PROPERTY TAX HOMESTEAD EXEMPTIONS: AN ANALYSIS OF THE VARIANCE IN TAKE-UP RATES ACROSS NEIGHBORHOODS

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Hundreds of thousands of homeowners eligible for Florida's homestead exemption fail to claim it, losing out on significant property tax savings. Large differences exist in take-up percentages across neighborhoods. This paper relates these differences to a wide range of neighborhood descriptors. Take-up rates are lower where incomes are lower and a higher percentage of residents are from minority groups. Take-up rates are also correlated with neighborhood characteristics that may register knowledge of the exemption and transaction costs incurred in applying for the exemption.

I. INTRODUCTION

Property tax homestead exemptions are available in more than 40 states (Institute on Taxation and Economics Policy, 2011). These exemptions reduce the assessed value of a home that is subject to taxation. In addition to other exemptions, such as those for people with disabilities, senior citizens, and veterans, a homestead exemption also determines eligibility for caps on the amount the assessed value can increase each year in some states, such as Florida and California. To qualify for a homestead exemption, the home must be the owner's permanent residence. Homeowners must apply for the exemption and therefore take-up may be less than 100 percent, opening up the possibility that a substantial number of eligible homeowners may lose out on significant tax savings. This paper contributes to the literature on the distribution of tax incidence and, in particular, that related to property taxes by

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providing the first measure of the take-up rate of the homestead exemption in Florida along with empirical evidence on an array of neighborhood characteristics correlated with take-up rates.[1]

Florida's homestead exemption provides substantial tax savings to eligible homeowners. To obtain the homestead exemption the property owner must make an application and provide proof of permanent residency at the home address.[2] Using the 2017 property tax rolls for all of Florida's 67 counties, I identify whether or not a property was granted a property tax homestead exemption, the physical address of the home, and the homeowner's billing address. If the latter two addresses match and there is a homestead exemption, I categorize the homeowner as a claimant; if the addresses match and there is no homestead exemption, the homeowner is a nonclaimant. The take-up rate is computed for the neighborhood (defined as the census block group) as the ratio of single-family homeowners who take the exemption divided by the number of homeowners who are eligible, where the latter are all homeowners whose mailing and physical addresses are identical.[3] Take-up rates are estimated for 10,373 Florida neighborhoods for the year 2017.

The rational homeowner who is eligible for the homestead exemption will claim it if (1) the homeowner is aware of the existence of the exemption and (2) given awareness, the benefit exceeds the transaction costs incurred in applying for the exemption. The benefit is the savings in property taxes that come from both a cap on the growth in assessed value and the exemption. For most homeowners the exemption would lower the assessed value of their home for tax purposes by $50,000. Transaction costs consist of both time and out-of-pocket expenses.[4] My goal is to identify neighborhoods, based on their characteristics, where the take-up rate is significantly different than elsewhere. The characteristics include the race/ethnicity and income of the neighborhood residents and variables ostensibly related to transaction costs and knowledge of the exemption. By regressing the take-up

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[1] The incidence of the property tax has long been of interest to academicians and policy makers. As summarized in Fullerton and Metcalf (2002) and Oates and Fischel (2016), economists have long debated the theoretical incidence of the property tax. Efforts to provide empirical evidence on the incidence of property taxes have largely focused on how various policies affect the estimated progressivity or regressivity of the property tax. A review of these studies is provided by McMillen and Singh (2020). More recent papers have focused on racial disparities in property taxation. See, e.g., Atuahene and Berry (2019) on property tax foreclosures and Avenancio-Leon and Howard (2020) on property tax assessments. As explored in the current paper, the take-up of the homestead exemption has relevance to both the income and race/ethnicity incidence of the tax.

[2] The documents required to prove residency vary across counties and may include a Florida vehicle license plate number, a Florida voter registration number, declaration of domicile and residency date, name of current employer, address listed on the applicant's last Internal Revenue Service (IRS) return, dependent children's school location(s), bank statement and checking account mailing address, and proof of payment of utilities at the homestead address.

[3] Possible limitations of my measure of the homestead exemption take-up rate are discussed in Section III.

[4] Unlike many social programs, there are no stigma costs associated with receiving the homestead exemption.

rate on the racial and income composition of the neighborhood with and without covariates, I explore whether lower take-up rates in minority and low-income neighborhoods are attributable to correlations between these neighborhoods and the variables measuring transaction costs and knowledge of the exemption within the neighborhood. For example, a finding that take-up is lower in neighborhoods with higher percentages of Blacks may be because within these neighborhoods transaction costs are higher for filing an application or there is less collective knowledge of the exemption's existence. Comparisons of the take-up rate among neighborhoods with different race/ethnicity mixes or income levels may vary with measures of transaction costs and knowledge of the exemption. Among the latter variables are the policies of the property tax assessor's office within the county where the neighborhood is located.[5] These factors are the method of application, whether the office practices community outreach publicizing the existence of the exemption, and the number of locations within the county where an application for the exemption can be filed. The methods of application are (1) application online at the property assessor's website, in person at an assessor's office, or by mail, (2) application only allowed in person at an assessor's office, and (3) application by either mail or in person. A key issue is whether differences in take-up correlations between majority white and majority Black neighborhoods are larger in counties with online applications in comparison with counties where applications must be mailed or filed in person at the assessor's office. Interest in this question stems from the fact that most neighborhoods in Florida are located in counties that allow online applications and Black homeowners may have inferior access to the internet. To explore differences in the take-up rate between minority and white as well as between low-income and high-income neighborhoods conditional on the policies of the tax assessor's office, interaction models are estimated. One outcome of the interaction models is a comparison of take-up rates between two neighborhoods, a majority Black (Hispanic) and a majority white neighborhood within counties allowing online applications, controlling for the level of high-speed internet coverage within the neighborhood.

My results show that in 2017 the take-up rate among Florida's single-family eligible homeowners is 90.8 percent, which represents approximately 291,332 homeowners missing out on the tax savings from failing to apply for the exemption. The take-up rate is higher in neighborhoods with higher values of variables reasonably correlated with lower transaction costs and knowledge of the exemption. Among these variables are the age and education of homeowners, measures of possible knowledge diffusion of the exemption among homeowners, and the policies of the property assessor's office within the county where the neighborhood is located. Regarding the latter, the take-up rate is higher within neighborhoods where applications are allowed online or by mail in comparison with requiring an office visit. It is also

[5] In Florida the property assessor (officially known as the property appraiser) is an elected county officer serving a four-year term, as established by Article VIII of the Constitution of the State of Florida. Duties include determining the value of all property within the county, maintaining property ownership records and parcel ownership maps, and administering the homestead exemption.

higher if the assessor makes a greater effort to publicize the exemption and where there are multiple office locations for filing an application. The take-up rate is lower in neighborhoods where Blacks and Hispanics are a larger share of the population and in lower-income neighborhoods, even after controlling for the variables related to transaction costs and knowledge of the exemption.[6] However, the interaction results show that the race/ethnicity and income correlations with the take-up rate depend on the policies of the county tax assessor. A key finding is that negative correlations between the take-up rate and neighborhoods that are majority Black or Hispanic or low income are markedly higher for neighborhoods within counties with online applications.

II. BACKROUND AND LITERATURE REVIEW

   According to Florida Statute 196.031, the homestead exemption is available to "[a] person who, on January 1st, has the legal title or beneficial title to real property in [Florida] and who in good faith makes the property his or her permanent residence or the permanent residence of another or others legally or naturally dependent upon him or her" (2018 Florida Statutes, Title XIV, Chapter 196, Section 031). The origins of Florida's property tax homestead exemption trace back to the Great Depression, when many Florida property owners found themselves unable to pay their property taxes and feared losing their homes. In response to this problem, voters approved a $5,000 homestead exemption as an amendment to the Florida Constitution in 1934. The exemption has been raised three times. The Florida Legislature increased the exemption to $10,000 during the 1960s, and it was raised by a referendum of the voters twice since then, to $25,000 in 1980 and to $50,000 in 2008. A $25,000 exemption is applied to the first $50,000 of a homeowner's assessed value if the property is the homeowner's permanent residence and the property is owned on January 1 of the tax year. This exemption applies to all taxes, including school district taxes. An additional exemption of up to $25,000 is applied if the property's assessed value is between at least $50,000 and $75,000. This exemption is not applied to school district taxes. Generally, depending on millage rates, a homestead exemption will save the homeowner between $800 and $1,200 in annual property taxes. A homestead exemption also entitles the homeowner to the "Save Our Homes" (SOH) assessment limitation, which was passed by voters as an amendment to the Florida Constitution in 1992 and went into effect in 1995. According to the Florida Department of Revenue (FDOR) (floridarevenue.com), SOH works as follows: "after the first year a home receives a homestead exemption and the property assessor assesses it at fair market value, the assessment for each following year cannot increase more than 3 percent or the percent change in the Consumer Price Index, whichever is less" (Save Our Homes Assessment Limitation and Portability Transfer, Florida Department of Revenue, 1).

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[6] Possible explanations for take-up correlations with the race/ethnicity and income of the neighborhood conditional on other variables are presented in Section V.B.

Currie (2006) notes in her review of the literature on the take-up of social programs it is not surprising that take-up rates tend to be low when participation is not automatic. While low rates are the rule (Dickert-Conlin, Fitzpatrick, and Hanson, 2005), there are exceptions. For example, Scholz (1994) estimates 80–86 percent of households eligible for the Earned Income Tax Credit are recipients. Dickert-Conlin, Fitzpatrick, and Hanson (2005) conclude that low take-up rates are frequently associated with lack of knowledge of the program or its specific benefits. Lack of knowledge can explain low take-up not only for households but also for employers who may be ignorant of programs targeted to them (Hanson, 2011). If there is knowledge of the program and eligibility requirements are satisfied, participation boils down to a comparison of benefits and costs. Benefits in most cases are cash payments or tax savings and costs include transaction and stigma costs.[7] Two studies on the effectiveness of outreach are Finkelstein and Notowidigdo (2019) in their study of the Supplemental Nutrition Assistance Program (SNAP) and Aizer (2003) in her study of Medicaid. Both studies find strong correlations between outreach and enrollment.

Of particular interest is whether lower take-up rates in minority and low-income neighborhoods are correlated with internet access within the neighborhood. Turner (2016) documents the racial divide in broadband usage using the US Census Bureau's July 2015 Current Population Survey (CPS) Computer and Internet Use Supplement and the Federal Communication Commission's (FCC) Form 477 Broadband Deployment Data. His key findings from the CPS national sample of 53,000 households illustrate persistent broadband adoption and deployment gaps for people of different races and ethnicities, even after controlling for income, education, age, and other factors. His analysis of the FCC data, which is based on each internet service provider's (ISP) reporting of its coverage at the block level, shows that in comparison with white neighborhoods, Black and Hispanic neighborhoods are less likely to have any internet provider and, when they do have a provider, it is more likely to enjoy a monopoly advantage. He attributes the racial/ethnic digital divide to three factors: limited choice (i.e., living in a neighborhood with no service or a monopoly service), the unaffordability of the service, and the ISP's requirement of minimum credit scores and cash deposits for obtaining service. Further evidence of the digital divide by neighborhood income and race is provided by Smith (2014) and Tomer, Kneebone, and Shivaram (2017).

McMillen and Singh (2020) and Ihlanfeldt and Rodgers (2020) study the role that the homestead exemption plays in affecting the progressivity of the property tax. Homestead exemptions are intended to reduce the property tax burden of lower-income homeowners. Because assessment rates tend to be lower for higher-priced homes, the opposing effects of exemptions and regressive assessments can result in either a regressive or progressive property tax. McMillen and Singh (2020) find for Philadelphia, Pennsylvania, that the homestead exemption is not sufficient to offset regressive

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[7] Currie's (2006, 2) assessment of stigma costs is that "other, more concrete types of transaction costs are probably a good deal more important."

assessment, rendering the property tax regressive. They assume a 100 percent take-up rate. In contrast to McMillen and Singh (2020), Ihlanfeldt and Rogers (2020) find that for the vast majority of counties in Florida the positive effect of the exemption on progressivity more than offsets the negative effect from regressive assessment, suggesting that the property tax is a progressive tax. Unlike McMillen and Singh (2020), Ihlanfeldt and Rodgers (2020) do not assume 100 percent take-up and show that moving from current incomplete take-up rates to full take-up would increase the progressivity of the property tax across counties by an average of 10 percent.

III. VARIABLE CREATION AND DATA SOURCES

Florida statutes require that each county submit its property tax roll in a standardized format annually to the FDOR. The tax rolls are used by the FDOR to monitor the performance of the 67 county tax assessors. I use the tax rolls for 2017 to estimate the percentage of eligible single-family homeowners who claim the homestead exemption. As noted above, I identify a homeowner as eligible for the exemption if the physical address of the property is the same as the billing address of the homeowner.

There is the possibility that some homeowners who fail to take the homestead exemption and have identical physical and billing addresses are not eligible for the exemption because the home is not their primary residence. For example, the home could be a second home or a rental. However, this would mean that the property tax bill is not being sent to the owner's permanent location, which diminishes this possibility.[8] Reliably measuring take-up with my measure may be more of a problem with owners of condominiums because second homes in Florida largely fall into this category. For this reason, I exclude condominiums from my analysis.[9] To further ensure that I am not misidentifying eligible homeowners, I include controls for neighborhood characteristics that may proxy for a higher incidence of single-family homes that are more likely to be secondary homes. These are the number of condominiums and the number of vacant housing units that are for seasonal, recreational, or occasional use. Condominiums have many seasonal residents, so it is possible that they are in neighborhoods where single-family homes also are occupied by seasonal residents. The number of condominiums for each block group are from the county tax rolls. Block group counts of the number of vacant housing units that are for seasonal, recreational, or occasional use are from the 2013–2017 American Community Survey 5-Year Estimates.

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[8] Landlords are especially unlikely to have their property tax bills delivered to their rental address, so I am confident that my method of measuring the take-up rate excludes rentals.

[9] From an aggregation of the tax rolls for all 67 counties, I determine that for 55 percent of all condominiums in the state there is a difference between the address of the condo and the mailing address of the owner. Of these 85 percent are located in coastal counties. My decision to exclude condominiums is supported by my finding that among condominium owners having matching addresses, my estimated take-up rate is only 71 percent, suggesting that for many of these owners the condominium may not be their primary residence. However, the low take-up rate of condominium in comparison to single-family owners may also reflect differences in the net benefit from applying.

Because counties may require processing time in granting the exemption after an application has been filed, I guard against wrongly classifying eligible homeowners as nonclaimants by excluding homes purchased in years 2016 and 2017. While I am most concerned about overstating the number of nonclaimants (i.e., understating the take-up rate), there is also the possibility that some homeowners may claim the homestead exemption who are not eligible because the home is not their primary residence. In Florida, the penalties for fraudulently claiming the homestead exemption are severe. Owners who intentionally cheat on claiming the homestead exemption and are caught have a tax lien placed against their properties and are required to cover evaded property tax liabilities for up to 10 years and to pay a substantial penalty (50 percent of the unpaid taxes for each year) and an interest rate of 15 percent per year (Florida Statutes, Sections 193.155 [9] and 196.161). Through their websites and the media, Florida property assessors encourage people to anonymously report possible homestead fraud and promise an investigation. Besides tips, counties uncover fraud by checking rentals on Craigslist, investigating death records, and monitoring returned mail and utility records. Some of the larger counties have staff dedicated to fraud investigation and some also employ third-party collection services (Johnston, 2019). Placing liens on homeowners who illegally claim the homestead exemption has significantly bolstered tax rolls in recent years.[10]

Transaction costs and, therefore, take-up rates may be associated with the method of application. Applying online would involve minimal time costs, but only if the homeowner has easy access to the internet, owns the necessary computer equipment, and is knowledgeable in the use of a computer. The latter requires the ability to upload documents showing proof of residency. Time costs may be higher if an application is filed by mail. The homeowner obtains forms from the assessor's office and mails completed forms and residency documentation to the office. Filing in person involves both time and out-of-pocket costs, at least among homeowners who travel by vehicle to the assessor's office. I use the web pages from Florida's 67 county assessors' offices to parameterize the method of application.

Because online applications depend on access to the internet, I further divide online applications by the level of high-speed broadband coverage within the neighborhood. Internet coverage is measured using data from the FCC Form 477 for December 2016. Form 477 requires broadband internet providers to file lists of the census blocks in which they can or do offer service to at least one location, with additional information about the service. The FCC data show that some internet is available at the block level in almost all Florida neighborhoods, but this is not the case with

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[10] Bauerlein, David, "Duval County Takes Aim at Homestead Exemption Cheats," *The Florida Times Union*, September 3, 2015, https://www.jacksonville.com/article/20150903/NEWS/801252466. Many examples of the high returns realized by county tax assessors who uncover fraudulent claims are reported in media outlets. Some examples are (1) Duval County in 2017 processed 2,300 fraudulent claims that resulted in $8 million of additional tax revenue, (2) Volusia County added $44 million to its tax roll over the years 2006–2015, and (3) Orange County added $550 million to its tax roll in 2016 (Erb, 2016; Salman, 2016; Johnston, 2019).

"high-speed" internet. For example, 98 percent of the neighborhoods located in counties with online application have download internet speeds of 15 megabits per second (Mbps) or higher for all blocks in the neighborhood. However, only 50 percent of the neighborhoods have all blocks with download speeds of 30 Mbps or higher. Neighborhoods in counties allowing online methods of applications are separated into those with high-, medium-, and low high-speed internet coverage. High-, medium-, and low-speed coverage neighborhoods are defined as having 75 percent or more, from 50 to 74 percent, and less than 50 percent of the blocks in the neighborhood with coverage, respectively. The ability to file an application online depends on whether this is allowed by the assessor and the availability of internet within the home neighborhood. I create three dummy variables for neighborhoods located in counties allowing online methods of applications, indicating high-, medium-, or low-speed internet coverage within the neighborhood. A fourth dummy variable indicates the method of application is only by mail or in person. The reference category is an application requiring an office visit.

The web pages also document the number of office locations, which may affect the travel costs incurred in making an in-person application. From this information I create a continuous variable of the number of offices, which ranges between one and five, and a dummy variable equaling one if the county has more than a single office. The variables are alternatively used (not together) in my correlation analyses.

The benefit/cost decision calculus only has an impact on take-up among homeowners who are aware of the existence of the homestead exemption. A lack of knowledge of the program frequently explains low take-up of social programs. In addition to the method of application and the number of office locations, the assessor's web page enabled me to construct a dummy variable indicating whether the assessor's office conducted outreach publicizing the existence of the exemption (yes = 1). The deadline for submitting an application is March 1 of the tax roll year. I visited websites in February on the assumption that if the assessor were conducting outreach it would be advertised at that time. Outreach includes activities such as office staff meeting with church and community groups, which may not always be advertised. Nevertheless, because the assessors are elected and not appointed, political capital theory suggests that major outreach efforts would appear on their websites.

Knowledge of the existence of the exemption may also depend on neighborhood social capital, which refers to networks that link individuals and the resources embedded in those linkages. Places within the neighborhood that expand social interactions are found to increase social capital by facilitating the diffusion of information (Beyerlein and Hipp, 2005; Jones and Shen, 2014). Chetty, Friedman, and Saez (2013) provide evidence that knowledge diffusion from one individual to others occurs within neighborhoods. Hence, take-up may be correlated with neighborhoods having these places. From the property tax rolls, I count for each block group two types (groupings) of nonresidential properties where neighborhood residents may gather and exchange information on the existence of the homestead exemption: churches and meeting places, where the latter include restaurants (other than fast-food restaurants),

nightclubs/cocktail lounges/bars, and clubs/lodges/union halls. The number of churches and meeting places per homeowner in the neighborhood are the variables used in my analysis.

Diffusion of information and, therefore, general knowledge of the homestead exemption may also be higher in neighborhoods with larger numbers and greater density (per land area) of homeowners. Within these neighborhoods the chance of an individual homeowner interacting with another homeowner who is aware of the existence of the homestead exemption is greater. Moreover, homeowners within these neighborhoods are more likely to be members of homeowner associations, which can serve as a conduit for sharing information. Another neighborhood characteristic that may be associated with knowledge of the exemption is homeowner age. With age comes knowledge; hence, a neighborhood where the average age of homeowners is higher may have a higher take-up rate. In addition, older homeowners are more likely retired and therefore have a lower opportunity cost of making an application. However, older homeowners may find it more difficult to apply for the exemption if an application requires making a trip to the assessor's office. Older homeowners may also be less adept at making online applications, as they may have less familiarity with the internet (Turner, 2016). The ages of homeowners in the neighborhood are alternatively measured as their average age and as the percentages who are 35–60 and above 60. The data from the 2013–2017 American Community Survey 5-Year Estimates for block groups are used to obtain the number, density, and age of homeowners within the neighborhood.

Finally, higher levels of educational attainment may correlate with greater knowledge of the exemption and lower transaction costs. More educated homeowners may be more internet savvy and the existence of the exemption is advertised via social media. Transaction costs may be lower if educational attainment makes applying for the exemption less of an "ordeal" (Finkelstein and Notowidigdo, 2019). My three education groups are the percentages of adults residing in the neighborhood (minimum age of 25) whose final educational achievement is a high school degree, a college degree, and a postcollege degree, with the excluded category the percentage without a high school diploma. I alternatively measure educational attainment as the average years of schooling of adults.

The race/ethnicity of the neighborhood is measured by two dummy variables indicating whether a majority of the residents are non-Hispanic Blacks or Hispanics, with the reference group being a majority non-Hispanic white neighborhood. Neighborhood income is measured by two dummy variables identifying middle- and high-income neighborhoods, with the reference group being a low-income neighborhood. Groups designated as low, middle, and high income have median household income of less than $40,000, more than $40,000 but less than $60,000, and more than $60,000, respectively.[11] Alternative measures of the race/ethnicity and income of neighborhood

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[11]   The income cutoffs roughly divide the distribution of neighborhood median household incomes into terciles.
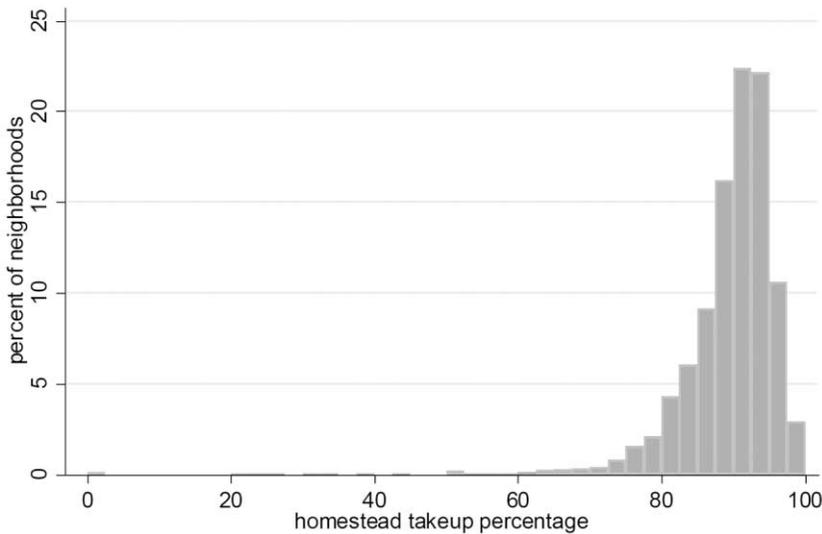
Figure 1. Distribution of neighborhoods by homestead take-up percentage. Figure shows a histogram displaying the distribution of homestead exemption take-up rates across neighborhoods.

residents are continuous variables — namely, the percentage of residents who are non-Hispanic Blacks and Hispanics and median household income, respectively. The source of data for all of the neighborhood descriptors is the 2013–2017 American Community Survey 5-Year Estimates for block groups.

IV. DESCRIPTIVE STATISTICS

For all eligible homeowners in the state of Florida, I estimate a homestead exemption take-up rate of 90.8 percent. This number is high relative to most of the take-up rates reported in the literature for social programs but is comparable with the take-up rates reported in some of the studies of the Earned Income Tax Credit (Dickert-Conlin, Fitzpatrick, and Hanson, 2005). Nevertheless, it represents approximately 291,332 Florida homeowners who are missing out on the tax savings provided by the exemption and the SOH assessment cap. Figure 1 shows a histogram displaying the distribution of take-up rates across neighborhoods. Most neighborhoods have rates within a range of 85–95 percent, with the highest frequency at 90 percent. However, 15 percent of the neighborhoods have rates less than 85 percent.

Means and standard deviations reported in Table 1 are for the 10,373 neighborhoods (block groups) used in this study. Paralleling the state percentage (90.8 percent), the neighborhood mean take-up rate for single-family homeowners is 89.5 percent. Most of the neighborhoods (88 percent) are located in counties where online applications are accepted.[12] However, there remain 362 and 892 neighborhoods located in

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[12] The characteristics of each of the 67 county assessor's offices are available upon request.

Table 1

Means and Standard Deviations of Neighborhood
and Property Tax Assessor Characteristics

	Mean	Standard Deviation
Neighborhood characteristics		
Homestead take-up percentage	89.5	7.3
Black (%)	15.8	22.9
Hispanic (%)	22.1	24.4
Median household income ($1,000)	56.3	28.9
Average school years	13.3	1.3
Average age of homeowners	58.9	6.7
Number of homeowners (1,000)	4.5	4.2
Homeowners per 1,000 square meters		
(density)	0.3	0.3
Churches per 100 homeowners	1.1	7.3
Meeting places per 100 homeowners	5.5	254.3
Assessor characteristics		
Mail/in-person application (%)	3.5	0.2
Online application available (%)	87.8	0.3
In-person-only application (%)	8.6	0.3
Outreach to publicize exemption (%)	26.3	0.4
Office locations for filing application	2.2	1.5
Observations	10,373	

counties with mail/in-person and only in-person applications, respectively. Twenty-six percent of the neighborhoods are located in counties where there is outreach to publicize the existence of the exemption. On average, neighborhoods are found in counties having two offices.

Table 2 reports property tax savings from the homestead exemption by neighborhood race/ethnicity and income. Neighborhoods are divided into nine groups based on whether whites, Blacks, or Hispanics represent a majority of the neighborhood's population and whether the neighborhood falls into the low-, middle-, or high-income category. The annual mean savings in property taxes (only from the exemption and not the cap) in dollars and as a percentage of the median income of the neighborhood account for differences in county millage rates, which are flat within the county. In comparison with majority white neighborhoods, dollar savings are larger in neighborhoods where Blacks or Hispanics are in the majority. This finding applies across all three income groups. Savings as a percentage of income are particularly large for low-income neighborhoods where Blacks or Hispanics are a majority of the population, equaling 3.75 and 3.27 percent, respectively. Ihlanfeldt and Rodgers (2020) show that the existence of the SOH assessment cap increases the progressivity of the property tax on single-family homes, which suggests that taking

Table 2

Property Tax Savings from Homestead Exemption
by Neighborhood Race/Ethnicity and Income Group

	Majority White	Majority Black	Majority Hispanic
Low income	873	927	922
	(2.8)	(3.7)	(3.3)
	[17.5]	[18.6]	[18.5]
Middle income	863	944	919
	(1.8)	(2.0)	(1.9)
	[17.3]	[18.9]	[18.5]
High income	874	947	951
	(1.1)	(1.4)	(1.2)
	[17.1]	[18.9]	[19.0]

Note: Low-, middle-, and high-income groups based on their median household income into <$40,000, $40,000–$60,000, and >$60,000, respectively. Number in parentheses is the mean tax savings as a percentage of neighborhood median income. Mean millage rates are in brackets. Black and white are exclusive of Hispanic.

the cap into consideration would increase the savings for low-income neighborhoods above those reported in Table 2. Also reported in Table 2 are mean millage rates, which show little differences by neighborhood income level but are roughly a mill to a mill and a half smaller within neighborhoods where whites are in the majority. This explains the larger dollar savings from the homestead exemption within minority neighborhoods.

Table 3 shows the mean take-up rates of the homestead exemption for selected neighborhood characteristics. The top of the table shows rates by racial/ethnic characteristics. In neighborhoods where Blacks, Hispanics, and whites are the majority group, mean take-up rates are 84.7, 87.4, and 90.5 percent, respectively. Interestingly, there is little difference in the rate across high-income neighborhoods regardless of which race/ethnicity group is in the majority, with all rates around 90 percent. Within low-income neighborhoods, however, majority Black and majority Hispanic neighborhoods have lower take-up rates than majority white neighborhoods (83.2, 85.0, and 88.3 percent, respectively). The mean take-up rate is higher for neighborhoods where the average age is 60 or older (92.7 percent) in comparison with where the average age is less than 45 (89.2 percent). Neighborhoods having a large and small number of homeowners (top and bottom thirds of the distribution) have mean take-up rates of 91.4 and 86.7 percent, respectively. Among the property assessor characteristics, mean take-up rates are higher where application is made by mail or in person (92.0 percent) or where applications can be filed online (89.5 percent) in comparison with neighborhoods where the application must be filed in person at the tax assessor's office (88.6 percent). Take-up rates are also marginally higher where

Table 3

Mean Neighborhood Homestead Take-Up Rates by Neighborhood
and Property Tax Assessor Characteristics

	Mean Take-Up Rate	Standard Deviation	Number
Neighborhood characteristics			
Majority Black	84.7	7.5	1,042
Majority Hispanic	87.4	9.3	1,362
Majority white	90.5	6.5	7,964
Majority Black, low income	83.2	7.9	721
Majority Black, high income	90.7	3.4	69
Majority Hispanic, low income	85.0	11.0	541
Majority Hispanic, high income	89.5	8.3	392
Majority white, low income	88.3	8.0	1,924
Majority white, high income	91.8	5.9	3,126
Average age < 45	82.7	15.3	141
Average age 60 or older	89.2	7.8	4,138
Number of owners, low	86.7	9.7	3,405
Number of owners, high	91.4	4.4	3,520
Assessor characteristics			
Online application	89.5	6.9	9,106
In-person application	88.6	11.1	895
Mail/in-person application	92.0	5.0	367
Outreach, no	89.8	6.8	7,636
Outreach, yes	88.8	8.4	2,732
Locations = 1	89.2	7.7	5,828
Locations > 1	89.9	6.6	4,540

Note: Low and high indicate top and bottom thirds of the distribution of the characteristic. The mean take-up rate is significantly different at the 1 percent level between majority white and majority Black (majority Hispanic) neighborhoods, between all low- and high-income groups, between the two age groups, between a low and high number of owners, between online applications and the other two application methods, and between the two outreach groups and the two location groups.

there is more than one office location (89.9 percent) in comparison with a single location (89.2 percent) for filing an application.[13]

A final approach to revealing the relationship between a neighborhood characteristic and the homestead exemption take-up rate is to plot the take-up rate against the characteristic. I use binned scatterplots and median values of the take-up rate and the characteristic within each of 100 bins. With a large number of observations, scatterplots provide a nonparametric way of visualizing the relationship between two

[13] As reported at the bottom of Table 3, the reported differences in mean take-up rates are statistically significant at the 1 percent level.

variables. The fit line shown assumes a quadratic relationship between the two variables. Figure 2a shows the relationship between the neighborhood take-up rate and the combined number of Blacks and Hispanics as a percentage of the neighborhood population.[14] The take-up rate falls linearly with percent minority. The plot in Figure 2b shows that the take-up rate rises with the median income of the neighborhood, with some downward movement at the highest values.

V. REGRESSION RESULTS

As previously noted, observed associations between the take-up rate and the race/ethnicity or income of the neighborhood may be due the latter's correlations with other variables. The first set of ordinary least squares regression models investigates the robustness of correlations between take-up rates and neighborhood race/ethnicity and income to the inclusion of neighborhood and assessor characteristics associated with knowledge of the exemption and transaction costs. The regression estimates also show the correlation between take-up rates and each of the variables that may proxy for transaction costs associated with application and homeowner knowledge of the exemption.

The regression model can be expressed as

$$y_i = \boldsymbol{n_i}'\partial + \boldsymbol{x}_i'\delta + \boldsymbol{s}_i'\beta + \boldsymbol{c}_i'\gamma + \boldsymbol{p}'_i\theta + \varepsilon_i, \tag{1}$$

where i denotes the ith neighborhood (census block group) for $i = 1, 2, \ldots$. The dependent variable y_i is the percentage of eligible homeowners residing in the neighborhood who claim the homestead exemption in the ith neighborhood in year 2017; $\boldsymbol{n}_i$ and $\boldsymbol{x}_i$ are measures of the racial/ethnic composition and income of neighborhood residents, respectively. Both continuous and categorical variables are alternatively used. The variable $\boldsymbol{s}_i$ is the neighborhood characteristics associated with knowledge of the exemption and application transaction costs. The variable $\boldsymbol{c}_i$ is the total population of the county. The information culled from the county property assessor's website is represented by $\boldsymbol{p}_i$.

The second set of regressions interacts $\boldsymbol{n}_i$ with $\boldsymbol{p}_i$ to investigate whether correlations between the neighborhood take-up rate and the race/ethnicity of the neighborhood vary with policies of the county tax assessor

$$y_i = \boldsymbol{n_i}'\partial + \boldsymbol{x}_i'\delta + \boldsymbol{s}_i'\beta + \boldsymbol{c}_i'\gamma + \boldsymbol{p}'_i\theta + (\boldsymbol{n}_i' \times \boldsymbol{p}'_i)\sigma + \varepsilon_i. \tag{2}$$

Interactions between $\boldsymbol{x}_i$ and $\boldsymbol{p}_i$ are also explored.

[14] Separate plots by the percentage of Blacks or Hispanics are similar to one another and closely match Figure 2a.
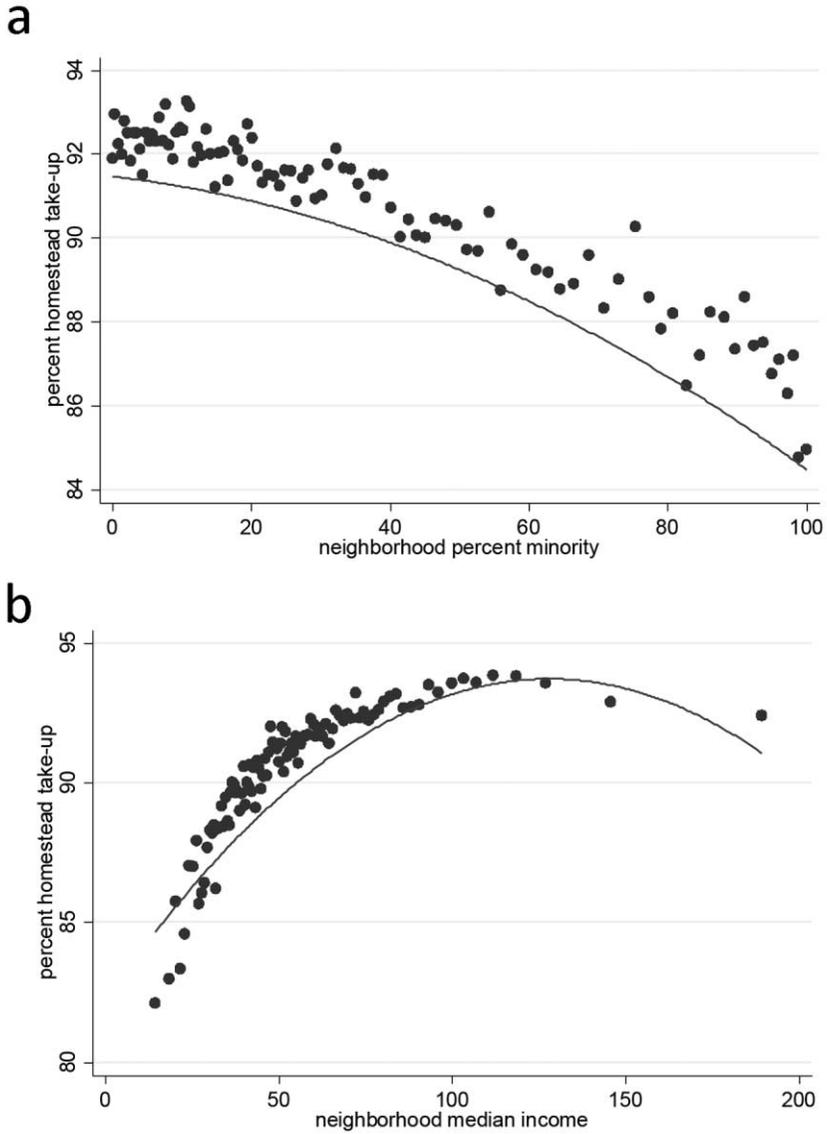
Figure 2. Plots relating neighborhood homestead take-up percentage to neighborhood percent minority and median income. (a) Homestead take-up percentage by neighborhood percent minority. (b) Homestead take-up percentage by neighborhood median income. Plots are generated from binned scatterplots using 100 bins and a quadratic fit line.

A. Baseline Regression Results

The first two columns of Table 4 show the results from regressing the take-up rate on the race/ethnicity of the neighborhood. The numbers of Blacks and Hispanics as percentages of the neighborhood's residents, as well as the dummy variables indicating a majority Black or Hispanic neighborhood, are all negative and statistically significant at the 1 percent level. A 1 percentage point increase in percentage Black is correlated with about a 1 percentage point reduction in the take-up rate, and a majority Black neighborhood has a take-up rate that is about 6 percentage points smaller than a majority white neighborhood. Corresponding numbers for Hispanics are about half as large in absolute magnitude.

In light of the fact that the overall, majority Black, and majority Hispanic neighborhood mean take-up percentages are 89.5, 84.7, and 87.4, respectively, the magnitudes of the Black and Hispanic estimates suggest they are economically significant. The average neighborhood contains 383 single-family homeowners who are eligible for the homestead exemption. Thus, a standard deviation increase in percentage Black (percentage Hispanic), equal to 23 (24), translates to 8.3 (5.0) eligible homeowners missing out on the property tax savings provided by the homestead exemption.

Column 3 shows that the take-up rate is positively correlated with median neighborhood income (measured in $1,000s), with a correlation of 0.06 that is significant at the 1 percent level. A standard deviation increase in income (28.9) raises the take-up percentage by about 2 percentage points. Column 4 includes both the race/ethnicity majority variables and median income together and the results show that the correlations of these variables with the take-up rate are highly similar to those reported in Columns 2 and 3, suggesting that these correlations are not driven by associations between the variables. Columns 5 and 6 are the estimates from Equation (1) including the full set of neighborhood and assessor characteristics. In Column 5 the race/ethnicity variables are the neighborhood percentages of each group, and homeowner age and adult education are measured as continuous variables. In Column 6 race/ethnicity are the majority dummy variables and age and education are measured categorically. The fully specified regression models of Columns 5 and 6 show that the race/ethnicity and income of the neighborhood have somewhat weaker correlations with the take-up rate, but they remain significant at the 1 percent level. Thus, regardless of whether the race/ethnicity variables are measured continuously or categorically, the associations between these variables and the homestead exemption take-up rate are not driven by their correlations with the other characteristics included in the model. Homeowner age is more strongly correlated with the take-up rate if measured categorically, showing that take-up rates are higher within neighborhoods where homeowners are older. Neighborhoods with higher levels of adult education have higher take-up rates. The density and number of homeowners and the number of meeting places within the neighborhood are all positively and significantly correlated with the take-up rate. The inverse relationship between churches and take-up is puzzling but may reflect churches crowding out other gathering places

where information of the homestead exemption is more frequently shared. Alternatively, the relationship may be driven by churches with large congregations, where there may be a greater diffusion of knowledge of the exemption.[15]

Among the characteristics of the assessor's office within the county where the neighborhood is located, outreach and the number of office locations are positively correlated with the take-up rate. Among the methods of application, mail/in-person applications have a higher correlation with the take-up rate than where applications can only be filed in person at the assessor's office. These correlations are all significant at the 1 percent level. Take-up rates are also positively correlated with online applications, but only within neighborhoods with a medium or high level of high-speed internet coverage.[16] These results support the division of the method of application allowing homeowners to file online into levels of neighborhood internet coverage.

In summary, two conclusions can be drawn from the results presented in Table 4. Unconditionally and conditionally on neighborhood and assessor characteristics, minority and low-income neighborhoods have lower homestead exemption take-up rates. The lower take-up rates found in these neighborhoods after controlling for the transaction costs and exemption knowledge measures suggest that there are variables omitted from the regression that are correlated with neighborhood race/ethnicity and income that have their own correlations with take-up rates. Although there are other possible omissions, one involves my measure of internet access. While it captures the availability of high-speed internet in the neighborhood, it does not measure its actual presence within the home. Survey evidence indicates that the lower internet subscription rates among minority and low-income households are more due to the costs of the subscription and the necessary computer equipment than the absence of a provider (Turner, 2016). Data on subscription rates are not available at the block group level. Thus, a more complete analysis of the role of the internet in affecting the take-up correlations with neighborhood race/ethnicity and income must await better data. Another omitted variable is the level of financial literacy. This may be lower in minority and low-income neighborhoods and may play a role in applying for the exemption. Lusardi and Mitchell (2014) cite numerous studies that have found that financial literacy is at a lower level among low-income and minority individuals.

The second conclusion suggested by the regression results is that take-up rates are correlated with transaction costs and knowledge of the exemption. Measures include the number of homeowners, homeowner density, adult educational attainment, the number of meeting places, presence of assessor outreach, and the number of assessor office locations, and all are positively and significantly correlated with homestead exemption take-up rates.

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[15] I thank the editor, Stacy Dickert-Conlin, for suggesting this explanation.

[16] As expected, controls intending to correct for the residence possibly being a second home (i.e., counts within the neighborhood of condominiums and vacant housing units that are for seasonal, recreational, or occasional use) are negatively correlated with take-up rates (see bottom of Table 4). However, the results are not sensitive to their inclusion.

Table 4

Regression Results: Neighborhood Homestead Exemption Take-Up Rate on Neighborhood Characteristics and Policies of County Property Tax Assessor

	(1)	(2)	(3)	(4)	(5)	(6)
Black (%)	−0.095***				−0.071***	
	(0.003)				(0.004)	
Hispanic (%)	−0.057***				−0.056***	
	(0.004)				(0.005)	
Majority Black		−6.135***		−4.956***		−3.616***
		(0.248)		(0.248)		(0.252)
Majority Hispanic		−3.361***		−3.048***		−1.785***
		(0.263)		(0.259)		(0.261)
Median income			0.062***	0.049***	0.023***	0.032***
			(0.003)	(0.003)	(0.004)	(0.004)
Average owner age					0.016	
					(0.018)	
Age						
35–60						0.049***
						(0.013)
>60						0.052***
						(0.012)
Average school years					0.276***	
					(0.092)	
Education						
High school						0.084***
						(0.011)
College						0.085***
						(0.011)
Professional						0.061***
						(0.014)
Owner density					1.342***	1.525***
					(0.468)	(0.465)
Owner number					0.187***	0.170***
					(0.027)	(0.025)
Churches					−0.195***	−0.191***
					(0.032)	(0.030)
Meeting places					0.005***	0.005***
					(0.001)	(0.001)
County population					−0.004*	−0.009***
					(0.002)	(0.002)
Outreach					1.802***	1.506***
					(0.286)	(0.281)
Office locations					0.283***	0.290***
					(0.054)	(0.055)

Table 4 (Continued) Regression Results: Neighborhood Homestead Exemption Take-Up Rate on Neighborhood Characteristics and Policies of County Property Tax Assessor

	(1)	(2)	(3)	(4)	(5)	(6)
Mail/in-person application					3.476***	3.187***
					(0.488)	(0.484)
Online, high-speed internet					0.701*	0.561
					(0.427)	(0.431)
Online, medium-speed internet					0.748*	0.728*
					(0.410)	(0.417)
Online, low-speed internet					−0.740	−0.603
					(0.687)	(0.692)
Condos (100)	−0.006	−0.029	−0.047	−0.028	−0.135**	−0.129**
	(0.055)	(0.048)	(0.045)	(0.049)	(0.061)	(0.058)
Second homes (100)	−0.521***	−0.394***	−0.286***	−0.410***	−0.555***	−0.508***
	(0.127)	(0.081)	(0.055)	(0.087)	(0.160)	(0.140)
Observations	10,373	10,373	10,373	10,373	10,373	10,373

Note: Robust standard errors are in parentheses. Asterisks denote statistical significance at the 10% (*), 5% (**), and 1% (***) levels.

B. Results from Interacting Race/Ethnicity of the Neighborhood with Assessor Policies and Selected Neighborhood Characteristics

Results from interacting neighborhood types defined by race/ethnicity with the county property tax assessor characteristics are reported in Table 5.[17] The purpose is to explore whether take-up rates correlate differently with majority Black or Hispanic neighborhoods and are conditional on the method of application, the presence of outreach, and the number of office locations. In particular, it is important to know whether differences in take-up rates between minority and white neighborhoods are larger in counties allowing online applications. As noted, most of Florida's neighborhoods are located in the latter counties and the digital divide may result in larger racial gaps in take-up of the homestead exemption. Reported are partial derivatives (i.e., the sum of the estimated coefficient on the Black or Hispanic majority and the estimated coefficient on the interaction term).

Because interaction effects can be difficult to interpret, consider the entries in the first column of Table 5 showing the Black/white difference in the take-up rate for neighborhoods in counties with online applications and different levels of internet

[17] The interaction models include the full set of covariates, as well as the controls for second homes.

Table 5

Homestead Take-Up Regression Results from Interacting
Race/Ethnicity of Neighborhood with Property
Tax Assessor Characteristics

	Black Majority	Hispanic Majority
	(1)	(2)
Method of application		
Online, high-speed internet	−4.659***	−1.941***
	(0.341)	(0.381)
Online, medium-speed internet	−3.143***	−1.962***
	(0.345)	(0.354)
Online, low-speed internet	−7.878	−12.536***
	(5.535)	(4.409)
Only in person	0.088	1.629*
	(1.080)	(0.913)
Mail/in person	−0.442	9.072***
	(0.604)	(0.312)
Outreach		
Yes	−3.083***	−1.843***
	(0.389)	(0.349)
No	−3.973***	−1.674***
	(0.307)	(0.406)
Multiple locations		
Yes	−3.561***	−0.521
	(0.423)	(0.404)
No	−3.663***	−2.358***
	(0.297)	(0.328)
Observations	10,373	10,373

Note: Reported are partial derivatives (i.e., the sum of the estimated coefficient on
Black or Hispanic) majority dummy variable and the estimated coefficient on the in-
teraction term. An underline indicates the interaction is statistically significant at the
10% level or higher. Robust standard errors are in parentheses. Asterisks denote sta-
tistical significance at the 10% (*) and 1% (***) levels.

coverage. The estimated correlation of −4.659 indicates that isolating on just neigh-
borhoods located in counties that allow online application and have a high level of
internet coverage, the take-up rate is 4.7 percentage points lower in a majority Black
than a majority white neighborhood. In neighborhoods with a medium level of in-
ternet coverage, the majority Black to majority white gap is smaller but still highly
significant. There is no statistical difference in the racial gap comparing neighbor-
hoods with low internet coverage. The results suggest that the higher the level of in-
ternet coverage the more the take-up rate favors majority white neighborhoods in

counties allowing online applications. Standing in sharp contrast, there is no significant difference in the take-up rate between majority Black and majority white neighborhoods located in counties where applications cannot be submitted online (i.e., where applications are by mail/in person or only in person.)

The bottom of Column 1 shows that the take-up correlations with majority Black neighborhoods are less negative if the assessor's office engages in outreach (a percentage point gap of 3 with outreach versus 4 without it). There is no racial difference in the correlations conditional on the number of office locations.

Differences in correlations between majority white and majority Hispanic neighborhoods are in Column 2. As is true for majority Black neighborhoods, the take-up correlations are negative and significant for majority Hispanic neighborhoods that are located in counties that allow online applications and where the coverage of the internet exceeds 50 percent. However, while the take-up correlation with a majority Black neighborhood is insignificant where internet coverage is poor, the correlation is large and significant within a majority Hispanic neighborhood, showing a take-up rate that is 12 percentage points smaller than within a majority white neighborhood. For the other two methods of application (mail/in person and only in person), the results mirror those obtained for majority Black neighborhoods. For both types of neighborhoods located in counties with these application methods, there are no negative take-up correlations. In fact, the correlations are positive, especially for mail/ in-person applications, where the take-up rate is 9 percentage points higher within a majority Hispanic in comparison with a majority white neighborhood. There is no ethnic difference in the take-up rate correlations conditional on whether the neighborhood is in a county that makes outreach efforts to publicize the exemption. However, there is a difference based on the number of assessor offices where an application can be filed. The take-up correlation with a majority Hispanic neighborhood is more negative where there is only one office.

In summary, the most salient finding from the interactions is that homestead exemption take-up rates are lower in majority Black and Hispanic neighborhoods (relative to majority white neighborhoods) in counties allowing homeowners to apply online, which is 88 percent of all neighborhoods in Florida. There is no difference in take-up rates between minority and white neighborhoods for the remaining 12 percent of neighborhoods in counties that do not offer online applications. The results also show that these rate gaps depend on the level of internet coverage within the neighborhood.

C. Results from Interacting Neighborhood Income Groups with Assessor Policies and Selected Neighborhood Characteristics

Table 6 reports the results from interacting dummy variables indicating a middle- and high-income neighborhood with the assessor characteristics. The methodology and presentation of results are the same as described in Subsection V.B.

Table 6

Homestead Take-Up Regression Results from
Interacting Neighborhood Income Groups with
Property Tax Assessor Characteristics

	Middle Income	High Income
	(1)	(2)
Method of application		
Online, high-speed	1.659***	3.458***
internet	(0.218)	(0.247)
Online, medium-	1.908***	2.844***
speed internet	(0.240)	(0.277)
Online, low-speed	4.031***	3.261**
internet	(1.100)	(1.300)
	2.754***	−3.154***
Only in person	(0.742)	(1.015)
	1.547***	1.945***
Mail/in person	(0.454)	(0.445)
Outreach		
	1.972***	2.885***
Yes	(0.321)	(0.354)
	1.705***	2.118***
No	(0.196)	(0.263)
Multiple locations		
	1.573***	1.591***
Yes	(0.215)	(0.297)
	1.920***	2.899***
No	(0.221)	(0.273)
Observations	10,373	10,373

Note: Reported are partial derivatives (i.e., the sum of the estimated co-
efficient on Middle Income or High Income) dummy variable and the
estimated coefficient on the interaction term. An underline indicates
the interaction is statistically significant at the 10% level or higher. Ro-
bust standard errors are in parentheses. Asterisks denote statistical sig-
nificance at the 5% (**) and 1% (***) levels.

In comparison with low-income neighborhoods, take-up rates are higher in middle-
and high-income neighborhoods located within counties allowing online applications.
Depending on the level of internet coverage, the take-up rate is 3–4 percentage points
higher within these neighborhoods. For neighborhoods in counties where an appli-
cation can only be filed by mail or in person, the take-up rate is about 2 percentage
points higher in a middle- or high-income neighborhood. Where the application can

only be made in person at an assessor's office, the results contrast between a middle- and high-income neighborhood. The correlation is positive in the former case and negative in the latter case. The take-up rate is 3 percentage points lower in a high-income than in a low-income neighborhood. This may reflect lower-income owners having a stronger incentive to file an application (by the diminishing marginal utility of income) or higher-income homeowners having a higher opportunity cost (time value) of making an in-person application. Where outreach is practiced, the take-up rate difference is larger between high-income and low-income neighborhoods. This suggests that outreach may be targeted to higher-income neighborhoods, either because these places have more homeowners or have more political clout (recall that property assessor is an elected position).[18] Neighborhood income differences in take-up rates are smaller if the neighborhoods are located in counties with multiple office locations.

VI. CONCLUSIONS

Almost all states offer property tax savings to homeowners who claim their home as their permanent residence by providing a homestead exemption that reduces the assessed value of their home. Some states, like Florida, also provide a cap on annual increases in assessed values that comes along with the homestead exemption. The exemption does not come automatically with ownership but must be applied for by the homeowner. In comparison with the take-up rates reported in the literature for social programs, my results suggest that there is a high take-up rate of the homestead exemption in Florida among single-family homeowners. However, because of their large number, thousands of homeowners eligible for the homestead exemption miss out on the substantial tax savings provided by the exemption and the accompanying cap on the annual increase in assessed value. At the national level, the number is more likely to be in the millions.

The correlations I estimate between the take-up of the homestead exemption and neighborhood and property tax assessor characteristics are consistent with the idea that take-up is greater within neighborhoods where there is a greater awareness of the existence of the exemption and where transaction costs associated with filing an application are lower, mirroring the emphasis placed on these factors in studies focused on the take-up of social programs. They also show that negative correlations between the race/ethnicity of the neighborhood and the take-up rate remain, even when controlling for many neighborhood characteristics. Take-up rates are positively correlated with neighborhood income and are lower in minority in comparison with white neighborhoods. These differences are found to be important within counties allowing online applications. Although I make no claim for causality, my findings suggest that homeowners in minority and low-income neighborhoods within these

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[18] To reiterate, while I have offered possible explanations for the neighborhood income findings, I make no claim for causality.

counties have less opportunity to file an application online, confronting them with higher transaction costs than homeowners residing in majority white or higher-income neighborhoods.

My findings contribute to the literature on racial disparities in the property tax. A homeowner's tax liability is the product of the taxable value of the home and the mill-age rate. The taxable value equals the assessed value minus the homestead and other exemptions. While I find correlations between the race/ethnicity of a neighborhood and the percentage of eligible homeowners who claim the homestead exemption, other studies have found correlations between assessed values and the race of the homeowner. Historically, institutional racism (Rothstein, 2017; Atuahene, 2018) and the racial prejudice of government officials (Kahrl, 2016) both have been associated with the overassessment of homes owned by minorities.

While my results pertain only to Florida, they suggest that less than complete take-up of homestead exemptions by eligible homeowners may be common in many other states. As is true in Florida, the exemption is not automatically given to all el-igible homeowners. Although research on other states is needed, lower take-up rates of the homestead exemption within minority and low-income neighborhoods where applications are allowed online may be common, contributing at the national level to the economic disadvantages experienced by households living in these neighbor-hoods. If nothing else, my study points to the need for further research into the fail-ure of eligible homeowners to take the homestead exemption. In particular, moving from the descriptive, correlations-based analysis presented in this paper to identify-ing the causes underlying these correlations would be an important next step for fu-ture research.

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