For this research, the causal factors of primary interest included the racial/ethnic composition of a ZIP code area, the household incomes in that area, and any applicable excise taxes (expressed as a percentage of the base rental rate). Our analysis also included a number of other causal factors, including population density,[8] and the season of the year in which the rental took pace. Using regression analysis, we were able to assign appropriate weights to all of these factors so that our formula would accurately predict the actual pattern of rental car demand.

For portions of the study, our analysis focused on home-city rentals, and in particular, on rental transactions conducted at non-airport locations located within twenty-five miles of the center of the ZIP code location within which the renter resided.[9] We focused on this subset of transactions in order to assure that we have a strong set of explanatory variables with which to explain variations in the basic level of rental car demand.

[8] Population density is strongly associated with auto ownership rates, and with the availability of other travel options such as buses, cabs or subways. It can thus be expected to influence auto rental demand in a variety of different ways.

[9] We defined this distance threshold based upon examination of the frequency distribution the distances from renter zip code centroids to Enterprise rental locations. There are many transactions for which the distance was less than twenty-five miles. Beyond that distance, the number of transactions tends to drop to a relatively low level. Our understanding based upon conversations with Enterprise personnel is that it is relatively uncommon for a home based renter to travel twenty-five miles to rent a car. We believe that the prevalence of such long-distance home-based transactions in the data is an artifact created by the fact that zip codes sometimes cover a large geographic area, and hence that a renter may be located much closer to the Enterprise location in question than the center of the zip code area.

Home-city rentals accounted for a large portion of overall rental car demand—totaling 80 percent of all U.S. Enterprise rental transactions conducted at non-airport locations, and 71 percent of all U.S. Enterprise transactions.

The results of our regression analysis of these "renter-pays" transactions is shown in Table A-1. The regression models take as their dependent variables the natural logarithm of rentals per capita and rental days per capita.

Although this table is fairly complex, several points about its contents are worth noting. First, it summarizes an analysis of a very large body of data. The line labeled "degrees of freedom" is roughly equivalent to the number of data points feeding into the analysis.[10] The data set used in the analysis includes over 80,000 observations, reflecting the rental demand observed in over 20,000 ZIP codes in each of four quarters. Second, the relatively small set of variables included in the analysis explains a significant amount of the overall variation in rental demand. The line labeled "R-Squared" represents the percentage of overall rental demand that can be explained by the variables included in the analysis. This value is equal to 32 percent for the model focusing on rental transactions, and approximately 31 percent for the analysis focusing on rental days. For a model of this nature, these figures reflect a high degree of explanatory power. Finally, the causal effects shown in Table A-1 are measured with a high degree of statistical reliability. The column labeled "T Statistic" contains measures of statistical reliability for each of the coefficients in the regression model. A value of two is generally regarded as representing an acceptable degree of statistical reliability. Most of the T statistics shown in Table A-1 are well in excess of this threshold value, indicating an extremely high degree of reliability.

For this study, we classified the population into four racial categories: Caucasian, African American, Hispanic and "other." The "other" category consists largely of individuals of Asian ancestry. It also includes Non-Hispanic Native Americans and individuals of mixed race. These results indicate that, all else equal, African Americans have a significantly greater propensity to rent than Caucasians. Individuals from other races are somewhat less likely to rent than African Americans, but are still more likely to rent than Caucasians.

[10] Technically, "degrees of freedom" is defined as the difference between the total number of data points used in the analysis, and the number of coefficients whose values the analysis is attempting to estimate. In the analyses summarize din Table 2 seventeen coefficients are being estimated.

Our results also indicate that there is a strong relationship between propensity to rent and household income. Not surprisingly, higher income households are generally more likely to rent than lower income households.

These results also indicate that discriminatory excise taxes significantly reduce rental car demand. As noted above, a ten percent increase in discriminatory taxes relative to the base rental rate will results in an 11.5 percent decline in the total number of rental days. See Table A-2 below. Focusing on "renter pays" transactions produces an even stronger effect. Specifically, our results imply that a ten percent increase in discriminatory taxes relative will results in a 19 percent decrease in the number of "renter pays" rentals and a 28 percent decline in the number of associated rental days. See Table A-1. These results have a high degree of statistical reliability.

Because the model takes the natural logarithm of rental demand as the dependent variable, we must exponentiate the estimated coefficients for the race and household income variables. Specifically, we calculate the relative propensity to rent by raising "e" (the base of the natural numbers – a mathematical constant roughly equal to 2.8) to a power equal to the estimated coefficients. There are no estimated coefficients for Caucasians. The implied coefficient for this demographic category is zero. Raising "e" to that power, we obtain 1.00, the value shown for the corresponding category in Table 4.

In order to calculate the effects of discriminatory excise taxes on overall rental demand, we need to consider their impact on all transactions types. For this purpose, we ran a regression analysis of home-city rental demand on a dataset that included all home-city rentals involving non-airport rental locations. Results of this analysis are shows in Table A-2. These results are broadly similar to those shown in Table A-1. Overall rental demand is somewhat less sensitive to excise taxes than retail demand.

Table A-3 shows the results of a regression analysis of all rental transactions conducted at non-airport locations, regardless of the distance between the rental location and the residence of the renter. Once again, these results are broadly similar to those discussed above. The estimated sensitivity of demand to taxes, however, is significantly greater.

Table A-4 summarizes our results on the effects that discriminatory excise taxes have on rental car demand. The numbers shown in this table represent the price elasticity of rental car demand, which is defined as the percentage change in demand associated with a one percent increase in discriminatory taxes, holding base rental rates constant. The table shows effects both on the number of rental transactions and the number of rental days. These results show that increases in discriminatory taxes not only reduce the number of rental transactions, but also reduce the number of days per transaction. The top panel shows results for home-based rentals, while the bottom panel shows results for all rentals at non-airport locations. Within each panel separate estimates are show for "renter pays" transactions and for all transactions. As one might expect, renter pays transactions are far more sensitive to tax increases than rental transactions in general.

Table A-1

Regression Results
Retail and Other Transactions
Non Airport Locations
Home Based Rentals

Degrees of Freedom	82,368		82,368	
Adjusted R-Squared	32.0%		30.7%	
Dependent Variable	**Log of Rentals per Capita**		**Log of Rental Days per Capita**	
Independent Variables				
Intercept	-7.5510	-130.4300	-6.2986	-6.2986
Propensity to Rent Relative to Caucasians				
African American	1.2718	67.4900	1.4560	67.0700
Hispanic	0.2208	11.4900	0.3159	14.2700
Other Minorities	0.8937	21.5500	0.9673	20.2500
Propensity to Rent Relative to Households Earning Less Than $15,000 per Year				
Household Income Level:				
$15,000 to $24,999	0.3838	2.4200	0.6827	3.7400
$25,000 to $34,999	0.5502	4.1100	0.7949	5.1600
$35,000 to $49,999	0.5264	4.9300	0.7600	6.1800
$50,000 to $74,999	1.0219	11.4600	1.1887	11.5700
$75,000 to $99,999	1.3456	10.9700	1.6348	11.5700
$100,000 to $149,999	1.6150	14.0700	2.1696	16.4100
$150,000 to $249,999	3.3059	22.4700	3.3014	19.4800
$250,000 to $499,999	3.1239	8.0200	3.2688	7.2900
$500,000 or more	0.5668	1.5800	1.7364	4.2100
Other Independent Variables				
Log of Population Density	0.1452	88.6000	0.1657	87.8100
Quarter Indicators				
Q1 relative to Q4	0.0119	1.5700	-0.0299	-3.4300
Q2 relative to Q4	0.1930	25.6500	0.1385	15.9800
Q3 relative to Q4	0.1367	18.1600	0.1087	12.5300
Log of Gross Daily Rental Rate Relative to Rate Net of Discriminatory taxes	**-1.9300**	**-21.0200**	**-2.7826**	**-26.3000**

Table A-2

Regression Results
All Transaction Types
Non Airport Locations
Home Based Rentals

Degrees of Freedom	88,620	
Adjusted R-Squared	29.3%	
Dependent Variable	**Log of Rental Days per Capita**	
Independent Variables		
Intercept	-4.2376	-74.3700
Propensity to Rent Relative to Caucasians		
African American	1.1279	58.7300
Hispanic	0.1835	9.2300
Other Minorities	-0.0193	-0.4500
Propensity to Rent Relative to Households Earning Less Than $15,000 per Year		
Household Income Level:		
$15,000 to $24,999	0.5854	3.8100
$25,000 to $34,999	-0.0559	-0.4300
$35,000 to $49,999	0.1219	1.1700
$50,000 to $74,999	0.7306	8.4000
$75,000 to $99,999	1.1239	9.3500
$100,000 to $149,999	2.4627	21.8300
$150,000 to $249,999	3.0218	21.0400
$250,000 to $499,999	1.0222	2.7500
$500,000 or more	2.3008	6.4300
Other Independent Variables		
Log of Population Density	0.1418	87.5400
Quarter Indicators		
Q1 relative to Q4	0.0418	5.4600
Q2 relative to Q4	-0.0147	-1.9100
Q3 relative to Q4	-0.0453	-5.9100
Log of Gross Daily Rental Rate Relative to Rate Net of Discriminatory taxes	**-1.1484**	**-14.8500**

Table A-3

Regression Results
All Transaction Types
Non Airport Locations

Degrees of Freedom	111,429	
Adjusted R-Squared	31.8%	
Dependent Variable	**Log of Rental Days per Capita**	
Independent Variables		
Intercept	-3.9960	-72.8200
Propensity to Rent Relative to Caucasians		
African American	1.3284	65.6200
Hispanic	0.3020	15.0700
Other Minorities	-0.7664	-24.0000
Propensity to Rent Relative to Households Earning Less Than $15,000 per Year		
Household Income Level:		
$15,000 to $24,999	0.3482	2.5000
$25,000 to $34,999	-0.4747	-3.8100
$35,000 to $49,999	-0.3612	-3.6100
$50,000 to $74,999	0.4688	5.6100
$75,000 to $99,999	1.2618	11.0000
$100,000 to $149,999	3.1561	28.5100
$150,000 to $249,999	2.4951	16.7800
$250,000 to $499,999	1.1203	2.9400
$500,000 or more	2.7145	7.1500
Other Independent Variables		
Log of Population Density	0.1514	105.9800
Quarter Indicators		
Q1 relative to Q4	0.0584	7.5300
Q2 relative to Q4	0.0098	1.2600
Q3 relative to Q4	-0.0151	-1.9500
Log of Gross Daily Rental Rate Relative to Rate Net of Discriminatory taxes	**-3.4203**	**-32.0900**

Table A-4

Price Elasticity of Rental Car Demand with Respect to Discriminatory Excise Taxes

Home-Based Rentals		
	# of Rentals	**# of Rental Days**
Customer Pay Transactions	-1.9300	-2.7826
All Transactions	-1.0355	-1.1484

All Rentals at Non-Airport Location		
	# of Rentals	**# of Rental Days**
Customer Pay Transactions	-2.0790	-3.2273
All Transactions	-2.5812	-3.4203