BlackEconomics.org®

Brief Working Paper

Are Black Americans Rational Economic Agents? The Case of General Sales and Property Taxes

by

Dr. Brooks Robinson

BlackEconomics.org

P.O. Box 884
Honolulu, HI 96830
www.BlackEconomics.org
BlackEconomics@BlackEconomics.org
BlackEconomics.bbr@gmail.com

Introduction

This "Brief Working Paper" poses a seemingly simple question: Are Black Americans Rational? Of course, the question is posed in an "economics" context. While the question may appear simple, economists will be the first to tell you that research designed to provide a logical and definitive answer will be complex. Therefore, we hasten to explain that the question and brief analytical research undertaken here only concerns rationality with respect to two types of taxes (general sales and property taxes) and is abbreviated in nature. In other words, we ask: Are Black Americans rational when it comes to general sales and property taxes?

From the outset the study of economics, especially microeconomics with an emphasis on consumer behavior, featured models that assume that consumers are rational (so-called *homo economicus*). John F. Muth was probably the first economist to explore rational behavior in macroeconomic models, but Robert Lucas popularized the concept during the 1970s.[1] Lucas' research concerned the rationality of economic agents in response to inflation, which remains an important topic today. Lucas concluded that economic agents are rational. Consequently, we initiated this research with the expectation of confirming that Black Americans are rational economic agents.

A side research purpose was to confirm the rationality of Black Americans living where we live. Recently, there has been much discussion about the second Great Black Migration from northern to southern US locations. A logical question is: Why the migration? When discussing the topic, the following two reasons have been given: (1) Blacks are migrating south to jobs—a solid economic reason; and (2) Blacks are migrating south to renew relationships with relatives and friends—a solid social reason.

We conjectured that there might be another economic reason for the southern migration. Namely that because Black American households enjoy less income and wealth than the "average" American household, we seek to optimize our disposable income (income less taxes) by locating to cities that have relatively lower general sales and property taxes.[2]

Consequently, we hypothesized an inverse relationship between sales tax rates and property tax amounts and: (1) The size of the Black populations in cities; (2) the age of cities (older cities have potentially grown to a larger size and may require higher levels of revenue—i.e., may operate a more onerous tax regime); and (3) southern versus northern locations. The latter hypothesis is based on the idea that Black Americans have chosen to migrate to southern cities, in part, because the latter impose less onerous tax regimes than northern cities.

Bottom Line Up Front.—Our analytical results are inconclusive. The data that were collected, and the models used, reveal only partial patterns of rationality.

Methodology

To conduct our analysis, we executed the following steps:[3]

- Identified the top 20 US cities according to Black American population size, ranked them accordingly, and classified

[1] See Robert E. Lucas, Jr. (1972), "Expectations and the Neutrality of Money," *Journal of Economic Theory*, Vol. 4 (April); pp. 103-24. Also see John F. Muth, (1961), "Rational Expectations and the Theory of Price Movements," *Econometrica*, Vol. 29, No. 3; pp. 315-35.

[2] We limited our research to general sales and property taxes because they are easy to identify and estimate versus income taxes, which can require complex computations.

[3] The data discussed in this section appear in an Appendix.

them as located in the south (1) or north (0).[4]

- Identified the current general sales (and use) tax rate for each of the 20 cities through Google searches, which pointed us to Avalara.com.[5]
- Collected data from the 20 cities or related counties on the property tax amount that would be assessed typically for 2022 on a hypothetical owner-occupied residential property with a market value of USD 500,000. We accounted for widely extended exemptions, such as a homestead exemption. This information was collected through telephone calls and/or through email message correspondence with relevant city/county officials.
- Identified the founding date of each of the 20 cities relative to 2022 using Google searches and estimated their age.
- Performed ordinary least squares linear regressions in EXCEL on two equations: (1) Regressed sales tax rates on the natural logarithms of the cities' Black populations and ages, and their locations; and (2) regressed the natural logarithms of the cities' estimated property tax amounts on the natural logarithms of cities' Black populations and ages, and their locations. Both regressions included intercept terms.

Analytical Results

Table 1.—Regression Results

Variables	Regressands	
	General Sales (and Use) Tax Rates	ln of Property Tax Amounts
	Coefficients and [P-Values]	
Intercept	0.1221	9.473*
	[0.200]	[0.011]
ln of Cities' Black Population	0.0045	0.258
	[0.425]	[0.205]
ln of Cities' Age	-0.0181	-0.695
	[0.230]	[0.200]
Cities' Location (1, Southern; Northern 0)	0.0046	-0.290
	[0.556]	[0.306]
N	20	20
DF	16	16
R-Square	0.1787	0.1681
Adjusted R-Square	0.0247	0.0121
F-Statistic	1.1604	1.0775

*--Statistically significant at the 5.0 percent level

Table 1 presents the regression results. First, we emphasize that both regressions reflect little explanatory power as signaled by the R-square and F-Statistic. Besides the coefficient for the intercept term for the property tax regression, these regressions have no coefficients that are statistically significant from zero at the five percent level.

[4] These cities were identified by multiplying the populations of the largest US cities in the US by the Black American alone percentage. The data are from the US Census Bureau's 2020 US Census (https://www.census.gov/quickfacts/fact/table/US/PST045221 (Ret 022122). Newark, NJ is excluded.

[5] www.Avalara.com is an Internet website that collects and presents US cities' general sales (and use) tax information to assist businesses in remaining tax compliant.

Considering the general sales tax regression, although the results are not statistically significant, we find that coefficients for cities' Black population size and southern locations are positively associated with general sales tax rates, which is countervailing to our hypotheses. We will return to the latter result below. However, the coefficient for the cities' age is inversely related to general sales tax rates, which is consistent with our hypothesis.

As for the property tax regression, as already indicated, only the coefficient for the intercept is statistically significant. However, considering the coefficients for the three remaining regressors, we find that property taxes are positively associated with the size of cities' Black populations, which is inconsistent with our hypothesis. Consistent with our hypotheses, property taxes are inversely related to cities' age and southern locations.

These results hint that Black Americans appear to reflect partial rational behavior with respect to the general sales tax and property taxes. Coefficients for one of the regressors in the general sales tax equation and two coefficients for regressors in the property tax equation are consistent with our hypotheses. These equations would have likely reflected more rational behavior on the part of Black Americans had we collected data for, and performed, an intertemporal analysis—to examine behavior over time. As a point of explanation across the two regressions, we find that southern locations are associated with lower property taxes relative to northern locations (see the property tax regression results). Given lower revenue from property taxes, southern locations may find it necessary to impose higher general sales taxes, which appears to be consistent with the general sales tax regression results. This is the point that we promised to return to above.

Notably, no efforts were made to correct the regression models for violation of statistical normality (i.e., heteroscedasticity).

Discussion

Considering that the data used for this analysis are somewhat scanty (in scope and volume), the results likely reflect some bias, inconsistency, and inefficiency. Clearly, we have not identified all variables that contribute to Black Americans' decision to reside where we reside, and although we surmise that taxes influence such a decision, we have not collected data on all types of taxes imposed by cities. Nevertheless, the regression results provide "hint" answers concerning the questions under consideration.

A key point that should not be ignored is that, while all consumers face general sales taxes, most Black Americans do not face residential property taxes directly. The US Census Bureau reports that only 43.1 percent of Black households were of the home owning variety during the fourth quarter of 2021.[6] Therefore, our property tax analysis should be viewed in this light. On the other hand, assuming rationality, Black Americans would account for property taxes that are passed on to them by landlords as part of their decision calculus.

Conclusion

This analysis cannot conclude definitively whether Black Americans behave as rational economic agents with respect to taxes. Partial rational relationships are signaled in both regression equations. Frankly, the scope and volume of our data, our regression models, and our regression results are insufficient to provide definitive answers on the questions under consideration. But the research performed here provides hints concerning these important questions. The questions are worthy of more expansive and rigorous research so that we can confirm definitively that Black Americans are rational and make every effort to optimize our disposable income and increase our overall well-being. We invite other researchers to this labor.

[6] See the US Department of Commerce, Bureau of the Census, "Quarterly Residential Vacancies and Homeownership, Fourth Quarter 2021;" currenthvspress.pdf (census.gov) (Ret. 030322).

Appendix.—Source Data Used for the Analyses

Line No.	Cities	2020 Black Populations	2022 General Sales (and Use) Tax Rates	2022 Property Tax Amounts (US $s)	Founding Year	Southern(1), Northern (0) Locations
1	New York, NY	2,139,418	0.0888	5,989	1624	0
2	Chicago, IL	812,931	0.1025	10,276	1833	0
3	Philadelphia, PA	675,199	0.0800	6,999	1682	0
4	Houston, TX	520,835	0.0825	8,364	1837	1
5	Detroit, MI	500,424	0.0600	17,556	1701	0
6	Memphis, TN	405,820	0.0975	7,704	1819	1
7	Baltimore, MD	365,482	0.0600	11,750	1729	0
8	Los Angeles, CA	346,988	0.1025	6,863	1781	0
9	Washington, DC	319,259	0.0600	3,581	1790	0
10	Dallas, TX	316,964	0.0825	10,085	1841	1
11	Charlotte, NC	307,852	0.0725	3,085	1768	1
12	Jacksonville, FL	294,379	0.0750	8,115	1822	1
13	Columbus, OH	262,667	0.0750	10,150	1812	0
14	Atlanta, GA	254,345	0.0890	6,612	1847	1
15	Indianapolis, IN	253,866	0.0700	5,082	1821	0
16	New Orleans, LA	228,478	0.0945	6,100	1718	1
17	Cleveland, OH	181,841	0.0800	13,065	1796	0
18	Boston, MA	170,263	0.0625	2,135	1630	0
19	Birmingham, AL	140,312	0.1000	3,577	1871	1
20	St. Louis, MO	139,932	0.0968	7,869	1764	0

B Robinson
030322

--