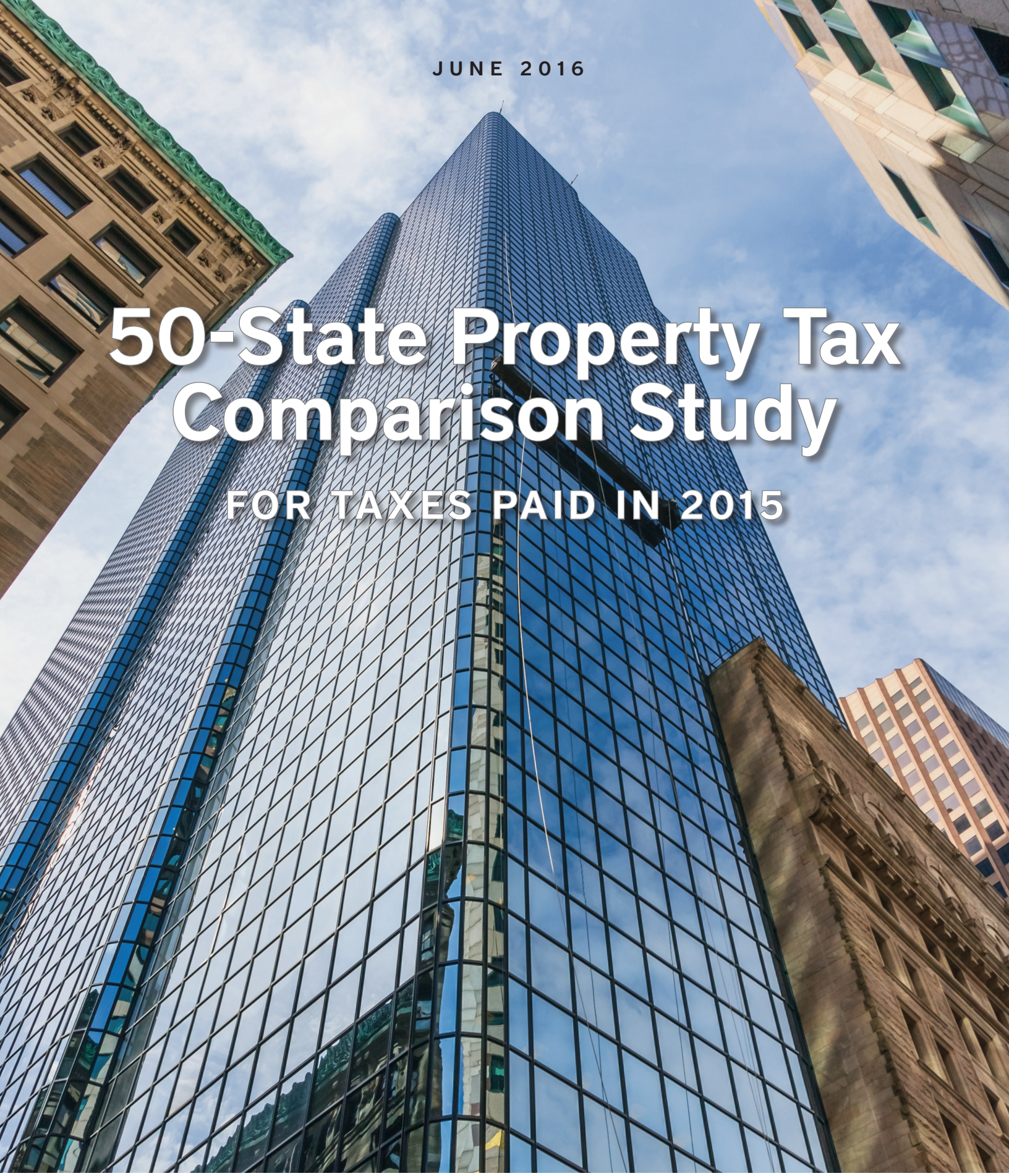

JUNE 2016

50-State Property Tax Comparison Study

FOR TAXES PAID IN 2015

LINCOLN INSTITUTE OF LAND POLICY

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Acknowledgements

This report would not have been possible with the cooperation and assistance of many individuals. Research, calculations, and drafting were done by Aaron Twait[2] and Adam H. Langley[1]. The report benefited greatly from feedback provided by Anthony Flint[1], Mark Haveman[2], Will Jason[1], Daphne A. Kenyon[1], George W. McCarthy[1], Emily McKeigue[1], Semida Munteanu[1], Andrew Reschovsky[1], and Joan M. Youngman[1].

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50-State Property Tax Comparison Study
For Taxes Paid in 2015

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Executive Summary

As the largest source of revenue raised by local governments, a well-functioning property tax system is critical for promoting municipal fiscal health. This report documents the wide range of property tax rates in more than 100 U.S. cities and helps explain why they vary so widely. This context is important because high property tax rates usually reflect some combination of heavy property tax reliance with low sales and income taxes, low home values that drive up the tax rate needed to raise enough revenue, or higher local government spending and better public services. In addition, some cities use property tax classification, which can result in considerably higher tax rates on business and apartment properties than on homesteads.

This report provides the most meaningful data available to compare cities' property taxes by calculating the *effective tax rate*: the tax bill as a percent of a property's market value. Data are available for 73 large U.S. cities and a rural municipality in each state, with information on four different property types (homestead, commercial, industrial, and apartment properties), and statistics on both net tax *bills* (i.e. $3,000) and effective tax *rates* (i.e. 1.5 percent). These data have important implications for cities because the property tax is a key part of the package of taxes and public services that affects cities' competitiveness and quality of life.

Why Property Tax Rates Vary Across Cities

To understand why property tax rates are high or low in a particular city, it is critical to know why property taxes vary so much across cities. This report uses statistical analysis to identify four key factors that explain most of the variation in property tax rates.

Property tax reliance is one of the main reasons why tax rates vary across cities. While some cities raise most of their revenue from property taxes, others rely more on alternative revenue sources. Cities with high local sales or income taxes do not need to raise as much revenue from the property tax, and thus have lower property tax rates on average. For example, this report shows that Bridgeport (CT) has the highest effective tax rate on a median valued home, while Birmingham (AL) has one of the lowest rates. However, in Bridgeport city residents pay no local sales or income taxes, whereas Birmingham residents pay both sales and income taxes to local governments. Consequently, despite the fact that Bridgeport has much higher property taxes, total local taxes are considerably higher in Birmingham ($2,429 vs. $1,914 per capita).

Property values are the other crucial factor explaining differences in property tax rates. Cities with high property values can impose a lower tax rate and still raise at least as much property tax revenue as a city with low property values. For example, consider San Francisco and Detroit, which have the highest and lowest median home values in this study. The average property tax bill on a median valued home for the large cities in this report is $3,039. To raise that amount from a median valued home, the effective tax rate would need to be more than 20 times higher in Detroit than in San Francisco—7.25 percent versus 0.36 percent.

Two additional factors that help explain variation in tax rates are the level of local government spending and whether cities tax homesteads at lower rates than other types of property (referred to as "classification"). Holding all else equal, cities with higher spending will need to have

higher property tax rates. Classification imposes lower property taxes on homesteads, but higher property taxes on business and apartment properties.

Homestead Property Taxes

There are wide variations across the country in property taxes on owner-occupied primary residences, otherwise known as homesteads. An analysis of the largest city in each state shows that the average effective tax rate on a median-valued homestead was 1.50 percent in 2015 for this group of 53 cities.[1] At that rate, a home worth $200,000 would owe $3,000 in property taxes (1.50% x $200,000). On the high end, there are three cities with effective tax rates that are roughly 2.5 times higher than the average – Bridgeport, Detroit, and Aurora (IL). Conversely, there are six cities where tax rates are less than half of the study average – Honolulu, Cheyenne, Denver, Birmingham, Boston, and Washington DC.

Highest and Lowest Effective Property Tax Rates on a Median Valued Home (2015)

Highest Property Tax Rates				**Lowest Property Tax Rates**			
1	Bridgeport (CT)	3.88%	*Why:* High property tax reliance	49	Boston (MA)	0.67%	*Why:* Classification shifts tax to business, high home values
2	Detroit (MI)	3.81%	*Why:* Low property values	50	Birmingham (AL)	0.66%	*Why:* Low property tax reliance, classification shifts tax to business
3	Aurora (IL)	3.72%	*Why:* High property tax reliance	51	Denver (CO)	0.66%	*Why:* Low property tax reliance, classification, high home values
4	Newark (NJ)	3.05%	*Why:* High property tax reliance	52	Cheyenne (WY)	0.65%	*Why:* Low property tax reliance
5	Milwaukee (WI)	2.68%	*Why:* Low property values, high property tax reliance	53	Honolulu (HI)	0.30%	*Why:* High home values, low local gov't spending, classification

Note: Data for all cities: Figure 2 (page 18), Appendix Table 1a (page 49), and Appendix Table 2a (page 57).

The average tax rate for these cities fell slightly between 2014 and 2015, from 1.511 percent to 1.503 percent, with increases in 20 cities, decreases in 31, and no change in 2 cities. The largest increase was in Phoenix, where the effective rate rose by about 12 percent, which drove the city's ranking up from 37th to 30th highest. The next largest increases were in Des Moines, Aurora (IL), Fargo, and Indianapolis. The largest decrease was in Sioux Falls (SD), which had a 9.4 percent decline and a six-place drop in rank, from 23rd to 29th highest. The next largest declines were in Chicago, Seattle, Billings (MT), and Memphis.

Note that differences in property values across cities mean that some cities with high tax *rates* can still have low tax *bills* on a median valued home if they have low home values, and vice versa. For example, Bridgeport and Detroit have similar tax rates on a median valued home, but because the median valued home is worth so much more in Bridgeport ($173k vs. $42k), the tax bill is far higher in Bridgeport (2nd highest) than in Detroit (42nd highest).

Effective tax rates rise with home values in about half of the cities (26 of 53), and this pattern has a progressive impact on the property tax distribution. Usually, this relationship occurs because of homestead exemptions that are set to a fixed dollar amount. For example, a $20,000 exemption

[1] The largest cities in each state includes 53 cities, because it includes Washington (DC) plus two cities in Illinois and New York since property taxes in Chicago and New York City are so different than the rest of the state.

provides a 20 percent tax cut on a $100,000 home, a 10 percent cut on a $200,000 home, and a 5 percent cut on a $400,000 home. The increase in effective tax rates with home values is steepest in Boston, Honolulu, Washington (DC), Atlanta, and New Orleans.

Commercial Property Taxes

There are also significant variations across cities in commercial property taxes, which include taxes on office buildings and similar properties. In 2015, the effective tax rate on a commercial property worth $1 million averaged 2.11 percent across the largest cities in each state. The highest rates were in Detroit, New York City, Providence, Chicago, and Bridgeport, all of which had effective tax rates that were at least two-thirds higher than the average for these cities. On the other hand, rates were less than half of the average in Cheyenne, Seattle, Honolulu, Virginia Beach, and Wilmington (DE).

Highest and Lowest Effective Property Tax Rates on $1-Million Commercial Property

Highest Property Tax Rates				**Lowest Property Tax Rates**			
1	Detroit (MI)	4.13%	*Why:* Low property values	49	Virginia Beach (VA)	1.03%	*Why:* High property values, Low local gov't spending
2	New York (NY)	3.96%	*Why:* High local gov't spending, Classification shifts tax to business	50	Billings (MT)	1.01%	*Why:* Low local gov't spending
3	Providence (RI)	3.71%	*Why:* High property tax reliance	51	Honolulu (HI)	0.91%	*Why:* High property values, Low local gov't spending
4	Chicago (IL)	3.60%	*Why:* Classification shifts tax to business, High local gov't spending	52	Seattle (WA)	0.88%	*Why:* High property values, Low property tax reliance
5	Bridgeport (CT)	3.59%	*Why:* High property tax reliance	53	Cheyenne (WY)	0.64%	*Why:* Low property tax reliance

Note: Analysis includes an additional $200k in fixtures (office equipment, etc.)
Data for all cities: Figure 3 (page 23), Appendix Table 1b (page 52), and Appendix Table 3a (page 73).

The cities with the largest drops in their effective tax rates from 2014 to 2015 were Columbus (OH), whose rate fell by almost a quarter and ranking dropped from 26th to 32nd, and Boston where the tax rate fell by a fifth and whose ranking dropped from 13th to 24th. There were also significant declines in Des Moines and Billings (MT). The largest increase was in Baltimore, where the effective tax rate increased by 9 percent, which drove the city's ranking up from 19th to 16th. No other city had its ranking increase by more than two places.

Preferential Treatment for Homeowners

Many cities have preferences built into their property tax systems that result in lower effective tax rates for certain classes of property, with these features usually designed to benefit homeowners. The "classification ratio" describes these preferences by comparing the effective tax rate on land and buildings for two types of property. For example, if a city has a 3.0% effective tax rate on commercial properties and a 1.5% effective tax rate on homestead properties, then the commercial-homestead classification ratio is 2.0 (3.0% divided by 1.5%).

An analysis of the largest cities in each state shows an average commercial-homestead classification ratio of 1.68, meaning that on average commercial properties experience an effective tax rate that is 68% higher than homesteads. Nearly a third of the cities (16 of 53) have

classification ratios above 2.0, meaning that commercial properties face an effective tax rate that is at least double that for homesteads.

Preferential Treatment of Homeowners: Ratio of Effective Tax Rate on Commercial and Apartment Properties to the Rate on Homestead Properties (2015)

Commercial vs. Homestead Ratio			Apartment vs. Homestead Ratio		
1	New York (NY)	4.22	1	New York (NY)	5.10
2	Boston (MA)	4.00	2	Columbia (SC)	3.69
3	Columbia (SC)	3.69	3	Indianapolis (IN)	2.65
4	Honolulu (HI)	3.62	4	Charleston (WV)	2.21
5	Denver (CO)	3.62	5	Birmingham (AL)	2.19

Note: Commercial-homestead ratio compares rate on $1 million commercial building to median valued home. Apartment-homestead ratio compares rate on $600k apartment building to median valued home. Data for all cities: Figures 6a and 6b (Page 37-38), and Appendix 6 (Page 99).

The average apartment-homestead classification ratio is significantly lower (1.38), with apartments facing an effective tax rate that is 38% higher than homesteads on average. There are six cities where apartments face an effective tax rate that is at least double that for homesteads, with New York City being a major outlier since the rate on apartments is more than five times higher than the rate on a median valued home. It is important to note that while renters do not pay property tax bills directly, they do pay property taxes indirectly since landlords are able to pass through some or all of their property taxes in the form of higher rents.

There are three types of statutory preferences built into property tax systems that can lead to lower effective tax rates on homesteads than other property types: the assessment ratio, the nominal tax rate, and exemptions and credits. In total, 40 of the 53 cities favor homesteads over commercial properties—27 of them have assessment ratios and/or nominal tax rates that favor homesteads, while in 13 cities classification is solely the result of exemptions or credits. Similarly, 36 cities favor homesteads relative to apartments, but only 16 of them have preferential assessment ratios and/or nominal tax rates, while in 20 cities classification is the result of exemptions or credits alone.

Property Tax Assessment Limits

Since the late 1970s, an increasing number of states have adopted property tax limits, including constraints on tax rates, tax levies, and assessed values. This report accounts for the impact of limits on tax rates and levies implicitly, because of how these laws impact cities' tax rates, but it is necessary to use an explicit modeling strategy to account for assessment limits.

Assessment limits typically restrict growth in the assessed value for individual parcels and then reset the taxable value of properties when they are sold. Therefore, the level of tax savings provided from assessment limits largely depends on two factors: how long a homeowner has owned her home and appreciation of the home's *market value* relative to the allowable growth of its *assessed value*. As a result, assessment limits can lead to major differences in property tax bills between owners of nearly identical homes based on how long they have owned their home.

This report estimates the impact of assessment limits by calculating the difference in taxes between newly purchased homes and homes that have been owned for the average duration in each city, for median valued homes. This discrepancy is largest in Long Beach (CA), where the average home has been owned for 14 years and the median home is worth $440,900. Because of the state's assessment limit, the owner of a newly purchased home would pay 40 percent more in property taxes than someone who has owned their home for 14 years, even though both homes are worth $440,900. Assessment limits have the largest impacts on the eight California cities studied, plus New York City (36.5% difference) and Miami (28.5% difference). Of the 27 cities in this report that are affected by parcel-specific assessment limits, new homeowners face higher property tax bills than existing homeowners in 21 cities.

Conclusion

Property taxes range widely across cities in the United States. This report not only shows which cities have high or low effective property tax rates, but also explains why. Cities will tend to have higher property tax rates if they have high property tax reliance, low property values, or high local government expenditures. In addition, some cities use property tax classification, which can result in considerably higher tax rates on business and apartment properties than on homesteads. By calculating the effective property tax rate, this report provides the most meaningful data available to compare cities' property tax burdens. These data have important implications for cities because the property tax is a key part of the package of taxes and public services that affects cities' competitiveness and quality of life.

Introduction

The property tax is one of the largest taxes paid by American households and businesses and funds many essential public services, including K-12 education, police and fire protection, and a wide range of critical infrastructure. Yet it is surprisingly difficult to get good data on property taxes that are comparable across cities. This report provides the necessary data by accounting for several key features of major cities' property tax systems and then calculating the *effective tax rate*: the tax bill as a percent of a property's market value.

High or low effective property tax rates do not in themselves indicate that tax systems are "good" or "bad." Evaluating a property tax system requires a broader understanding of the pros and cons of the property tax, the implications of high or low property tax rates, and the method by which property tax rates are set. These key issues are outlined below.

The property tax has key strengths as a revenue instrument for local governments: it is the most stable tax source, it is more progressive than alternative revenue options, and it promotes local autonomy. Property taxes are more stable over the business cycle than sales and especially income taxes, so greater property tax reliance helps local governments avoid major revenue shortfalls during recessions. It also helps localities maintain revenue stability in the face of fluctuating state and federal aid.[2] In addition, the property tax is relatively progressive compared to the sales tax, which is the other main source of tax revenue for local governments. Whereas the property tax is largely neutral, the sales tax is highly regressive.[3]

The property tax is particularly appropriate for local governments because it is imposed on an immobile tax base. While it is often easy to cross borders in search of a lower sales tax rate, those who wish to live or locate their business in a particular location cannot avoid paying the property tax. Thus, local governments have limited ability to charge different sales tax rates than their neighbors, but have greater control over setting their property tax rate.

A drawback of any local tax is that the tax base can vary widely across communities, but these disparities can be offset with state aid to local governments. For example, there are significant differences in property values across communities, just as there are wide disparities in retail sales and incomes across localities. State government grants to local governments can help offset these differences to ensure everyone has access to necessary services at affordable tax prices regardless of where they live. In addition, state-funded circuit breaker programs can help households whose property taxes are particularly high relative to their income.[4]

Property taxes are one part of the package of taxes and public services that affects competitiveness and quality of life. This report shows that many of the cities with high property tax rates have relatively low sales and income taxes for local governments, so the total local tax

[2] Ronald C. Fisher. 2009. "What Policy Makers Should Know About Property Taxes." *Land Lines*. Cambridge, MA: Lincoln Institute of Land Policy.
[3] Institute on Taxation and Economic Policy. 2015. "Who Pays? A Distributional Analysis of the Tax Systems in All 50 States."
[4] Bowman, John H., Daphne A. Kenyon, Adam Langley, and Bethany P. Paquin. 2009. "Property Tax Circuit Breakers: Fair and Cost-Effective Relief for Taxpayers." Cambridge, MA: Lincoln Institute of Land Policy.

burden for residents and business could still be attractive. Furthermore, state aid may reduce local property taxes, but this reduction may be offset by higher state taxes.

Similarly, if higher property taxes are used to pay for better public services, then high property tax rates may not affect competitiveness or quality of life. Many homeowners are willing to pay higher property taxes to have better public schools and safer neighborhoods. The bottom line is that it is the total state-local tax burden relative to the quality of public services that determines competitiveness and quality of life.

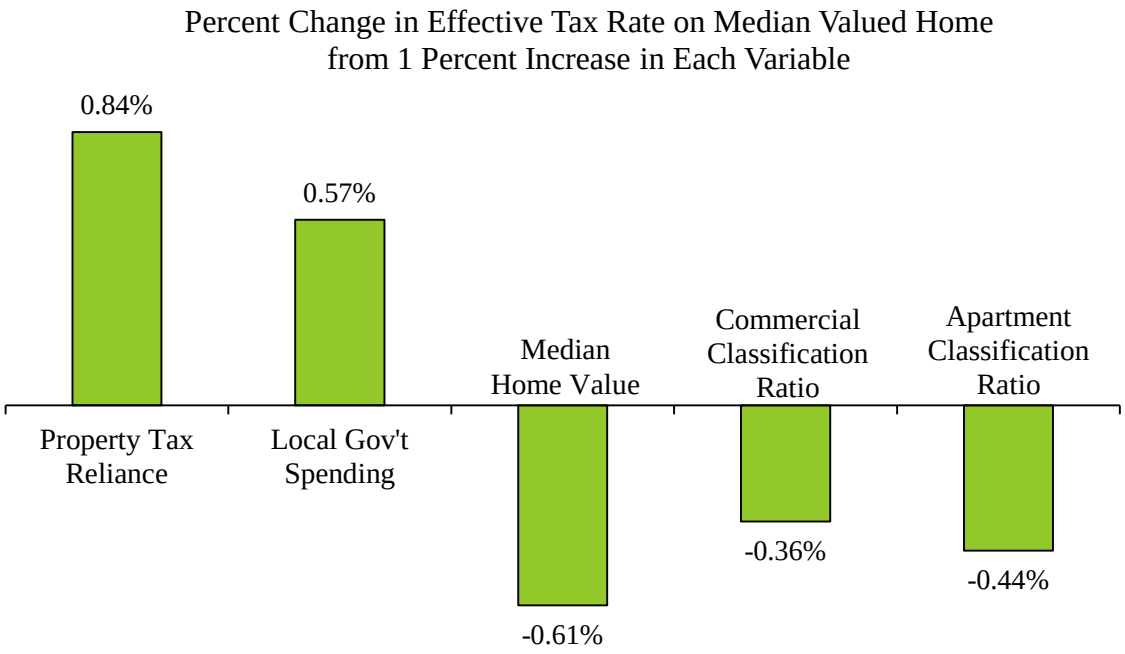
Property tax rates are set differently than other tax rates and reflect decisions about local government spending. Income and sales tax rates usually do not vary much from year-to-year, which leads to significant revenue fluctuations over the business cycle. In contrast, property tax rates are usually established *after* the local government budget is determined by elected officials and/or voters and the rate is then set to raise the targeted revenue level. However, flexibility in setting property tax rates can be constrained by state tax limits or political concerns about property tax burdens. The process for determining property tax rates varies across jurisdictions.

This report allows for meaningful comparisons of cities' property taxes by calculating the effective property tax rate—the tax bill as a percent of a property's market value. For most taxpayers, the effective tax rate will be significantly different from the nominal or official tax rate that appears on their tax bill. There are several reasons for this difference. First, many states only tax a certain percentage of a property's market value. For example, New Mexico assesses all property at 33.3 percent of market value for tax purposes, which means that a $300,000 home would be taxed as if it were worth $100,000. In addition, many states and cities use exemptions and/or credits to reduce property taxes. For example, a $50,000 homestead exemption would mean a $200,000 home would be taxed as if it were worth $150,000. Cities also vary in the accuracy of their assessments of property values for tax purposes. Finally, an analysis of property tax burdens requires consideration of property taxes paid to all local governments, including overlying counties and school districts, rather than simply comparing municipal tax rates. This report accounts for all of these differences in cities' property tax systems, which is essential for meaningful comparisons of their tax rates.

Why Property Tax Rates Vary Across Cities

This report demonstrates that effective property tax rates vary widely across U.S. cities. This section explores why some cities have relatively high property tax rates while others have much lower rates. Statistical analysis shows that four key factors explain nearly three-quarters of the variation in property tax rates. The two most important reasons why tax rates vary across cities are the extent to which cities rely on the property tax as opposed to other revenue sources, and the level of property values in each jurisdiction. Two additional factors that help explain variation in tax rates are the level of local government spending and whether cities tax homesteads at lower rates than other types of property (referred to as "classification").

Figure 1: Key Factors Explaining Differences in Property Tax Rates



Appendix 1 shows how these variables affect tax rates on homestead and commercial properties for each large city included in this report and details the methodology used for this analysis. This section focuses on homestead property taxes, but our analysis shows that tax rates on business and apartment properties are driven by the same four key factors.

Property Tax Reliance

One of the main reasons why tax rates vary across cities is that some cities raise most of their revenue from the property tax, while others rely more on alternative revenue sources.[5] Cities with high local sales or income taxes do not need to raise as much revenue from the property tax, and thus have lower property tax rates on average. Figure 1 shows that a 1 percent increase in the

[5] One way to measure the "importance" of each factor is to look at squared semi-partial correlations, which are analogous to estimating the R-square between the effective tax rate on a median valued home and each factor, controlling for the effect of the other factors. For the first regression of Appendix Table 1c, 26% of the variation in effective tax rates is explained by property tax reliance, 31% is explained by median home values, 7% by local government spending, and 4-5% each for the commercial- and apartment-homestead classification ratios.

share of revenue raised by local governments that comes from the property tax is associated with a 0.841 percent increase in the effective tax rate on a median valued home.

To see how property tax reliance impacts tax rates, compare Bridgeport (CT) and Birmingham (AL). Bridgeport has the highest effective tax rate on a median valued home in large part because it has the highest property tax reliance of any large city included in this report. So while Bridgeport has high property taxes ($1,891 per capita), city residents pay no local sales or income taxes. In contrast, Birmingham has the fifth lowest effective tax rate on a median valued home, but also has the fourth lowest reliance on the property tax. As a result, Birmingham residents have low property taxes ($767 per capita), but also pay a host of other taxes to local governments, including sales taxes ($866 per capita), income taxes ($353 per capita), and other local taxes ($443 per capita).[6] Consequently, total local taxes are considerably higher in Birmingham despite the fact that it has much lower property taxes than Bridgeport ($2,429 per capita vs. $1,914 per capita).

It is important to note that the ability of local governments to tap alternative revenue sources that would reduce property tax reliance is normally constrained by state law. State governments usually determine which taxes local governments are authorized to use and set the maximum tax rate localities are allowed to impose.[7]

The data on property tax reliance and local government spending that is used for this analysis is for *fiscally standardized cities* (FiSCs) rather than for city municipal governments alone. FiSCs provide estimates of revenues raised from city residents and businesses and spending on their behalf, whether done by the city government or by overlying county governments, independent school districts, or special purpose districts. This approach is similar to the methodology used in this report, which includes property taxes paid to the city government, county government, and the largest independent school district in each city. The FiSC database is available on the website of the Lincoln Institute of Land Policy.[8]

Property Values

Home values are the other crucial factor explaining differences in property tax rates. Cities with high property values can impose a lower tax rate and still raise at least as much property tax revenue as a city with low property values. For example, Figure 1 shows that a 1 percent increase in the median home value is associated with a 0.61 percent decrease in the effective tax rate on a median valued home.

For example, consider San Francisco and Detroit, which have the highest and lowest median home values in this study—$846,800 and $41,900 respectively. After accounting for assessment limits, the average property tax bill on a median valued home in the 73 large cities in this report is $3,039. To raise that amount from a median valued home, the effective tax rate would need to

[6] Data on per capita tax collections in 2013 is from the Lincoln Institute's *Fiscally Standardized Cities* database.
[7] Michael A. Pagano and Christopher W. Hoene. 2010. "States and the Fiscal Policy Space of Cities." In *The Property Tax and Local Autonomy*, ed. Michael E. Bell, David Brunori, and Joan Youngman, 243-277. Cambridge, MA: Lincoln Institute of Land Policy.
[8] https://www.lincolninst.edu/subcenters/fiscally-standardized-cities

be more than 20 times higher in Detroit than in San Francisco—7.25 percent versus 0.36 percent. The effective tax rate on a median valued home is actually less than four times higher in Detroit than San Francisco (3.14% vs. 0.83%), which means San Francisco collects more than five times more in property taxes from a median valued home ($6,991 vs. $1,317). This is typical—higher property values usually lead cities to have both lower tax rates and to raise more revenue for public services. While the difference between San Francisco and Detroit is extreme, it is common for there to be dramatic differences in property wealth across communities within a state or region. State government grants to local governments can be used to offset these differences to help ensure everyone has access to necessary services at affordable property tax prices regardless of where they live.

This analysis uses the median home value in each city, but no one measure fully captures all differences in cities' property wealth. For example, even with identical tax rates on homes and businesses, cities with larger business tax bases will be able to have lower residential property tax rates since it usually costs more to provide public services to households than to businesses.[9] In addition, the median does not provide any information about the distribution of home values. Cities with larger concentrations of high value homes (relative to the median in that city) will be able to have lower tax rates on a median valued home for any given level of public expenditures.

Local Government Spending

The level of local government spending is another reason why property tax rates vary across cities, although its effect is considerably less than property tax reliance or home values. Holding all else equal, cities with higher spending will need to have higher property tax rates. For example, Figure 1 shows that a 1 percent increase in local government spending per capita is associated with a 0.57 percent increase in the effective tax rate on a median valued home.

Just as property tax rates are driven by a number of key variables, there are several factors that influence local government spending. In particular, spending is driven by needs, revenue capacity, costs, and preferences. For example, expenditure needs are higher in cities with larger shares of school age children or higher crime rates, because local governments in those cities will need to spend more on K-12 education and police protection to provide the same quality of education and public safety as cities with fewer children or lower crime. Spending will often be higher in cities with greater revenue capacity since cities with larger tax bases can raise more revenue without needing higher tax rates, as discussed above in the section on property values. Costs also play a role, because cities with higher costs of living and higher private sector wages will need to pay higher salaries to attract qualified teachers, police, and other local government employees. Finally, residents in some cities have a higher preference for public spending—which also means higher taxes—than in other cities.[10]

[9] Ernst & Young LLP and Council on State Taxation. 2015. "Total State and Local Business Taxes: State-by-State Estimates for Fiscal Year 2014." Pg. 16-19.

[10] For an analysis that looks at the factors that drive differences in spending and revenue across states, see "Assessing Fiscal Capacities of States: A Representative Revenue System-Representative Expenditure System Approach, Fiscal Year 2012" by Tracy Gordon, Richard C. Auxier, and John Iselin published by the Urban Institute (March 8, 2016). For an analysis that looks at cities, see "The Fiscal Health of U.S. Cities" by Howard Chernick and Andrew Reschovsky in *Is Your City Healthy? Measuring Urban Fiscal Health* published by the Institute on Municipal Finance and Governance.

Classification and Preferential Treatment of Homestead Properties

Classification is the fourth factor that helps to explain differences across cities in property tax rates on homesteads. Under classified property tax systems, states and cities build preferences into their tax systems that result in lower effective tax rates for certain classes of property, with these features usually designed to benefit homeowners.

The "classification ratio" describes these preferences by comparing the effective tax rate for two types of property. For example, if a city has a 3.0% effective tax rate on commercial properties and a 1.5% effective tax rate on homestead properties, then the commercial-homestead classification ratio is 2.0 (3.0% divided by 1.5%). An increase in the classification ratio will be associated with a decrease in the tax rate on homestead properties, because it means that homeowners are collectively bearing a smaller share of the property tax burden while businesses and/or renters pay more. For example, Figure 1 shows that a 1 percent increase in the commercial-homestead classification ratio is associated with a 0.36 percent decrease in the effective tax rate on a median valued home, and a 1 percent increase in the apartment-homestead classification ratio is associated with a 0.44 percent decrease.

New York City has the highest classification ratios for both commercial and apartment properties relative to homesteads. This means that commercial buildings and apartments are taxed at a dramatically higher percentage of market value than owner-occupied residences. In New York, a $1 million commercial property faces an effective tax rate that is 4.2 times higher than a median valued home, while a $600,000 apartment building has an effective tax rate that is 5.1 times higher. As a result, among the largest cities in each state, New York City has the 7th lowest tax rate on a median valued home, but the highest tax rate on apartments and the 2nd highest rate on commercial properties.[11] In New York, homeowners are heavily subsidized at the expense of renters and businesses.[12]

The New York City example shows the other side of the classification equation: favoring homeowners by definition means higher property taxes on businesses and apartment buildings. Regression analysis shows that a 1 percent increase in the commercial-homestead classification ratio is associated with a 0.50 percent increase in the commercial property tax rate, and a 1 percent increase in the apartment-homestead classification ratio is associated with a 0.63 percent increase in the apartment tax rate. [13]

Note that while renters do not pay property tax bills directly, they do pay property taxes indirectly since landlords are able to pass through some of their property taxes by increasing rents.[14] Since renters have lower incomes than homeowners on average, preferences given to homesteads relative to apartment buildings will tend to make the property tax system more regressive.

[11] Appendix tables 2b, 5a, and 3a.

[12] Josh Barro. 2013. "If You Live in New York and You Rent, You're Paying A Huge Tax You Don't Even Know About." *Business Insider*. June 28.

[13] Results for commercial properties are shown in Appendix Table 1d. The analysis with effective tax rates on apartments as the dependent variable uses the same set of explanatory variables; each variable has the same level of statistical significance as in Appendix table 1c and the R-square is very similar (0.739).

[14] Bowman, John H., Daphne A. Kenyon, Adam Langley, and Bethany P. Paquin. 2009. "Property Tax Circuit Breakers: Fair and Cost-Effective Relief for Taxpayers." Cambridge, MA: Lincoln Institute of Land Policy. Pg. 32.

Other Factors

The four key factors described above explain nearly three-quarters of the variation in cities' effective tax rates on median valued homes, and are thus the most important causes of differences in tax rates across cities. However, there are other factors that also play a role. For example, two variables that could affect property tax rates are the level of state and federal aid and local governments' share of total state and local government spending in each state. However, the impact of these variables will depend on how exactly the state government structures aid or takes on service responsibilities otherwise provided by local governments.

It is reasonable to expect that higher state aid will allow local governments to reduce their reliance on property taxes and thus lead to lower property tax rates. But in fact, research shows that the impact of state aid on local property taxes is ambiguous, and depends on how state aid is structured. Some state aid formulas can limit local spending, in which case state aid is likely to reduce property taxes. However, other aid formulas like matching grants can encourage higher local spending, and thus state aid may not reduce property taxes in those cases.[15]

Similarly, if the state government bears a larger share of state and local government expenditures, it makes sense that local government spending and the need for property taxes might decline. That would be the case if the state assumes responsibility for public services that would otherwise be provided by local governments, such as in Hawaii where there is a single statewide school district and thus no local expenditures on K-12 education. But it is also possible that state expenditures are higher because the state government spends more on traditional state responsibilities, like higher education or public welfare, in which case higher state spending would not lead to lower local government expenditures.

The regression analysis used for this section considered these two other variables, but they were not found to be related with effective tax rates at a statistically significant level. This finding is not surprising since the expected impact of these variables depends on institutional details that are not captured by a single measure of state aid or state expenditures.

[15] Kenyon, Daphne A. 2007. *The Property Tax-School Funding Dilemma*. Cambridge, MA: Lincoln Institute of Land Policy. Page 50.

Homestead Property Taxes

Figure 2 shows property taxes on a median valued home for the largest city in each state. The analysis looks at homesteads, which are owner-occupied primary residences. The average effective tax rate on median-valued homesteads for the 53 cities in Figure 2 is 1.503 percent. At that rate, a home worth $200,000 would owe $3,006 in property taxes (1.503% x $200,000).

Tax rates vary widely across the 53 cities. The three cities at the top of the chart – Bridgeport (CT), Detroit, and Aurora (IL) – have effective tax rates that are roughly 2.5 times higher than the average for the 53 cities. In five other cities, the effective property tax rate on a median valued home is 1.5 to about 2 times the average. Conversely, the bottom six cities – Honolulu, Cheyenne (WY), Denver, Birmingham (AL), Boston, and Washington (DC) – all have effective tax rates that are less than half of the study average.

Overall, the average effective tax rate for all cities fell slightly between 2014 and 2015, from 1.511 percent of value to 1.503 percent. The effective tax rate on the median-valued homestead climbed in 20 cities, fell in 31, and remained unchanged in 2 cities. The largest increase was in Phoenix, where the effective rate rose by about 12%, largely due to a higher nominal tax rate, with a corresponding increase in rank from 37th to 30th highest. Other cities where effective tax rates climbed by at least 5 percent include: Des Moines, Aurora (IL), Fargo, Indianapolis, Columbia (SC), and Newark (listed from largest increase to the smallest).

Effective rates on median-valued homesteads fell the farthest in Sioux Falls (SD), which had a 9.4 percent decline and a six-place drop in rank, from 23rd to 29th highest. Other cities with declines of at least 5 percent include: Chicago, Seattle, Billings (MT), Memphis, and Boston (listed from largest decrease to the smallest).

Note that in addition to effective tax rates, Figure 2 also reports the tax bill on a median valued home for each city. Because of significant variations in home values across these cities, some cities with modest tax *rates* can still have high tax *bills* on a median valued home relative to other cities, and vice versa. For example, Bridgeport and Detroit have similar tax rates on a median valued home, but because the median valued home is worth so much more in Bridgeport ($173k vs. $42k), the tax bill is far higher in Bridgeport (2nd highest) than in Detroit (42nd highest). In general, cities with high home values can raise considerable property tax revenue from a median valued home despite modest tax rates, whereas cities with low home values may have fairly low tax bills even with high tax rates.

The table on the next page shows cities with the largest differences in their ranking in terms of effective tax rates versus tax bills on a median valued home. Note that most of this report uses fixed home values (i.e., $300k home in all cities) to estimate effective tax rates, which forces the ordering of cities in terms of tax rates to match the order for tax bills.

Cities with Largest Differences in Ranking on Effective Tax Rate vs. Tax Bill, for a Median Valued Home (2015)

High Home Values Cities with high tax bills despite low tax rates			**Low Home Values** Cities with low tax bills despite high tax rates		
City	**Tax Rate**	**Tax Bill**	**City**	**Tax Rate**	**Tax Bill**
Washington (DC)	48	13	Detroit (MI)	2	42
Seattle (WA)	42	10	Buffalo (NY)	17	50
New York (NY)	37	7	Jackson (MS)	20	47
Boston (MA)	49	20	Memphis (TN)	14	38
Los Angeles (CA)	33	6	Wichita (KS)	24	46

Appendix Table 2b is similar to Table 2a except that it accounts for the effect of assessment limits, which restrict growth in the assessed value of individual parcels for property tax purposes. These limits reduce estimates of homestead property taxes for 11 of the 53 cities, with the largest impacts on Los Angeles, New York City, and Portland (OR). Overall, accounting for assessment limits reduces the average property tax bill for the 53 cities by 4 percent. For more details on the impact of assessment limits, see that section of this report.

Appendix Table 2c shows how effective tax rates on homestead properties vary based on their value, showing tax rates for properties worth $150,000 and $300,000 for the largest city in each state. As the table notes, effective tax rates vary with property value about half of the time (26 of 53 cities). Usually, effective tax rates rise with homestead value because of homestead exemptions and property tax credits that are set to a fixed dollar amount. Under these programs, the percentage reduction in property taxes falls as home values rise. For example, a $20,000 exemption provides a 20 percent tax cut on a $100,000 home, a 10 percent cut on a $200,000 home, and a 5 percent cut on a $400,000 home.[16] However, other design elements can create the same effect. For example, Minnesota uses a tiered assessment system, where 1% of a home's market value is taxable up through $500,000 of value, while 1.5% of value above that is taxable.

Value-driven differences in effective tax rates make the biggest difference in Boston, which in 2015 offered a homestead exemption equal to the lesser of $140,210 or 90 percent of a property's market value. This results in an ultra-low effective tax rate of 0.113% on a $150,000 home, which is less than a quarter of the effective rate on a $300,000 home (0.500%). The other two cities with the largest differentials in the effective rates between a $150,000-valued home and a $300,000-valued home also offer substantial homestead exemptions: Honolulu ($80,000 exemption) and Washington, D.C. ($71,400 exemption).

Other cities where effective tax rates are considerably lower on a $150,000 home than a $300,000 home due to fixed dollar credits, exemptions, or other policies, include:

- Atlanta – eight place difference (31st highest for $150k, 23rd highest for $300k)
- New Orleans – eight place difference (45th highest for $150k, 37th highest for $300k)
- Boise – seven place difference (44th highest for $150k, 39th highest for $300k)

[16] For information on homestead exemptions in each state, see "How Do States Spell Relief: A National Study of Homestead Exemptions and Property Tax Credits" by Adam H. Langley in *Land Lines* (April 2015).

- Jacksonville – seven place difference (25th highest for $150k, 20th highest for $300k)
- Little Rock – seven place difference (36th highest for $150k, 29th highest for $300k)

Readers should use some caution when interpreting the results in Appendix Tables 2c, 2f, and 2h; see the box on comparing property taxes calculated with fixed property values (page 22).

Appendix Tables 2d through 2f show effective tax rates on homestead properties for a different set of cities. Whereas Tables 2a through 2c focus on the largest city for each state, Tables 2d through 2f show the 50 largest cities in the country regardless of their state. There is considerable overlap between the two groups of cities, but some significant differences as well. In this set of tables, California has eight cities, Texas has six, Arizona has three, and six states have two cities each (CO, FL, NC, OH, OK, and TN). There are 21 states without any cities in the top 50. As with the tables for the largest city in each state, there are two sets of tables for median-valued homes; one before and one after accounting for the effects of assessment limitations (Tables 2d and 2e respectively).

The average effective tax rates for homesteads are generally about 2 to 3 percent lower for the 50 largest cities than for the largest city in each state. The exception is when comparing median-valued homes after accounting for assessment limitations. For those cities, the discrepancy is bigger (a 6.4% difference), largely because the share of top 50 cities with assessment limits in effect is much larger than the share on a nationwide basis.

Effective tax rates can be rather homogenous across large cities in a single state. For example, consider the effective rates on median-valued homes in the two largest states shown in Table 2d:

- In the eight California cities, the highest effective tax rate is Oakland (21st highest) and the lowest is Long Beach (39th). However, California accounts for six of the ten cities ranked between 30th and 39th, with effective tax rates clustering in the 1.1 to 1.2 percent range due to the effect of California's Proposition 13 limitations on tax rates.
- In the six Texas cities, the highest effective tax rate is El Paso (3rd highest) and the lowest is Houston (14th), with Texas accounting for four of the six cities ranked between 3rd and 8th. It is more difficult to point to a single feature of Texas' property tax system to explain this clustering. However, it likely reflects the fact that local governments in these six Texas cities have relatively high reliance on property taxes and that Texas has a uniform property tax system that does not allow for different tax rates or assessment ratios on different types of property.

However, in other cases there can be considerable differences in effective tax rates between cities within the same state. For example, Table 2d shows some noticeable differences in effective tax rates and rankings for median-valued homes between these sets of same-state cities:

- In Tennessee: Memphis has the 13th highest tax rate (1.837%), while Nashville has the 42nd highest (0.996%) – a 29 place differential.
- In Arizona: Phoenix has the 27th highest tax rate (1.228%) and Tucson has the 28th highest rate (1.209%), while Mesa has the 46th highest (0.830%) – a 19 place differential between the neighboring cities of Phoenix and Mesa.

Appendix Tables 2g and 2h provide additional information about how effective property tax rates vary across states by looking at a rural community in each state. The rural analysis includes county seats with populations between 2,500 and 10,000 located in nonmetropolitan counties.

The average effective tax rate on median-valued homes in the 50 rural communities in this report is 1.326% for taxes paid in 2015. As with large cities, the rates for rural municipalities vary considerably around that average. In three municipalities – Ridgway (PA), Warsaw (NY), and Lancaster (NH) – the effective tax rates on median-valued homes are 2 times the average or more. However, ten municipalities feature effective tax rates of less than half of the average, with the lowest rates in Kauai (HI), Pocahontas (AR), Monroeville (AL), Natchitoches (LA), and Wise (VA).

Comparing Tables 2a and 2g shows that effective tax rates on median-valued homesteads are around 6 percent lower in rural municipalities than in large cities on average. There are two major reasons why rates are lower in rural communities: lower nominal tax rates and homestead exemptions that apply to a fixed amount of value across the state and therefore exempt higher proportions of homestead value from taxation in rural areas, where home values are generally much lower than in large cities.

In 33 states, the effective tax rate on the median-valued home is higher in the largest city than in the rural municipality. Arkansas has the biggest difference; the 1.128% rate in Little Rock is over five times the 0.215% rate in Pocahontas. In three other states the tax rate in the largest city is at least two times higher than in the rural community: Delaware, Louisiana, and Tennessee (listed alphabetically).

On the other hand, in 17 states the effective tax rate on median-valued homes is higher in the rural municipality than in the largest city in the state. The biggest difference is in Massachusetts, where the effective tax rate in Adams is more than three times higher than the rate in Boston (2.09% vs. 0.67%), largely because of Boston's unique (within Massachusetts) homestead exemption. Other states where the tax rate in the rural community is at least 1.5 times higher than the largest city are Kansas, New York[17], and Pennsylvania (listed alphabetically).

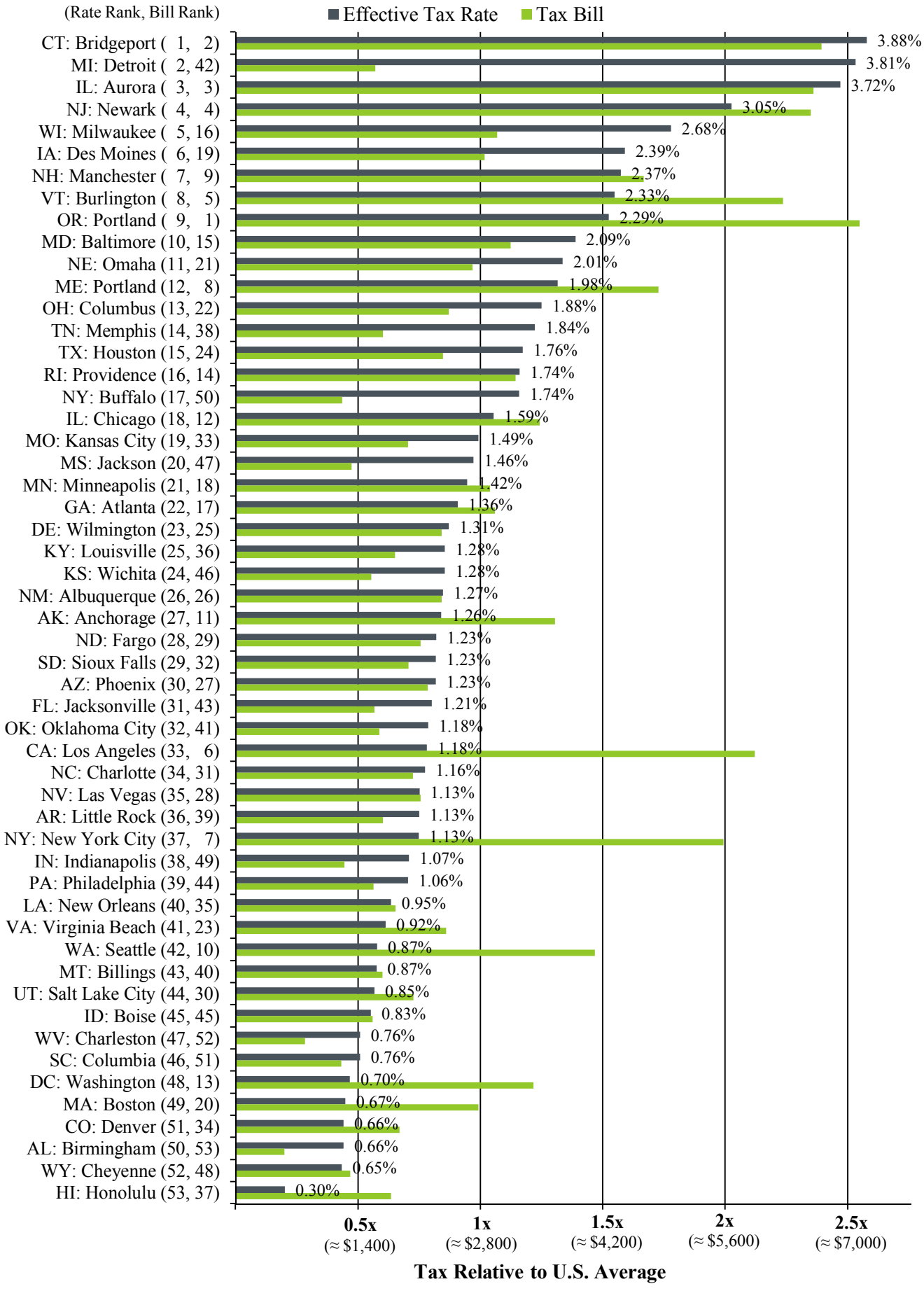
Some readers may want to use findings on effective tax rates from one specific table to reach conclusions on property taxes throughout an entire state. The small differences in tax rates across cities in California and Texas (Appendix Tables 2d-2f) show that the largest city in each state can serve as a proxy for property tax rates throughout an entire state. However, the large differences between the two largest cities in Tennessee and Arizona show that caution is needed when extrapolating findings for a single city to an entire state.

Readers wishing to determine whether taxes in a state are high, low, or somewhere in between are best served by comparing the rankings for urban and rural municipalities. For example, in six states (Illinois[18], Michigan, New Hampshire, New Jersey, Vermont, and Wisconsin) the effective tax rate on the median-valued home is among the ten highest in both a rural and an urban setting – suggesting that these states are most likely to have the highest homestead property taxes.

[17] When Buffalo and New York City are averaged.
[18] Aurora only.

Alabama, Colorado, Hawaii, West Virginia, and Washington (DC) are the five states where effective tax rates on median-valued homes are among the ten lowest in both urban and rural (where applicable) settings – suggesting that these states are most likely to have the lowest homestead property taxes.

Figure 2: Property Taxes on Median Valued Home for Largest City in Each State (2015)



Commercial Property Taxes

Figure 3 shows effective property tax rates for commercial properties worth $1 million dollars for the largest city in each state. This analysis looks specifically at taxes on office buildings, hotels, and other commercial properties without inventory on site. Tax rates for other types of commercial property will often be similar, but will vary in cities where personal property is taxed differently than real property. The analysis assumes each property has an additional $200,000 worth of fixtures, which includes items such as office furniture, equipment, display racks, and tools. Different types of commercial property will have different proportions of real and personal property. Therefore, effective tax rates will change between different types of commercial property in cities where personal property is taxed differently from real property.

The average effective tax rate on commercial properties for the 53 cities in Figure 3 is 2.113 percent. A property worth $1 million with $200,000 in fixtures would thus owe $25,357 in property taxes (2.113% x $1.2m).

Tax rates vary widely across the 53 cities. The top five cities of Detroit, New York City, Providence, Chicago, and Bridgeport all have effective tax rates that are at least two-thirds higher than the average for these cities. The bottom five cities of Cheyenne, Seattle, Honolulu, Virginia Beach, and Wilmington (DE) all have tax rates that are less than half of the average.

A few of the cities had significant changes in their effective tax rates from 2014 to 2015. The cities with the largest declines in their tax rates were Columbus (OH) and Boston. Growing underassessment of commercial properties led the effective tax rate on a $1-million valued commercial property in Columbus to decline by almost a quarter, from 2.16% to 1.62%, with the city's ranking falling from 26th to 32nd.[19] In Boston, the effective tax rate fell by a fifth, from 2.88% to 2.24%, so that the city's ranking dropped from 13th to 24th. Other cities with significant drops in their tax rate rankings were Des Moines, IA (from 5th to 9th) and Billings, MT (from 44th to 48th).

Baltimore had the largest increase in effective tax rates on commercial properties from 2014 to 2015. The city's effective tax rate on a commercial property worth $1 million increased by less than 10%, from 2.46% to 2.66%, so that Baltimore's ranking rose from 19th to 16th. No other city increased its ranking by more than two places; however, eleven cities' rankings increased by two spots from 2014.

Appendix Table 3a shows how effective tax rates on commercial properties vary based on their value, showing tax rates for properties worth $100,000, $1 million, and $25 million (all have fixtures worth 20% of the real property value). Effective tax rates for commercial properties generally do not vary based on property values, unlike homestead properties, where exemptions or other tax relief programs often create significantly lower rates on lower valued properties.

Only 10 of the 53 cities have effective tax rates that vary based on their value. Value-driven differences in effective tax rates make the biggest difference in rankings in Philadelphia.

[19] The sales ratio for commercial properties in Columbus fell from 92.4% to 68.8%.

Philadelphia has among the lowest tax rates for commercial properties worth $100,000 (1.106%, 47th lowest), but is just slightly below average for commercial properties worth $25 million (2.031%, 28th lowest). The city offers property owners a credit against the first $2,000 of Business Use and Occupancy Tax (effectively, a property tax imposed only on business properties) assessed against individual properties, and this credit creates this large differential. The credit reduces the tax on a $100,000-valued property by 45%, but by only 0.3% for a property worth $25 million.

Other cities where the rankings vary significantly because of beneficial tax treatment provided to lower-valued properties through credits, exemptions, or preferential assessment practices include:

- Des Moines (22nd highest for $100k, 8th highest for $25m)
- Washington, DC (41st highest for $100k, 30th highest for $25m)
- Minneapolis (16th highest for $100k, 7th highest for $25m)
- Phoenix (24th highest for $100k, 17th highest for $25m)

Appendix Table 3b shows effective tax rates on commercial properties for a different set of cities. Whereas Table 3a has the largest city for each state, Table 3b shows the 50 largest cities in the country regardless of their state. There is considerable overlap between the two groups of cities, but some significant differences as well. In Table 3b, California has eight cities, Texas has six cities, Arizona has three cities, and six states (CO, FL, NC, OH, OK, and TN) have two cities each. There are 21 states without any cities in the top 50 shown in Table 3b. Appendix Table 3b also shows effective tax rates on commercial properties worth $100,000, $1 million, and $25 million (with fixtures worth 20% of the real property value).

The average effective tax rates for commercial properties is slightly lower for the 50 largest cities shown in Table 3b than the cities shown in Table 3a—about 4 to 5 percent lower for the three property values analyzed.

In some states, tax rates do not vary too much across the largest cities. For example, consider tax rates for commercial properties worth $1 million in the two largest states:

- For California's eight cities, the highest tax rate is in Oakland (36th highest) and the lowest is in Long Beach (46th). California accounts for 8 of the 11 cities ranked between 36th and 46th.
- For Texas's six cities, the highest tax rate is in Fort Worth (11th highest) and the lowest is in Austin (22rd). Texas accounts for five of the six cities ranked between 11th and 16th.

However, in other cases there can be considerable differences in effective tax rates between cities within the same state. There are actually larger differences in tax rates for the states with just two cities:

- In Tennessee: Memphis has the 6th highest tax rate, while Nashville has the 32nd highest.
- In Ohio: Cleveland has the 17th highest tax rate, while Columbus has the 30th highest.
- In Colorado: Denver has the 18th highest tax rate, while Colorado Springs has the 28th highest.

Appendix Table 3c provides additional information about how effective property tax rates vary across states by looking at a rural community in each state. The rural analysis includes county seats with populations between 2,500 and 10,000 that are located in nonmetropolitan counties.

On average, commercial tax rates are about 17 to 18 percent lower for the 50 rural communities than the largest cities in each state. For a property worth $1 million, the average effective tax rate is 1.75% for the rural cities versus 2.11% for the urban cities shown in Appendix Table 3a. For 34 states, the effective tax rate on a $1-million valued commercial property is lower in the selected rural municipality than in the state's largest city.

The state with the biggest difference in the tax rate in the largest city and the rural municipality is Tennessee, where the tax rate on a commercial property worth $1 million in Savannah (TN) is about a third of the rate in Memphis (1.01% vs. 2.84%). Other states where the tax rate in the rural community is significantly lower than the largest city include Delaware (52% lower), Arkansas and Connecticut (both 50% lower), and Oregon (49% lower).

On the other hand, in 16 states the tax rate is higher in the rural municipality than in the largest city in the state. The biggest difference is in Kansas, where the tax rate on a commercial property worth $1 million in Iola is more than 60 percent higher than the rate in Wichita (4.55% vs. 2.83%). Other states where the tax rate in the rural municipality is significantly higher than the largest city include Washington (43% higher), Pennsylvania (35% higher), Florida (30% higher), and Wyoming (22% higher).

Variation in tax rates across the 50 rural cities is very similar to variation across the largest cities in each state.

Some readers may want to use findings on effective tax rates from one specific table to reach conclusions on property taxes throughout an entire state. The small differences in tax rates across cities in California and Texas (Appendix Table 3b) show that the largest city in each state can serve as a proxy for property tax rates throughout an entire state. However, the large differences between the two largest cities in Tennessee, Ohio, and Colorado show that caution is needed when extrapolating findings for a single city to an entire state.

Readers wishing to determine whether taxes in a state are high, low, or somewhere in between are best served by comparing the rankings for urban and rural municipalities. For example, five states (Iowa, Michigan, Minnesota, New York, and South Carolina) have multiple top ten rankings in both an urban and rural setting – suggesting that these states are most likely to have the highest commercial property taxes. Conversely, five states (Delaware, Hawaii, North Carolina, North Dakota, and Virginia) have multiple bottom ten rankings in both urban and rural settings.

Comparing Property Taxes Calculated with Fixed Property Values

This report uses fixed property values (i.e. $1 million in all cities) to control for the impact local real estate conditions have on relative tax burdens. However, differences in property values – driven largely by differences in land values – mean identically valued properties often look very different across the country. For example, a $1 million property in Detroit is very different from a $1 million parcel in New York City. For two properties with different values but identical characteristics (i.e. similar square footage, amenities, etc.) in two cities with the same effective tax rates, the property tax bill will be higher in dollar terms in the city with high property values than the city with low values.

For taxes on commercial, industrial, and apartment properties, the report solely uses fixed property values. As a result, if the goal is to compare taxes due on properties with similar characteristics (i.e. 5000 square feet in the central business district), the net tax *bills* (i.e. $3,000) will be underestimated in cities with high property values and overestimated in cities with low property values. In contrast, data on effective tax *rates* (i.e. 1.5 percent) will be largely unaffected by the property value chosen for the analysis, because effective tax rates usually do not increase with property values for business properties. For this reason, it is better to use data on effective tax *rates* when making cross-city comparisons for taxes on commercial, industrial, and apartment properties.

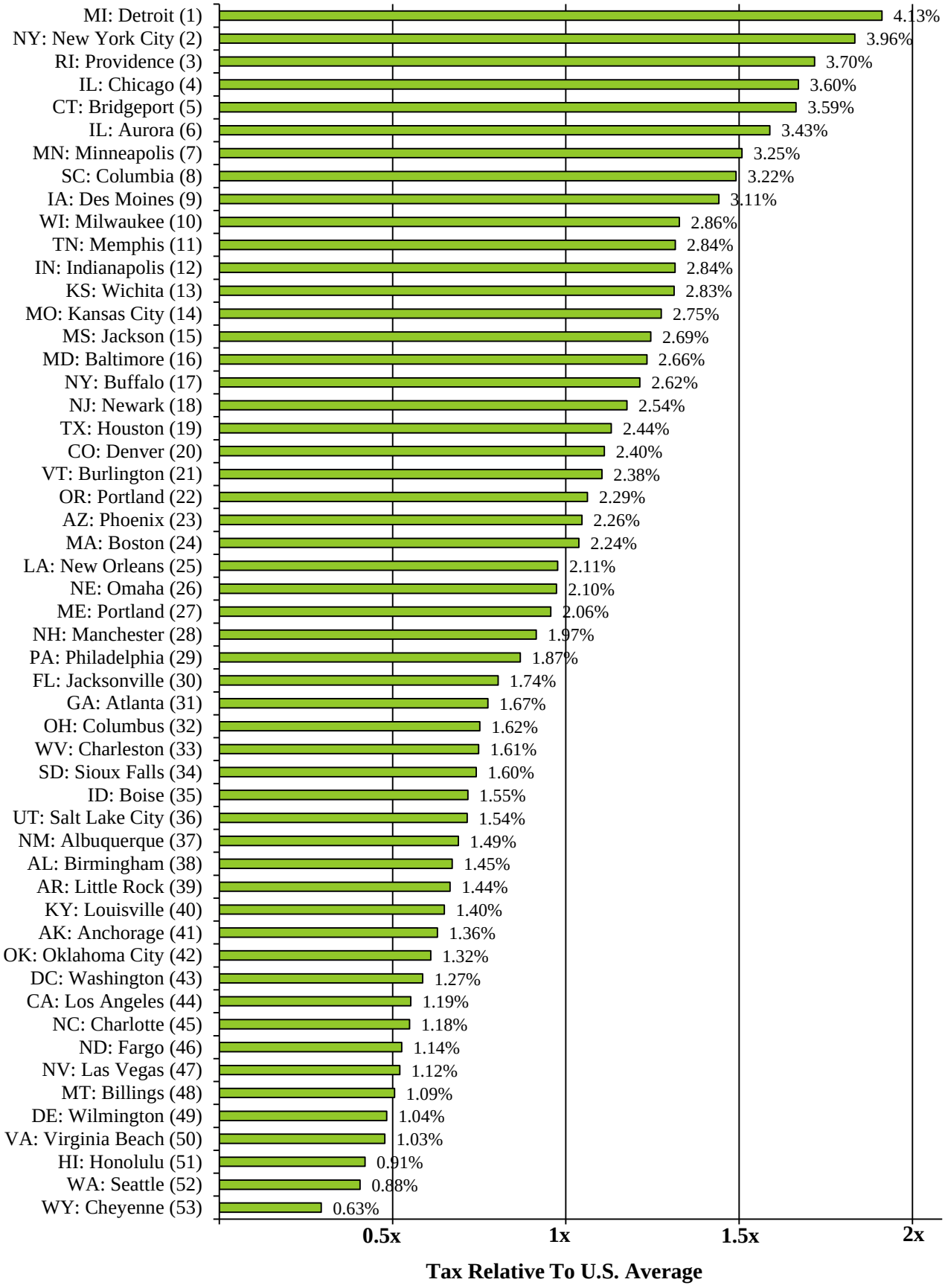
In addition, fixed property values are not problematic from the perspective of a real estate investor looking to invest a certain amount of money—whether it's a $1 million condo in New York or a $1 million apartment complex in Detroit.

Note that the use of fixed property values also makes year-to-year comparisons of effective tax rates or tax bills challenging because property values change over time. A $1 million property in 1995 looks very different than a $1 million property in 2015 in most cities.

For homestead property taxes, the report analyzes property taxes on median valued homes, which adjusts for differences in property values, and thus allows for comparisons of property taxes on a "typical" home across cities and over time.

Figure 3: Commercial Property Taxes for Largest City in Each State (2015)

Effective Tax Rate for $1-Million Valued Property (plus $200k in Fixtures)



Industrial Property Taxes

Figure 4 shows effective property tax rates for industrial properties with $1 million worth of real property for the largest city in each state. This analysis looks specifically at taxes on manufacturing properties. We assume that each property has an additional $1 million of personal property, consisting of $500,000 of machinery and equipment, $400,000 of inventories, and $100,000 of fixtures. Differences in personal property taxation have significant impacts on effective tax rates for industrial properties, as described in the box on the next page. Readers should use some caution when interpreting these results; see the box on comparing property taxes calculated with fixed property values for guidance (page 22).

The average effective tax rate on industrial properties for the 53 cities in Figure 4 is 1.569 percent. A parcel with a real property value of $1 million that has an additional $1 million in personal property would thus owe $31,375 in property taxes (1.569% x $2m total parcel value). For shorthand, this section refers to parcels based on their real property values.

Tax rates vary widely across the 53 cities. The top five cities of Columbia (SC), Detroit, Jackson (MS), Memphis, and Houston all have effective tax rates that are at least 60% higher than the average for these cities. The bottom five cities of Virginia Beach, Honolulu, Wilmington (DE), Cheyenne, and Fargo all have tax rates that are less than half of the average.

Some cities had significant changes in their effective tax rates from 2014 to 2015. Similarly to commercial properties, the cities with the largest declines in their industrial property tax rates were Columbus (OH), Des Moines, and Boston. In Boston, the effective tax rate fell by nearly 15%, from 1.59% to 1.36%, so that the city's ranking dropped from 23rd to 32nd. The continued phase-in of Iowa's business property tax changes, which lowered the assessment ratio and provided an increased tax credit, influenced the 14% drop in the effective tax rate on a manufacturing parcel in Des Moines. Other cities with significant declines include Columbus (OH), which had a 13% drop in its effective tax rate and thus fell from 32nd to 36th in the rankings, and Atlanta, which fell from 20th to 25th.

Baltimore had the largest increase in effective tax rates on industrial properties from 2014 to 2015. The city's effective tax rate on an industrial property worth $1 million increased by 10%, from 1.19% to 1.32%, so that the city's ranking rose from 38th to 33rd. Two other cities experienced notable increases in their ranking, with each moving up five spots from 2014: Bridgeport (CT) rose from 17th to 12th and Oklahoma City rose from 33rd to 28th.

Appendix Table 4a shows how effective tax rates on industrial properties vary based on their value, showing tax rates for properties worth $100,000, $1 million, and $25 million (all have personal property worth 100% of the real property value). As the table notes, effective tax rates for industrial properties generally do not vary based on property values, unlike homestead properties, where exemptions or other tax relief programs often create significantly lower rates on lower valued properties.

Taxes on Personal Property

Property taxes are often imposed differently on real property (the value of land and buildings) versus personal property (the value of machinery and equipment, inventories, and fixtures). For example, Appendix Table 4g shows how three categories of personal property are taxed in the largest cities in each state:

- **Machinery and equipment**, which includes things like assembly robots and milling machines, is fully exempt from taxation in 21 cities. In another 10 cities, the property tax system provides preferential treatment to machinery and equipment over real property. In contrast, real property is treated preferentially relative to personal property in five cities.
- **Manufacturers' inventories**, which include raw materials, supplies, unfinished products, and similar items, are fully exempt from taxation in 43 cities. In another 4 cities, inventories receive preferential treatment relative to real property, while the reverse is true in 2 cities.
- **Fixtures**, which include office furniture, equipment, display racks, and tools, are fully exempt from taxation in 15 cities. In another 8 cities, the property tax system provides preferential treatment to fixtures relative to real property, while fixtures are taxed more heavily than real property in 10 cities.

Because personal property is often taxed at a lower rate than real property, the effective tax rate on business properties usually depends on the share of a parcel's total value (i.e. real property + personal property) that comes from personal property. That means estimates of effective tax rates depend on assumptions about the split of total parcel value between real and personal property.

However, the split between real and personal property varies by industry and location. Our modeling indicates that personal property's share of total parcel value ranges from a low of 31.7% for apparel manufacturers to a high of 67.4% for motor vehicle manufacturers. After applying state-specific weights for each manufacturing type, the median state has 56% of total industrial parcel value in personal property with the minimum amount being 49% (Oregon) and the maximum being 59% (Michigan).[20]

Because estimates of effective tax rates are sensitive to assumptions about personal property's share of total parcel value, we present two sets of estimates for industrial properties: personal property accounts for 50% of total parcel value in one set of estimates and 60% in the other set. The first set will be a better reflection of effective tax rates for industries and states where personal property accounts for a smaller share of total parcel value (like apparel manufacturers and Oregon), while the second set will be better when personal property accounts for a larger share of total parcel value (like motor vehicle manufacturers and Michigan).

Only 11 of the 53 cities have effective tax rates that vary based on their value. Value-driven differences in effective tax rates make the biggest difference in rankings in Washington, D.C. The District of Columbia has one of the lowest tax rates for industrial properties worth $100,000 (0.760%, 45th highest), but is somewhat above average for industrial properties worth $25 million (1.845%, 28th highest). The city exempts the first $225,000 of business personal

[20] To determine personal property's share of total parcel value, we replicate the methodology used by the Minnesota Department of Revenue's Research Division in their biennial *Tax Incidence Study*. These studies are available on their website: http://www.revenue.state.mn.us/research_stats/Pages/Tax_Incidence_Studies.aspx.

property, which is effectively a complete personal property exemption for the $100,000-valued parcel but only exempts 0.9% of the personal property associated with the $25 million-valued parcel. The exemption reduces the total tax on a $100,000-valued property by more than half but by less than 1% for a property worth $25 million.

Other cities where the rankings vary significantly because of beneficial tax treatment provided to lower-valued properties through credits, exemptions, or preferential assessment practices include:

- Phoenix (31st highest for $100k, 8th highest for $25m)
- Des Moines (27th highest for $100k, 15th highest for $25m)
- Billings (MT) (51st highest for $100k, 39th highest for $25m)
- Philadelphia (49th highest for $100k, 37th highest for $25m)

Appendix Table 4c shows effective tax rates on industrial properties for a different set of cities. Whereas Table 4a has the largest city for each state, Table 4c shows the 50 largest cities in the country regardless of their state. There is considerable overlap between the two groups of cities, but some significant differences as well. In Table 4c, California has eight cities, Texas has six cities, Arizona has three cities, and six states (CO, FL, NC, OH, OK, and TN) have two cities each. There are 21 states without any cities in the top 50 shown in Table 4c. Appendix Table 4c also shows effective tax rates on industrial properties worth $100,000, $1 million, and $25 million (again with personal property equal to 100% of the real property value).

The average effective tax rate for industrial properties is slightly higher for the 50 largest cities shown in Table 4c than the cities shown in Table 4a—about 3 to 3.5 percent higher, depending on which of the three property values is analyzed.

In some states, tax rates do not vary too much across the largest cities. For example, consider tax rates for industrial properties worth $1 million in the two largest states:

- For California's eight cities, the highest tax rate is in Oakland (34th highest) and the lowest is in Long Beach (43rd). California accounts for 8 of the 10 cities ranked between 34th and 43rd.
- For Texas's six cities, the highest tax rate is in Fort Worth (highest among the 50) and the lowest is in Austin (9th). Texas accounts for the top three cities and six of the nine cities ranked between 1st and 9th.

However, in other cases there can be considerable differences in effective tax rates between cities within the same state. Consider these noticeable differences in ranking (with the associated effective tax rates) for the $1 million-valued industrial properties in states with two cities among the nation's largest fifty:

- In Tennessee: Memphis has the 6th highest tax rate (2.635%), while Nashville has the 32nd highest (1.474%).
- In Colorado: Denver has the 17th highest tax rate (1.920%), while Colorado Springs has the 31st highest (1.362%).
- In Ohio: Cleveland has the 19th highest tax rate (1.773%), while Columbus has the 34th highest (1.234%).

Appendix Table 4e provides additional information about how effective property tax rates vary across states by looking at a rural community in each state. The rural analysis includes county seats with populations between 2,500 and 10,000 that are located in nonmetropolitan counties.

On average, industrial tax rates are about 17 to 18 percent lower for the 50 rural communities than the largest cities in each state. For a property worth $1 million, the average effective tax rate is 1.287% for the rural cities versus 1.569% for the urban cities shown in Appendix Table 4a. For 34 states, the effective tax rate on a $1-million valued industrial property is lower in the selected rural municipality than in the state's largest city.

The state with the biggest difference in the tax rate in the largest city and the rural municipality is Tennessee, where the tax rate on an industrial property worth $1 million in Savannah (TN) is about a third of the rate in Memphis (0.94% vs. 2.64%). Other states where the tax rate in the rural municipality is significantly lower than the largest city include Delaware (52% lower), Connecticut (51% lower), and Arkansas and Oregon (both 49% lower).

On the other hand, in 16 states the tax rate is higher in the rural municipality than in the largest city in the state. The biggest difference is in Kansas, where the tax rate on an industrial property worth $1 million in Iola is more than 60 percent higher than the rate in Wichita (2.50% vs. 1.55%). Other states where the tax rate in the rural municipality is significantly higher than the largest city include Washington (42% higher), Virginia (39% higher), Pennsylvania (35% higher), and Florida (29% higher).

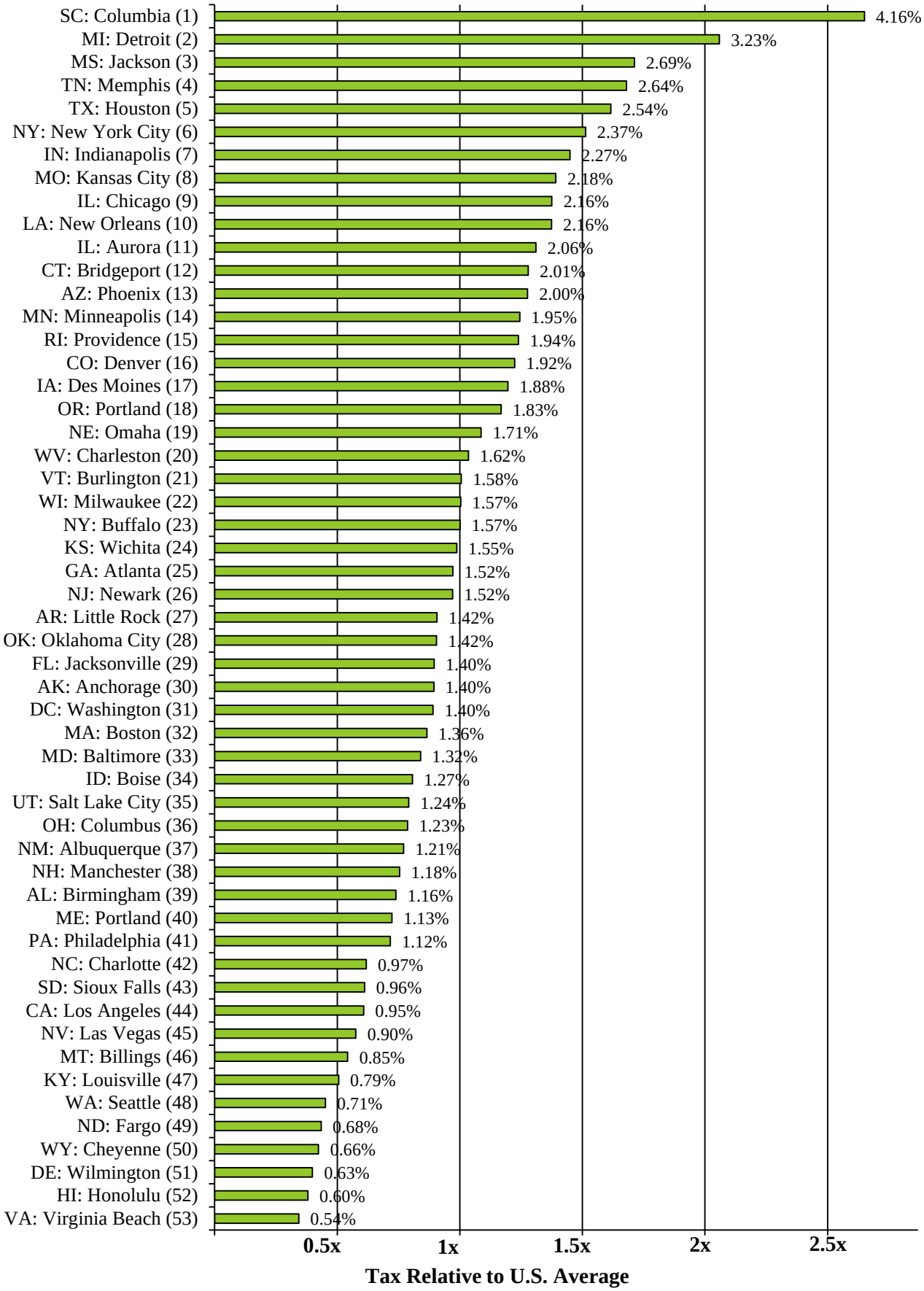
Variation in industrial tax rates across the 50 rural cities is very similar to variation across the largest cities in each state.

Some readers may want to use findings on effective tax rates from one specific table to reach conclusions on property taxes throughout an entire state. The small differences in tax rates across cities in California and Texas (Appendix Table 4c) show that the largest city in each state can serve as a proxy for property tax rates throughout an entire state. However, the large differences between the two largest cities in Tennessee, Ohio, and Colorado show that caution is needed when extrapolating findings for a single city to an entire state.

Readers wishing to determine whether taxes in a state are high, low, or somewhere in between are best served by comparing the rankings for urban and rural municipalities. For example, five states (Indiana, Michigan, Mississippi, South Carolina, and Texas) have at least three top ten rankings in both an urban and rural setting – suggesting that these states are most likely to have the highest industrial property taxes. Delaware, Hawaii, Kentucky, North Dakota, and Wyoming are the five states that most often have bottom ten rankings in both urban and rural settings.

Figure 4: Industrial Property Taxes for Largest City in Each State (2015)

Effective Tax Rate for $1-Million Valued Property (plus $1 Million in Personal Property)



Apartment Property Taxes

Figure 5 shows effective property tax rates for apartment buildings worth $600,000 for the largest city in each state. The analysis assumes each property has an additional $30,000 worth of fixtures, which includes items such as stoves, refrigerators, garbage disposals, air conditioners, drapes, and lawn care equipment. Readers should use some caution when interpreting these results; see the box on comparing property taxes calculated with fixed property values for guidance (page 22).

The average effective tax rate on apartment properties for the 53 cities in Figure 5 is 1.907 percent. A property worth $600,000 with $30,000 in personal property would thus owe $12,016 in property taxes (1.907% x $630,000 total parcel value).

Tax rates vary widely across the 53 cities. The top two cities of New York City and Detroit have effective tax rates that are more than 2.5 times higher than the average for these cities. The next three cities (Aurora, IL; Des Moines, IA; and Bridgeport, CT) have effective tax rates that are roughly double the average for these cities. Conversely, there are eight cities where tax rates on apartments are less than half the average, with the lowest rates in Honolulu, Cheyenne, Denver, Washington (DC), and Virginia Beach.

Some cities had significant changes in their effective tax rates from 2014 to 2015. The cities where property tax rates on apartment properties declined by at least 15% were Columbus (OH), Virginia Beach, and Boston. In Boston, this effective tax rate reduction dropped the city's ranking from 40th to 45th highest. The continued phase-in of Iowa's business property tax changes, which lowered the assessment ratio, substantially influenced the effective tax rate reduction for apartments in Des Moines. Other cities with significant declines include Columbus (OH), which had a 25% drop in its effective tax rate and thus fell from 13th to 21st in the rankings, and Chicago which fell from 23rd to 27th.

The effective tax rate on apartments increased by 12% between 2014 and 2015 in Phoenix largely due to an increase in the city's nominal tax rate on apartments, so that city's ranking rose from 44th to 36th. Four other cities had notable increases in the effective tax rankings for apartments: Baltimore rose from 20th to 17th, Sioux Falls (SD) rose from 25th to 22nd, Charleston (WV) rose from 28th to 25th, and Salt Lake City rose from 49th to 46th.

Appendix Table 5b shows effective tax rates on apartment properties for a different set of cities. Whereas Table 5a has the largest city for each state, Table 5b shows the 50 largest cities in the country regardless of their state. There is considerable overlap between the two groups of cities, but some significant differences as well. In Table 5b, California has eight cities, Texas has six cities, Arizona has three cities, and six states (CO, FL, NC, OH, OK, and TN) have two cities each. There are 21 states without any cities in the top 50 shown in Table 5b.

The average effective tax rates for apartment properties is about 10 percent lower for the 50 largest cities shown in Table 5b than the cities shown in Table 5a. In some states, tax rates do not vary too much across the largest cities. For example, consider tax rates for apartment properties worth $600,000 in the two largest states:

- For California's eight cities, the highest tax rate is in Oakland (27th highest) and the lowest is in Long Beach (41st highest). There is a clustering effect as California accounts for 6 of the 7 cities ranked between 35th and 41st.
- For Texas's six cities, the highest tax rate is in Fort Worth (5th highest) and the lowest is in Austin (13th). Texas accounts for six of the nine cities ranked between 5th and 13th.

However, in some states there are considerable differences in effective tax rates between different cities. Consider these notable differences in rankings and effective tax rates between the cities in these states:

- In Tennessee: Memphis has the 3rd highest tax rate (2.911%), while Nashville has the 22nd highest (1.582%).
- In Ohio: Cleveland has the 6th highest tax rate (2.743%), while Columbus has the 16th highest (1.854%).
- In Arizona: Phoenix and Tucson have the 29th and 30th highest rates (1.311% and 1.296%, respectively), while Mesa has the 45th highest (0.929%).

Appendix Table 5c provides additional information about how effective property tax rates vary across states by looking at a rural community in each state. The rural analysis includes county seats with populations between 2,500 and 10,000 that are located in nonmetropolitan counties.

On average, apartment tax rates are about 16 percent lower for the 50 rural communities than the largest cities in each state. For the $600,000-valued apartment property, the average effective tax rate is 1.604% for the rural cities versus 1.907% for the large cities shown in Appendix Table 5a. For 34 states, the effective tax rate on a $600,000-valued apartment property is lower in the selected rural municipality than in the state's largest city.

The state where the tax rate in the largest city is the lowest vis-à-vis the rate for the rural municipality is Tennessee, where the tax rate on a $600,000-valued apartment property in Savannah is about a third of the rate in Memphis (1.03% vs. 2.91%). Other states where the tax rate in the rural municipality is significantly lower than the largest city include Delaware (55% lower), Connecticut (51% lower), Arkansas (50% lower) and Oregon (49% lower).

On the other hand, in 16 states the tax rate is higher in the rural municipality than in the largest city in the state. The biggest difference is in Pennsylvania, where the tax rate on an apartment property worth $600,000 in Ridgway is nearly 130 percent higher than the rate in Philadelphia (2.88% vs. 1.26%). Other states where the tax rate in the rural municipality is significantly higher than in the largest city include Massachusetts (86% higher), Hawaii (77% higher), Kansas (55% higher), and Washington (43% higher).

Variation in apartment tax rates across the 50 rural municipalities is very similar to variation across the largest cities in each state.

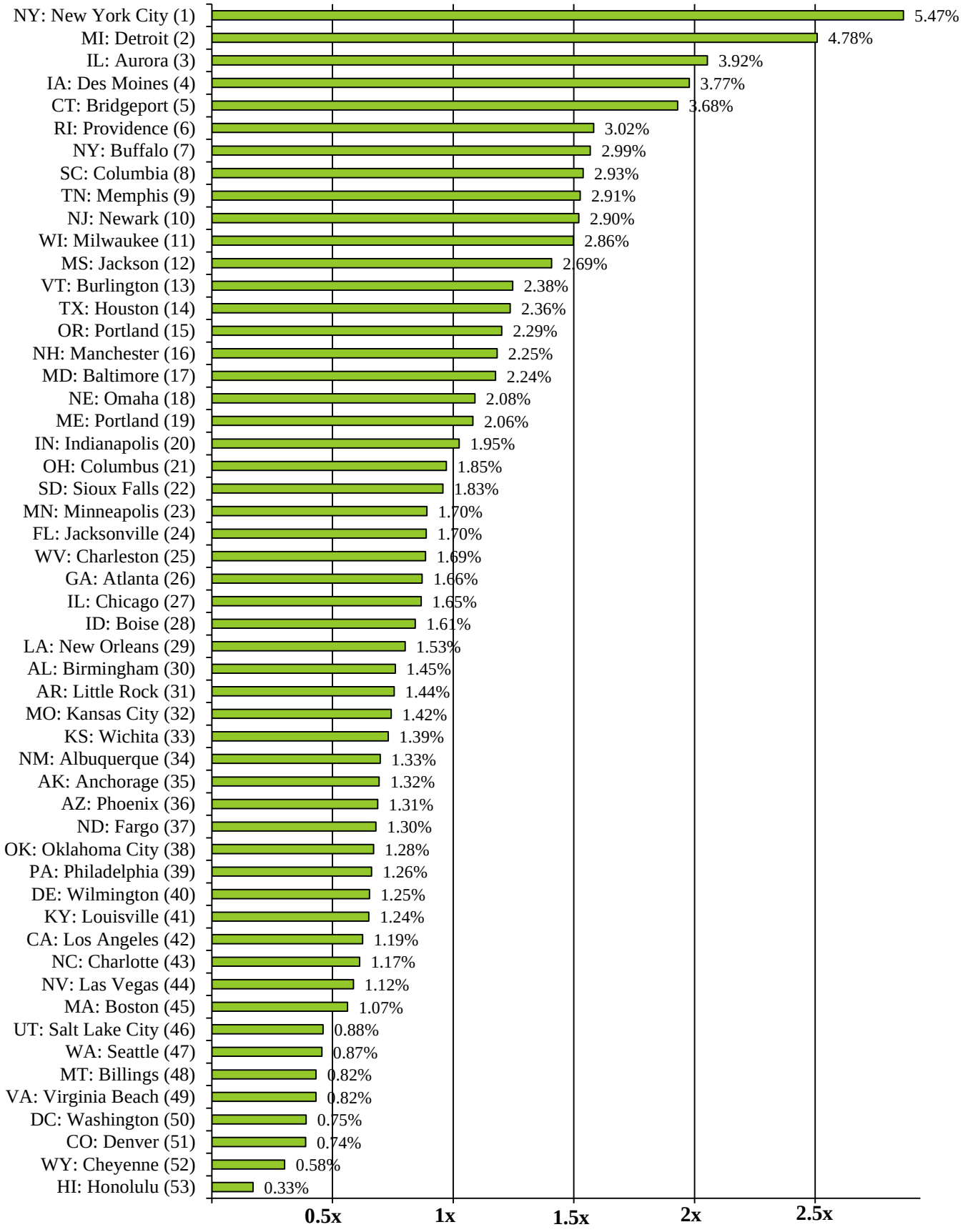
Some readers may want to use findings on effective tax rates from one specific table to reach conclusions on property taxes throughout an entire state. The small differences in tax rates across cities in California and Texas (Appendix Table 5b) show that the largest city in each state can serve as a proxy for property tax rates throughout an entire state. However, the large differences

between the two largest cities in Tennessee, Ohio, and Arizona show that caution is needed when extrapolating findings for a single city to an entire state.

Readers wishing to determine whether taxes in a state are high, low, or somewhere in between are best served by comparing the rankings for urban and rural municipalities. For example, five states (Iowa, Michigan, New Jersey, New York, and South Carolina) have top ten rankings in both an urban and rural setting – suggesting that these states are most likely to have the highest apartment property taxes. Colorado, Hawaii, Montana, Utah, Virginia, and Wyoming are the six states that have bottom ten rankings in both urban and rural settings.

Figure 5: Apartment Property Taxes for Largest City in Each State (2015)

Effective Tax Rate for $600,000 Valued Property (plus $30,000 of Fixtures)



Classification and Preferential Treatment of Homestead Properties

Many cities have preferences built into their property tax systems that result in lower effective tax rates for certain classes of property, with these features usually designed to benefit homeowners. The "classification ratio" describes these preferences by comparing the effective tax rate for two types of property. For example, if a city has a 3.0% effective tax rate on commercial properties and a 1.5% effective tax rate on homestead properties, then the commercial-homestead classification ratio is 2.0 (3.0% divided by 1.5%).

In a property tax system that treats all properties similarly, the classification ratio would be 1.0, because the effective rates on all properties would be the same. Therefore, the classification ratio provides a summary measure of the degree to which one type of property subsidizes lower property taxes on another class of properties. There are four main features of property tax systems that lead to different effective tax rates for different classes of property: the assessment ratio, the nominal tax rate, exemptions and credits, and the sales ratio.[21]

First, states may have different assessment ratios for different classes of property, which is the percentage of market value used to determine taxable values. For example, a state may have a 100% assessment ratio for commercial property and a 70% assessment ratio for residential property, which means a $100,000 commercial property would be taxed on its full market value but a $100,000 residential property would be taxed as if it were worth $70,000.

Second, cities may have different nominal tax rates for different classes of property, which is the tax rate applied to the taxable value to determine the tax bill. The nominal tax rate is also known as the statutory tax rate or millage rate.

Third, states or cities may have exemptions or credits that are only available to certain types of properties. The most common are homestead exemptions, which reduce the amount of property value subject to taxation, but are usually restricted to owner-occupied homes and unavailable to businesses or renters. For example, a $50,000 homestead exemption would mean a $200,000 home would be taxed as if it were worth $150,000, assuming there is a 100% assessment ratio.[22]

Fourth, the sales ratio may vary across property classes. The sales ratio measures the accuracy of assessments by comparing assessments to actual sales. For example, if the sales ratio for homesteads is 95%, then a home worth $100,000 would be "on the books" as if it were worth $95,000. Unlike the three other causes of classification, differences in sales ratios across classes are not written into law and are normally unintentional. Nonetheless, differences in the quality of assessments across property classes can produce a *de facto* classification system.

[21] For details on classification in each state, see the Property Tax Classification table on the Lincoln Institute of Land Policy's *Significant Features of the Property Tax* website (https://www.lincolninst.edu/subcenters/significant-features-property-tax/Report_Property_Tax_Classification.aspx).

[22] For information on homestead exemptions in each state, see "How Do States Spell Relief: A National Study of Homestead Exemptions and Property Tax Credits" by Adam H. Langley in *Land Lines* (April 2015).

Commercial-Homestead Classification Ratio

Figure 6a shows the commercial-homestead classification ratio for the largest city in each state, by comparing the effective tax rate on a $1 million commercial property to the effective tax rate on a median-value homestead property. Note that because homeowners' household goods are not taxable, we exclude commercial fixtures and instead compare only the effective rates on real property (land and buildings).

The average classification ratio for the 53 cities shown in Figure 6a is 1.683, which means that on average commercial properties experience an effective tax rate that is 68% higher than homesteads.

The commercial-homestead classification ratio varies widely across the 53 cities. The top five cities of New York City, Boston, Columbia (SC), Honolulu, and Denver all have classification ratios greater than 3.6. Nearly a third of the cities (16 of 53) have classification ratios above 2.0, meaning that commercial properties face an effective tax rate that is at least double that for homesteads.

There are six cities where the classification ratio is below one, meaning that their classification system favors commercial properties over homesteads: Wilmington (DE), Cheyenne, Bridgeport, Las Vegas, Baltimore, and Virginia Beach. The property tax systems in these cities are not structured to favor commercial properties, but the sales ratio results in a *de facto* classification system since commercial properties are under-assessed relative to homestead properties.

Appendix Table 6a provides additional information about the commercial-homestead classification ratio in each city. Of the 53 cities, 16 have a higher assessment ratio for commercial properties, 15 have a higher nominal tax rate on commercial properties, and 28 have exemptions or credits that favor homesteads over commercial properties. In total, 40 of the 53 cities have statutory preferences for homesteads—27 of them have differences in assessment ratios and/or nominal tax rates that favor homesteads, while in 13 cities classification is the result of exemptions or credits alone.

On average, tax disparities between commercial and homestead properties fell slightly in 2015—declining to 1.683 from 1.710 in 2014. The commercial-homestead classification ratio declined in 23 cities, with the largest drops in Indianapolis (-0.477); Des Moines (-0.401); Columbus, OH (-0.330); Phoenix (-0.289); and New Orleans (-0.184). Relative changes in sales ratios for commercial versus homestead properties tend to have the biggest impact on short-term changes in classification ratios. However, policy decisions that change the underlying property tax structure can come into play. In Des Moines, for example, the classification ratio fell primarily because the assessment ratio for commercial properties declined from 95% to 90% and to a lesser extent because the continued phase in of the state's business property tax credit was paired with a temporary reduction in the value of the homestead credit. In Phoenix, a slight reduction in the assessment ratio for commercial properties played a role in the classification ratio reduction. From a rankings perspective, Cheyenne (WY) fell 12 places, from 40th to 52nd highest, although its classification ratio fell by a relatively small amount (-0.078).

The classification ratio increased in 22 cities, with the largest rises in Sioux Falls (0.218); Washington, DC (0.143); Baltimore (0.133); Bridgeport (0.091); and Houston (0.050). Policy decisions again come into play. In Houston, policymakers increased the homestead exemption for school taxes from $15,000 to $25,000.

Figure 6c shows the longer-term picture, with trends in the commercial-homestead classification ratio going back to 1998. The 1.683 figure for 2015 is the second-lowest we have measured, just slightly higher than the 1.680 in 2002. There was a more significant drop from 2014 to 2015 when looking solely at locations where residential and commercial properties are treated differently in statute. For cities with "statutory classification,"[23] the average dropped from 1.923 to 1.907.

Apartment-Homestead Classification Ratio

Figure 6b shows the apartment-homestead classification ratio for the largest city in each state, by comparing the effective tax rate on a $600,000 apartment building to the effective tax rate on a median-value homestead. This classification ratio shows the degree of subsidy provided to homeowners at the expense of renters. The apartment-homestead classification ratio is about half of the commercial-homestead classification ratio, with apartments facing an effective tax rate that is 38% higher than homesteads on average. In nearly all locations studied, the apartment-homestead classification ratio is smaller than the commercial-homestead classification ratio, with the exceptions of Charleston (WV), Des Moines, Detroit, New York City, and Wilmington (DE).

New York City is a major outlier in the apartment-homestead classification ratio, with an effective tax rate on apartments that is more than five times higher than the median valued home. There are five other cities with classification ratios above 2.0: Columbia (SC), Indianapolis, Charleston (WV), Birmingham, and Boise. On the other hand, there are seven cities with a classification ratio below 1.0, with the lowest ratios in Virginia Beach, Cheyenne, and Bridgeport. The preference given to apartments in these cities is not the result of statutory provisions, but is simply the result of a lower sales ratio for apartments than homesteads.

Appendix Table 6b provides more details about the apartment-homestead classification ratio in each city. As with commercial properties, a large majority of cities have higher effective tax rates on apartments than homesteads. However, the preferences given to homesteads relative to apartments are caused more by homestead exemptions and credits than by differences in assessment ratios or nominal tax rates. In total, 36 of the 53 cities have statutory preferences for homesteads relative to apartments, but only 16 of them have differences in assessment ratios and/or nominal tax rates, while in 20 cities classification is the result of exemptions or credits alone.

On average, tax disparities between apartments and homesteads fell slightly in 2015—declining to 1.384 from 1.380 in 2014. The apartment-homestead classification ratio declined in 24 cities, with the largest drops in Des Moines (-0.345); Columbus, OH (-0.330); Virginia Beach (-0.176); Minneapolis (-0.117); and Fargo (-0.097). Policymakers' decisions influenced some changes in the apartment-homestead classification ratios. In Des Moines, the same factors affecting changes

[23] To identify cities with statutory classification, we ignore the sales ratio. This group only includes cities where classification is written into law with the assessment ratio, nominal tax rate, or exemptions/credits.

in the commercial-homestead classification ratio come into play. The ratio for Fargo declined in large part because the state allowed the temporary state-paid 12% credit against gross homestead taxes to elapse. The classification ratio increased in 19 cities, with the largest rises in Indianapolis (0.533); Sioux Falls (0.218); Baltimore (0.133); Charleston, WV (0.107); and Bridgeport (0.091). **Figure 6d** provides information on how the apartment-homestead classification ratio has changed since 1998.

Figure 6a: Commercial-Homestead Classification Ratio for Largest City in Each State (2015)

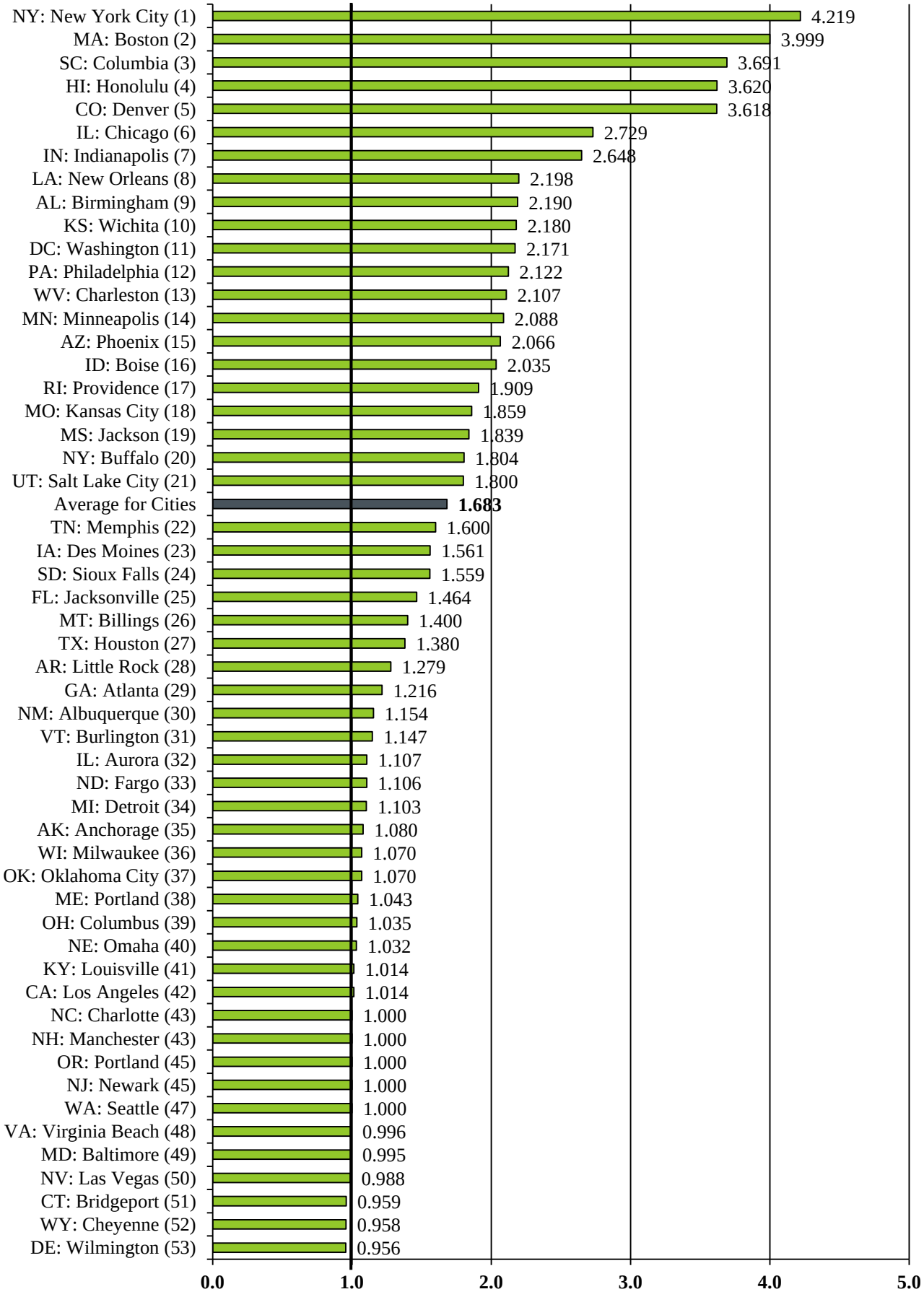


Figure 6b: Apartment-Homestead Classification Ratio for Largest City in Each State (2015)

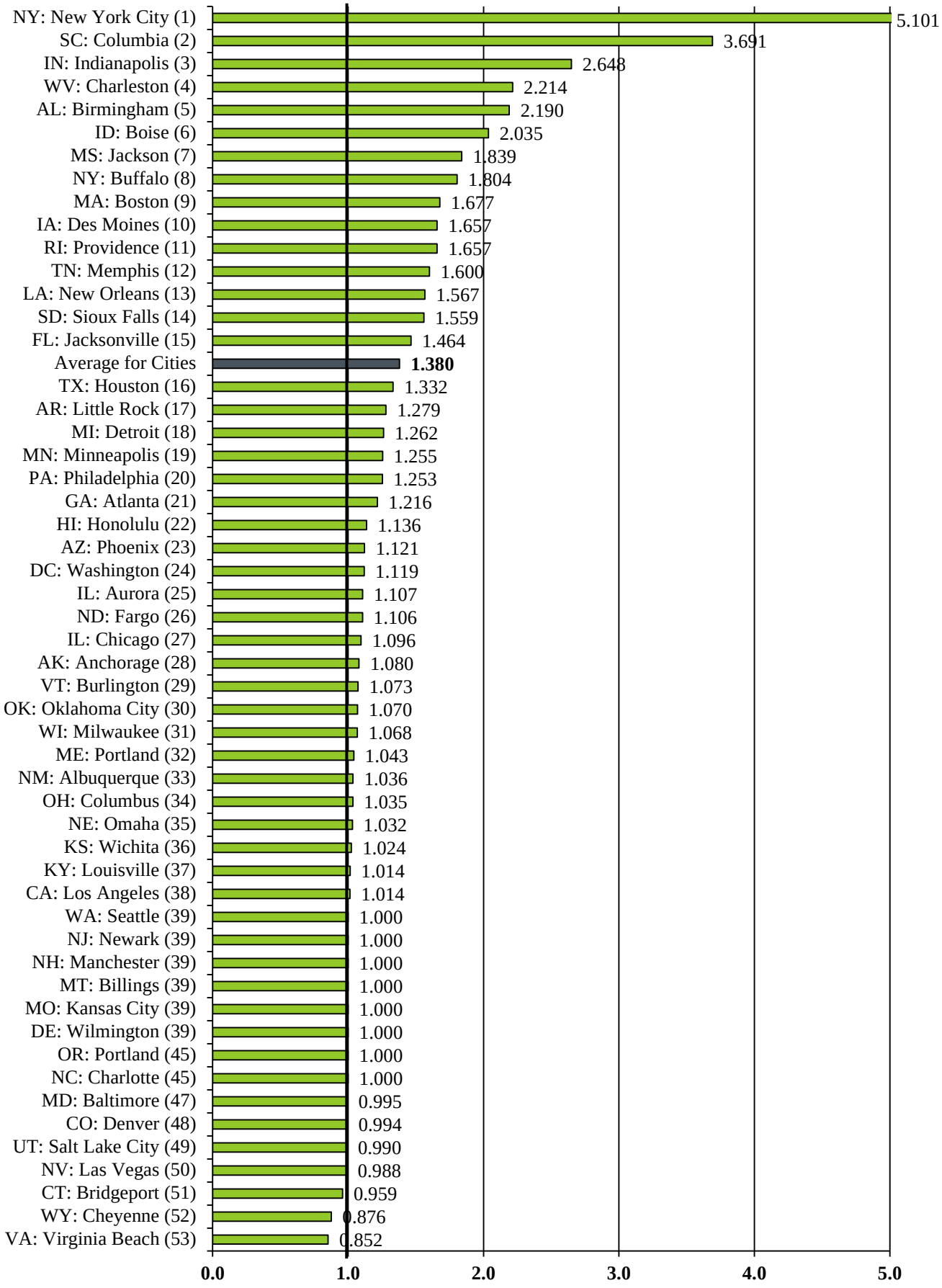
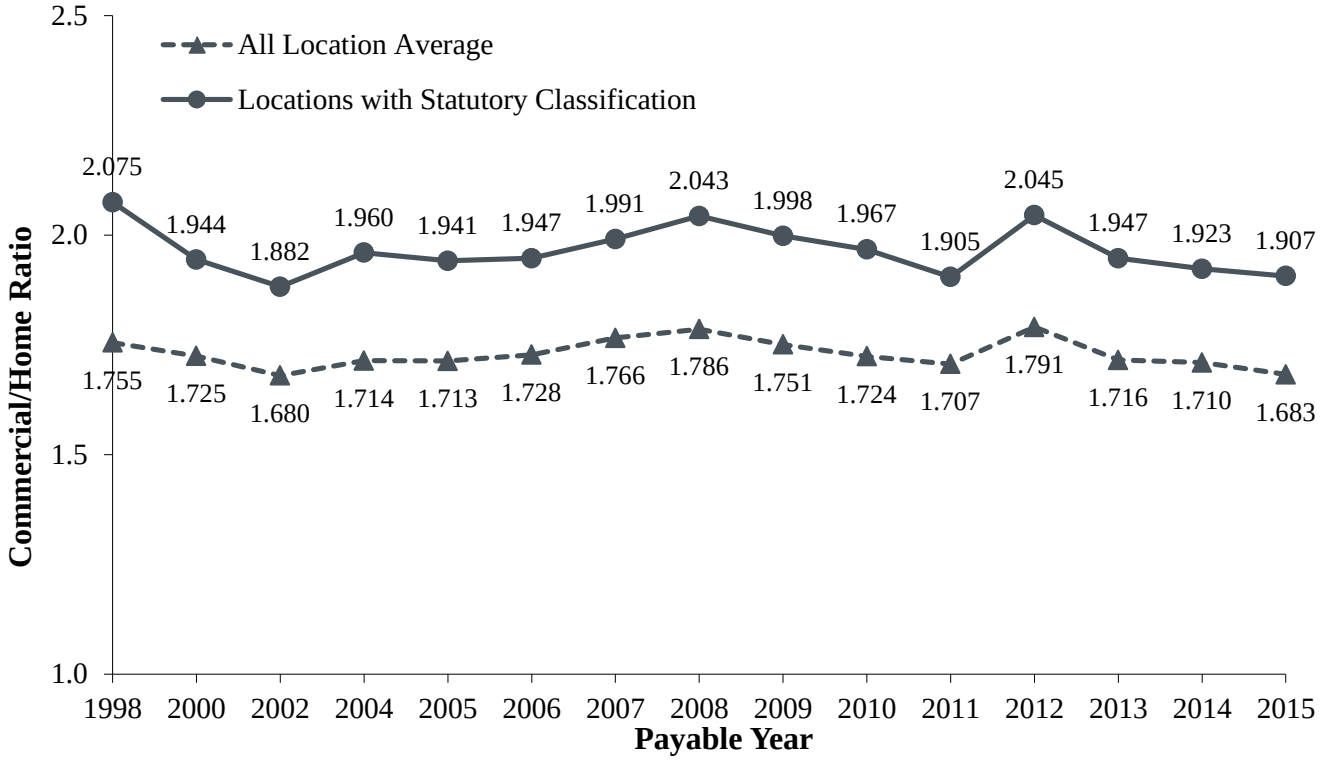


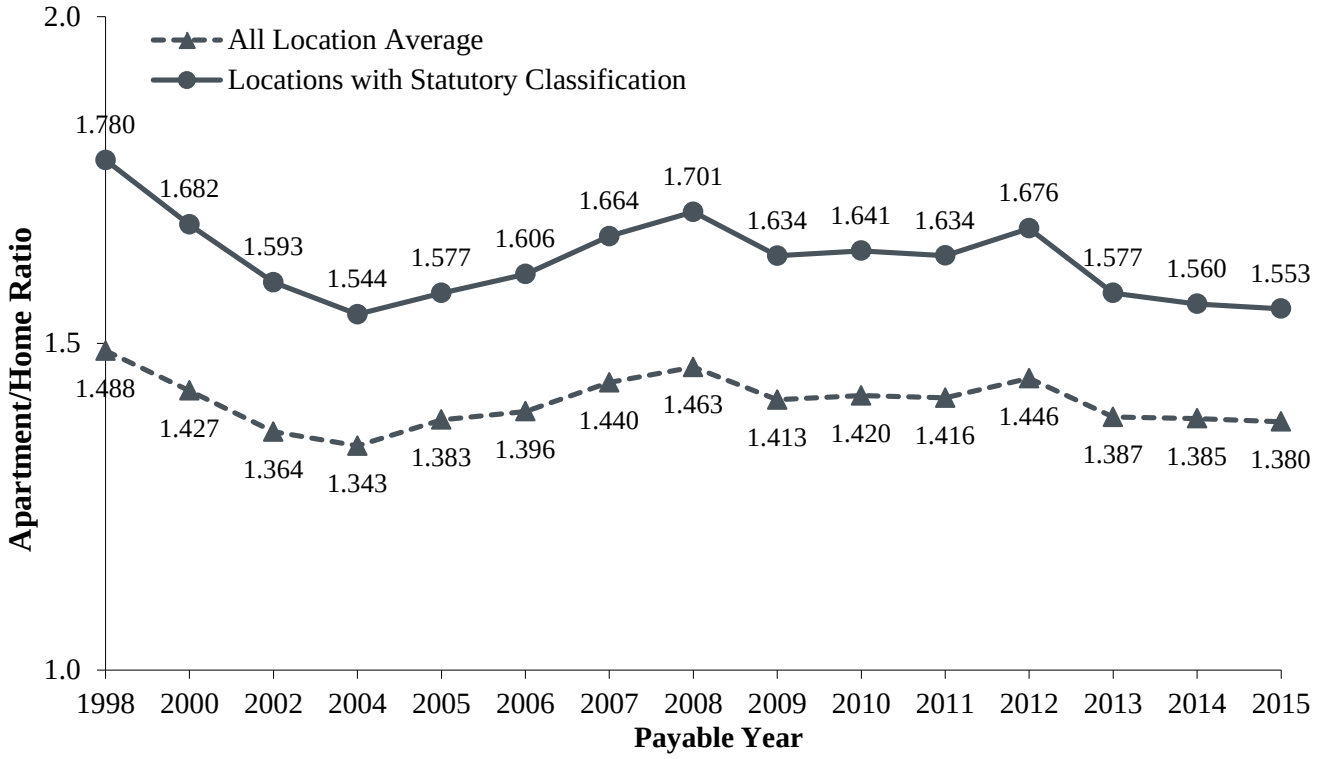
Figure 6c: Commercial-Homestead Classification Ratio for Largest City in Each State (1998 – 2015)



Note: 1.0 denotes unclassified property tax system.

Note: "Statutory classification" is the group of cities where classification is written into law with the assessment ratio, nominal tax rate, or exemptions/credits. Identification of this group ignores the sales ratio.

Figure 6d: Apartment-Homestead Classification Ratio for Largest City in Each State (1998 – 2015)



Note: 1.0 denotes unclassified property tax system.

Property Tax Assessment Limits

Property tax limitations have become an increasingly important feature of the local government finance landscape since the late 1970s, when rapid property value growth provoked Californians to adopt the now-iconic Proposition 13. Since that time, limitations on property taxes have become increasingly popular, especially during the late 1990s and early 2000s, when property values again appreciated significantly.[24]

There are many different types of property tax limits, including constraints on tax rates, tax levies, and assessed values.[25] This report accounts for the impact of limits on tax rates and levies implicitly, because of how these laws impact cities' tax rates. However, accounting for the impact of assessment limits requires an explicit modeling strategy.

Assessment limits typically restrict growth in the assessed value for individual parcels and then reset the taxable value of properties when they are sold. Therefore, the level of tax savings provided from assessment limits largely depends on two factors: how long a homeowner has owned her home and appreciation of the home's *market value* relative to the allowable growth of its *assessed value*.[26]

This report estimates the amount of tax relief provided by assessment limits for the average homeowner in a particular city by estimating the amount of value growth these limits exclude from taxation over an average tenure of ownership (See Methodology section for details). One key difference between assessment limits and other types of property tax limits, however, is that tax savings from assessment limits vary widely across individual taxpayers within the same city. Tax savings will be greater than average for homeowners whose home values have grown faster than average for the city and have owned their homes longer than average. States with parcel-specific assessment limits include Arizona, Arkansas, California, Florida, Illinois (Cook County only), Michigan, New Mexico, New York City, Oklahoma, Oregon, South Carolina, and Texas.

Figure 7 shows the impact of assessment limits for a median valued home in the 28 cities modeled. The impact of assessment limits varies widely across cities. In Long Beach, New York City, and Los Angeles a new homeowner who just purchased their home will pay 35-40 percent more in property taxes than an existing homeowner who has owned their home for the average tenure in their city despite the two owners having homes with identical market values. In contrast, in six cities assessment limits have no impact on taxes for the average homeowner, because growth in market values is less than allowable growth under the assessment limit.

Appendix Table 7 also show the impact of assessment limits in terms of the dollar difference in taxes between newly purchased homes and homes that have been owned for the average duration in each city, for median valued homes. In 9 cities, the difference in tax bills is at least $1,000.

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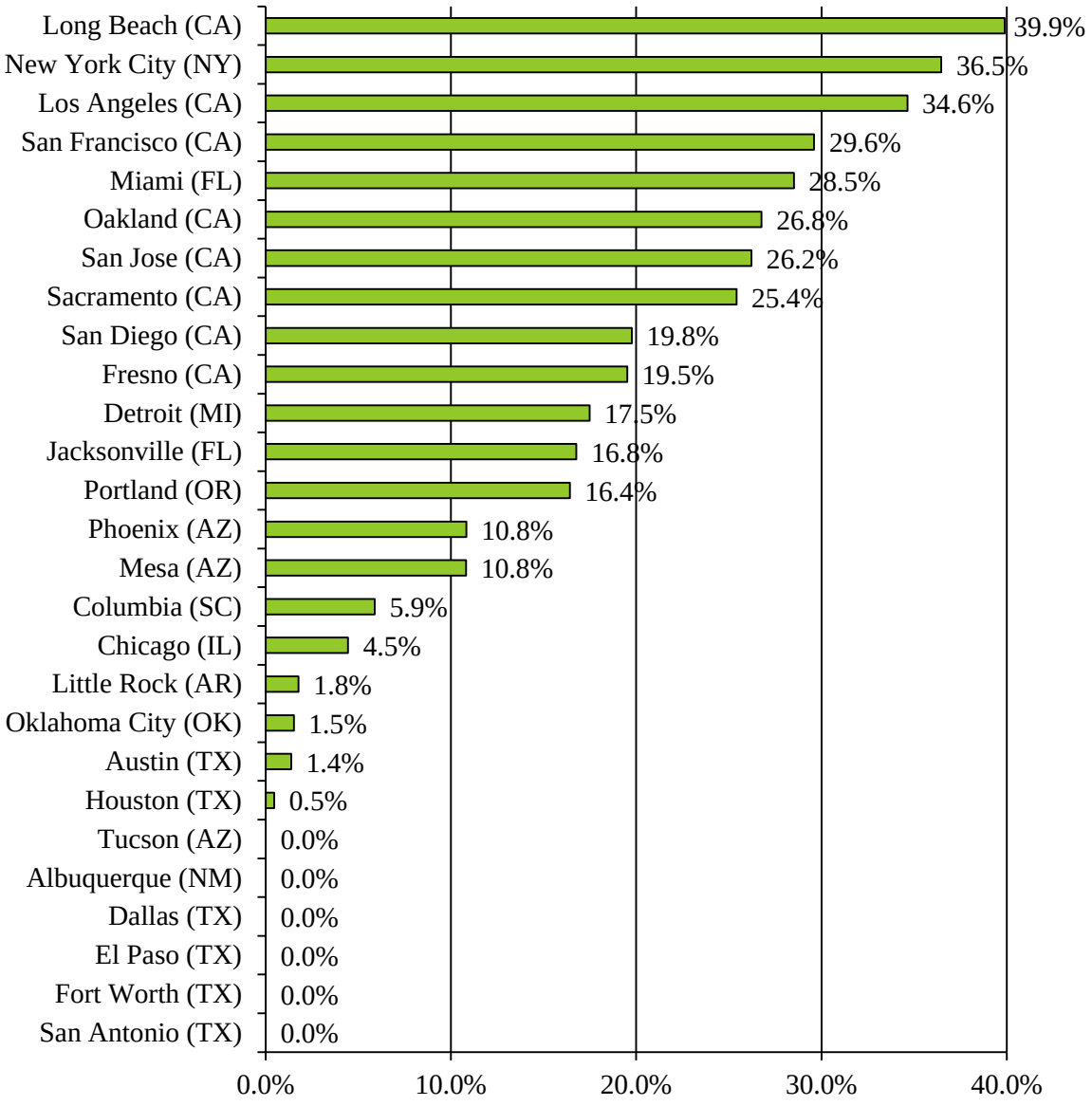
[24] Paquin, Bethany P. 2015. "Chronicle of the 161-Year History of State-Imposed Property Tax Limitations." Cambridge, MA: Lincoln Institute of Land Policy.

[25] The Lincoln Institute of Land Policy maintains a comprehensive database of property tax limits on its website: https://www.lincolninst.edu/subcenters/significant-features-property-tax/Report_Tax_Limits.aspx.

[26] Haveman, Mark and Terri A. Sexton. 2008. *Property Tax Assessment Limits: Lessons from Thirty Years of Experience*. Cambridge, MA: Lincoln Institute of Land Policy.

Figure 7: Impact of Assessment Limits

Difference in Property Taxes between a Newly Purchased Home and a Home that Has Been Owned for the Average Duration for the City (For Median Valued Home)



Notes: See Methodology section for details on calculation.

Accounting for assessment limits can lead to major differences in city's tax rate rankings. For example, consider effective tax rates for median valued homes in the largest city in each state (See Appendix Tables 2a and 2b). Los Angeles has the 33rd highest effective tax rate for new homeowners, but drops to 44th highest once adjusting for assessment limits. Other cities with large changes include New York City (37th to 47th); Jacksonville (31st to 37th); Phoenix (30th to 34th); and Portland, OR (9th to 12th).

Methodology

This study updates the *50-State Property Tax Comparison Study: Payable Year 2014*. It examines four distinct classes of property using a standard set of assumptions about their "true" market values and the split between real and personal property. The report calculates property taxes for parcels with a range of property values in three sets of cities:

- the largest city in each state and the District of Columbia along with Aurora, Illinois and Buffalo, New York;
- the largest fifty cities in the United States; and
- a rural municipality in each state.

This section first describes how property taxes are calculated, then describes data collection and the selection of cities, next defines the four property classes included in this study, and finally describes the methodology used to estimate the impact of assessment limits.

A. Components of the Property Tax Calculation

As an aid in reviewing the remaining assumptions of this study, it is helpful to think of the property tax calculation as having six distinct components:

(1) a "true" market value (TMV),
(2) a local sales ratio (SR),
(3) applicable exemptions that reduce taxable value (E),
(4) a statutory classification system (classification rate) or other provisions that effectively determine the proportion of the assessor's estimated market value that is taxable (CR),
(5) the total local property tax rate (TR), and
(6) applicable property tax credits (C).

Accordingly, the net local property tax for a given parcel of property is written:

$$\textbf{Net Property Tax} = \{[(TMV \times SR) - E] \times CR \times TR\} - C$$

Component 1: True Market Value (TMV)

The calculations for this study start with an assumption about the true market value of the four classes of property. This is the market value of a parcel of property as determined in a local real estate market consisting of arm-length transactions between willing buyers and sellers. This is in contrast to "assessed value" or "estimated market value," which is generally the starting point for tax calculations.

This study assumes the true market values are consistent across all locations in the study. For example, the ranking of property taxes on a residential homestead parcel with a true market value of $150,000 assumes that the parcel is actually worth $150,000 in the local real estate market in each location in each state, regardless of what the local assessor may think the property is worth.

For some locations the assumed true market value may be very atypical (a $150,000 home in Boston, for example). Nevertheless, this study assumes the property exists there. Essentially, this study is meant to compare the effects of property tax structures. Using fixed values allows the isolated effects of tax structures to be observed. That is, the report compares property taxes, not local real estate markets. However, as previously discussed the report does include tables that show the residential tax burdens where the home value is set equal to local median values.

Component 2: Sales Ratios (SR)

A unique aspect of this study is that it includes the effects of assessment practices on relative tax burdens. It would be much simpler to start the calculations by fixing the assessor's "estimated market value" for each property. However, in every state, the quality of property tax assessments is a significant aspect of the local property tax scene. Omission of this aspect of the property tax calculation would make this study much less useful.

Sales ratios are simply a measure of the accuracy of assessments. The sales ratio is determined by comparing assessments to actual sales. A sales ratio of 100% indicates that assessments are equal to market value. Sales ratios of less than 100% indicate that assessments are less than market value; sales ratios of over 100% indicate that assessments are higher than market value. In some states, state aid formulas use sales ratios to adjust assessors' values when local property wealth is used as a measure of local fiscal capacity. While sales ratios are generally not used in calculating an individual's actual property tax bill, some states do use sales data to equalize values as part of the property tax process.

By applying sales ratios, this study recognizes that our $150,000 residential homestead may be "on the books" at $155,000 in one location, and $140,000 in another, and that the actual tax on the property will be based on these "estimates" of market value. For example, if the relevant sales ratio in a given location is 93%, we convert the $150,000 true market value to $139,500 ($150,000 x .93) before applying the provisions of the local property tax. In this way, the study presents tax liabilities that represent the actual experience of property owners.

Sales ratio data is provided either at the city or county level, depending on the state. We use city-level data where appropriate; otherwise we default to county data. Our preference is to use sales ratio data that differentiates between different types of property. However, in many locations only one ratio is reported, covering all types of property. In those cases, we apply the same ratio to all of that location's examples in the study.

In the case of personal property, sales ratios are generally not used. Many states do not have sales ratios for personal property or assume they are 100%. Where states report personal property sales ratios, we include them in this study.

Component 3: Exemptions (E)

Many states provide exemptions that reduce the amount of property value subject to taxation. In some cases these exemptions are provided on a blanket basis across a state; in other cases the exemptions are local-option. Because exemptions are subtracted from assessed value, we apply

them after first applying the sales ratio to true market value, since the exemption will not incorporate any of the assessment error that properties can be subject to.

Note: in some cases the exemption is subtracted from taxable value instead of assessed value. In those cases we apply the exemption after applying the classification rate.

Component 4: Classification Rates (CR)

The fourth component of the property tax calculation involves subjecting the parcel's taxable value to classification (or assessment) rates, which convert assessed value to taxable value. In many cases, these classification rates are 100%, meaning that taxable value is equal to assessed value. However, governments often use differential rates to affect the distribution of property tax levies – to provide tax relief for a selected class of classes of properties at the expense of others.

In most states, state legislatures set the classification schemes. In a few states, local governments have some autonomy over classification rates.

Because of the wide variation in the quality of assessments across the states, particularly across classes of property, many states have no classification scheme in statute may in fact have significant classification via uneven assessments across classes of property. (In some cases, this may violate state constitutional provisions on uniform assessments.) Some states, like Minnesota, enforce strict standards of assessment quality (sales ratio studies, state orders adjusting values, state certification of assessors, etc.) and put their classification policy in statute.

Component 5: Total Local Tax Rate (TR)

The study defines "payable 2015 tax rate" as the rate used to calculate the property taxes with a lien date in 2015, regardless of the date(s) on which payments are due. In some cities, there are multiple combinations of taxing jurisdictions (namely, the state, cities, counties, school districts, and special taxing districts). For instance, a city may be located in multiple school districts and therefore rates will differ based on which school district a parcel is located in. This study uses the rate that is most prevalent in a city.

This study excludes special assessments since they are more in the nature of user charges, do not affect a majority of parcels, and are usually not sources of general revenue.

Component 6: Credits (C)

The final step in the tax calculation is to recognize any general deductions from the gross property tax calculations (credits). The study includes any credits that apply to a majority of parcels of the specified type. Certain states provide credits based on early payment; the study assumes that taxpayers take advantage of the credit by making the early payment.

Effective Tax Rates (ETRs)

Effective tax rates are used to express the relationship between net property taxes and the true market value of a property. This contrasts with the millage rates or other rates that are applied to

taxable value to determine a parcel's tax burden. By including the effects of all statutory tax provisions as well as the effects of local assessment practices, effective tax rates have the virtue of allowing more meaningful comparisons across states and property types.

B. Data Collection

Data for the property tax calculations was collected in one of two ways. Where possible, we collect property tax data directly from various state and local websites. Otherwise, we collect data using a contact-verification approach in which we ask state and local tax experts to provide information. In both cases, this information served as the basis for calculations by the Minnesota Center for Fiscal Excellence.

Selection of Additional Urban Cities

In Cook County (Chicago) and in New York City, the property tax system (notably, the assessment ratios) is substantially different from the system used in the remainder of Illinois and New York, respectively. We include the second-largest cities in those states (Buffalo and Aurora) to represent the property tax structures in the remainder of those states. In essence, the Urban analysis is a comparison of 53 different property tax structures.

Selection of Rural Cities

Rural cities generally must meet three criteria to be included in the study:

- the city has a population of between 2,500 and 10,000 (controlling for size);
- the city is a county seat (controlling, as best as possible, for economic conditions and type of services delivered); and
- the city is located in a county coded as a "6" or "7"[27] on the U.S. Department rural-urban measurement continuum (controlling for geographical relationships to urban areas)

In five states (Connecticut, Delaware, Hawaii, New Jersey, and Rhode Island), there were no counties coded 6 or 7 on the USDA's continuum. In the case of Massachusetts, the only code 6 or 7 county included Nantucket Island, which does not seem comparable to rural counties in other states. In these six cases, we selected the county seat in the most rural county available.

Data on Median-Valued Homes

This study compares homeowner property taxes using a "median value analysis", which sets the home value in each city equal to the median value of owner-occupied housing units in the city, or for smaller cities, in the relevant county. This data comes from the one-year or five-year data in the Census Bureau's *American Community Survey* for 2014, as appropriate. We intend this comparison to show how differences in local real estate markets affect residential property taxes.

[27] Counties coded "6" are nonmetro counties with urban population of 2,500 to 19,999 that are adjacent to a metro area; counties coded "7" are nonmetro counties within the same population range that are not adjacent to a metro area.

Note that the payable 2014 edition of this study was the first to use ACS data on median home values. Prior to that, median home value data came from metropolitan-area data provided by the National Association of Realtors. Readers should make time-trend comparisons of tax burdens on median-valued homes before and after this methodological change with care.

Special Property Tax Provisions

"Special property tax provisions" are provisions that, in practice, apply to less than half of all taxpayers for a given class of property. Special provisions are normally triggered by special circumstances or attributes of the taxpayer or property. Examples include senior tax deferrals, and special valuation exclusions based on age, health or special use.

Because the goal of this study is to compare the actual tax experience of the largest number of taxpayers in the selected jurisdictions, this study excludes special property tax provisions.

C. Property Classes and Assumptions About Value

This report studies hypothetical properties in four property classes (1) residential homesteads, (2) commercial property, (3) industrial property, and (4) apartments. Except for apartments, the study calculates taxes for all properties based on multiple values that are fixed across states. All classes of business property (commercial, industrial, and apartments) have a corresponding set of assumptions regarding the amount of personal property each parcel has.

These four classes were selected for a variety of reasons. First, they represent the vast majority of property value across the country. In Minnesota, these four classes represent nearly 70% of market value. It is likely that this figure is similar to other states, and may be even higher in states that do not have substantial agricultural operations. Second, these are the classes of property that policymakers tend to focus time and attention on. Third, most omitted classes of property are either not relevant to all fifty states (cabin properties, for example) or require more complex work to develop assumptions about value (public utilities and farms, for example).

Selection of Fixed Values

This report compares the tax burdens various property tax systems across the nation impose on a fixed amount of value. Holding property values constant across all jurisdictions controls for the effects differences in property values have on effective tax rates. The specific fixed values the study uses for homes, commercial, and industrial properties were largely chosen between 1995 and 2000 to represent a low-valued[28], medium-valued, and high-valued parcel.

Over time we have added or eliminated property values when appropriate. However, to preserve the usefulness of time-trend comparisons we have not changed any fixed values after their first appearance in the report.

[28] Note that the study no longer includes the $70,000 "low-valued" home.

Importantly, in most locations the effective tax rates for commercial and industrial properties do not vary much with value. Therefore, with few exceptions the specific fixed values selected for inclusion in the report are not of major consequence.

Real and Personal Property

The treatment of personal property is a significant part of each state's property tax regime. Because personal property exemptions (or lack thereof) vary from state to state, creating accurate property tax comparisons will depend in large part on making accurate assumptions about personal property. This is especially true with regard to industrial parcels, which have much higher proportions of personal property than do commercial properties in general.

Making these assumptions is challenging because the specific mix of real and personal property obviously varies by industry and location. With the permission of the Minnesota Department of Revenue's Research Division, we have borrowed the methodology they use to determine shares of real and personal business property in their biennial *Tax Incidence Study*.[29] Using that methodology, we have calculated state-specific real property, machinery and equipment, fixtures, and inventory shares for industrial parcels. The findings this model generates indicate that the average split for industrial parcels nationwide is 44.3% land and buildings (real property) and 55.7% personal property. Overall, the split ranges from 41.1% real/58.9% personal (Michigan) to 51.1% real/48.9% personal (Oregon).

PROPERTY CLASSES AND TRUE MARKET VALUES

Class	Values of Property				
	Real	**Mach. & Equip.**	**Inventories**	**Fixtures**	**Total**
Homestead	$150,000	$0	$0	$0	**$150,000**
	$300,000	$0	$0	$0	**$300,000**
Apartments	$600,000	$0	$0	$30,000	**$630,000**
Commercial	$100,000	$0	$0	$20,000	**$120,000**
	$1,000,000	$0	$0	$200,000	**$1,200,000**
	$25,000,000	$0	$0	$5,000,000	**$30,000,000**
Industrial (50% Personal)	$100,000	$50,000	$40,000	$10,000	**$200,000**
	$1,000,000	$500,000	$400,000	$100,000	**$2,000,000**
	$25,000,000	$12,500,000	$10,000,000	$2,500,00	**$50,000,000**
Industrial (60% Personal)	$100,000	$75,000	$60,000	$15,000	**$250,000**
	$1,000,000	$750,000	$600,000	$150,000	**$2,500,000**
	$25,000,000	$18,750,000	$15,000,000	$3,750,000	**$62,500,000**

These results suggest a two-assumption approach, with one set of rankings assuming 40% real property/60% personal property and a second set of rankings assuming 50% real property/50% personal property. The following table summarizes the assumed true market values and assessed value of personal property used for each property class.

[29] *Tax Incident Studies* are available on the website of the Minnesota Department of Revenue: http://www.revenue.state.mn.us/research_stats/Pages/Tax_Incidence_Studies.aspx.

This study does not include intangibles such as bank balances or financial securities in the property tax calculations.

Definitions of Real and Personal Property

The types of property found in this study are defined as follows:

- **Real Property:** consists of land and buildings not classified as personal property for tax purposes.
- **Machinery and Equipment:** includes large and ponderous equipment, generally not portable and often mounted on special foundations. Examples include large printing presses and assembly robots.
- **Inventories:** includes raw materials, unfinished products, supplies and similar items used by manufacturers. Does not include any inventory retailers hold for sale.
- **Fixtures:** includes items such as office furnishings, display racks, tools and similar items, but not motor vehicles. In the case of apartments, it includes such things as stoves, refrigerators, garbage disposals, air conditioners, drapes, and lawn care equipment.

D. Estimates of Assessment Limitation Effects

This study estimates the effect that provisions have which deliver property tax relief for homeowners by limiting increases in home value or property taxes at the parcel level. Generally, the value of parcel-specific assessment limitations results from a combination of the length of homeowner tenure and changes in the market value of the parcel relative to the provisions of the applicable limitation. This study uses data from the Census Bureau's *American Community Survey* to estimate that average length of homeowner tenure for locations where assessment limitation provisions are in effect. The Federal Housing Finance Agency's *House Price Index for All Transactions* is used to estimate the average change in residential property value in locations where assessment limitation provisions are in effect. We then model the average change in residential property value over the average length of homeowner tenure in each of these locations and compare that change to the allowable growth in homestead value and/or taxes during that period to determine the amount of excluded value or property tax relief these provisions afford.

One final key assumption: the model represents the experience of a homeowner with an "average" length of tenure. Therefore, if the model returns no excluded value, then we assume that the provision does not apply to half or more of homeowners and therefore does not apply.

MCFE prepared a working paper for the Lincoln Institute of Land Policy on this subject where there is considerably more detailed information on the methodology underlying this analysis.[30] .

[30] Twait, Aaron. 2012. "Property Assessment Limits: Effects on Homestead Property Tax Burdens and National Property Tax Rankings." Cambridge, MA: Lincoln Institute of Land Policy. April.

Appendix Table 1a: Factors Correlated with Homestead Property Tax Rates in Large U.S. Cities

(Effective Tax Rate for Median Valued Home, with Assessment Limits)

		Tax Rate		Property Tax Reliance		Median Home Value		Local Gov't Spending		Classification Ratio		
State	City	Rank (1-73)	Rank (1-73)	Rank (1-73)	Impact on Tax Rate	Rank (1-73)	Impact on Tax Rate	Rank (1-73)	Impact on Tax Rate	Commercial Rank (1-73)	Apartments Rank (1-73)	Impact on Tax Rate
Alabama	Birmingham	69	0.66	70	-0.62	70	0.68	23	0.11	11	5	-0.54
Alaska	Anchorage	34	1.26	6	0.87	13	-0.41	45	-0.10	44	37	0.18
Arizona	Mesa	63	0.74	48	-0.24	43	0.05	62	-0.25	14	25	-0.13
Arizona	Phoenix	43	1.10	45	-0.16	38	0.02	52	-0.14	18	30	-0.08
Arizona	Tucson	37	1.21	34	0.03	59	0.32	60	-0.24	9	29	-0.15
Arkansas	Little Rock	42	1.11	59	-0.39	48	0.18	61	-0.24	32	18	0.05
California	Fresno	50	0.95	43	-0.13	32	-0.04	41	-0.06	49	43	0.21
California	Long Beach	68	0.67	66	-0.55	10	-0.78	7	0.38	54	49	0.22
California	Los Angeles	61	0.77	50	-0.27	4	-0.91	5	0.43	57	52	0.22
California	Oakland	49	0.99	52	-0.32	5	-0.90	4	0.56	56	51	0.22
California	Sacramento	58	0.83	54	-0.33	18	-0.30	16	0.21	53	47	0.21
California	San Diego	53	0.93	28	0.10	7	-0.88	36	0.01	55	50	0.22
California	San Francisco	60	0.83	53	-0.32	1	-1.36	2	0.97	60	55	0.22
California	San Jose	52	0.94	36	-0.03	2	-1.14	25	0.07	59	54	0.22
Colorado	Colorado Springs	72	0.47	71	-0.63	24	-0.16	33	0.02	6	69	-0.40
Colorado	Denver	69	0.66	69	-0.60	14	-0.39	9	0.33	5	66	-0.41
Connecticut	Bridgeport	1	3.88	1	1.40	41	0.05	43	-0.07	70	70	0.26
DC	Washington	66	0.70	68	-0.56	8	-0.87	1	1.79	13	31	-0.11
Delaware	Wilmington	30	1.31	42	-0.11	37	0.01	19	0.12	72	56	0.24
Florida	Jacksonville	47	1.00	37	-0.03	56	0.29	27	0.05	29	16	-0.07

How to Interpret Each Factor's Impact on a City's Tax Rate

The columns labeled "Impact on Tax Rate" shows how each factor is expected to affect the tax rate in that city relative to a scenario where the city had the average value for that variable—a positive value means that factor increases the city's tax rate, while a negative value means that factor decreases the city's tax rate.

For example, consider Birmingham, Alabama. The city has the 70th highest property tax reliance (4th lowest), which is predicted to decrease the city's tax rate on a median valued home by 0.62 percentage points relative to a city with average property tax reliance. An alternative way to interpret this data is that if Birmingham had the average property tax reliance and all other characteristics of the city were unchanged (home values, government spending, etc.), then the city's tax rate would be 0.62 percentage points higher, which at 1.28% would be 32nd highest. Birmingham also has the 70th highest median home value (4th lowest), which is expected to increase their tax rate by 0.68 percentage points relative to a scenario where the city had the average home value for all cities in this analysis. Local government spending per capita is a bit higher than average in Birmingham (23rd highest), which is expected to increase the city's tax rate by 0.11 percentage points relative to a city with average spending. Finally, Birmingham has significantly higher tax rates for commercial properties and apartments than for homestead properties; the classification ratio is 11th highest for commercial properties and 4th highest for apartments. The city's classification ratios are predicted to decrease the property tax rate on a median valued home by 0.54 percentage points compared to a city with the average classification ratio.

		Tax Rate		Property Tax Reliance		Median Home Value		Local Gov't Spending		Classification Ratio		
State	**City**	Rank (1-73)	Tax Rate	Rank (1-73)	Impact on Tax Rate	Rank (1-73)	Impact on Tax Rate	Rank (1-73)	Impact on Tax Rate	Commercial	Apartments	Impact
Florida	Miami	40	1.15	33	0.05	19	-0.26	18	0.14	33	23	0.09
Georgia	Atlanta	28	1.36	40	-0.06	23	-0.16	6	0.39	34	24	0.09
Hawaii	Honolulu*	73	0.30	16	0.28	3	-1.05	73	-0.50	4	28	-0.47
Idaho	Boise	58	0.83	11	0.45	33	-0.03	72	-0.44	19	6	-0.44
Illinois	Aurora	2	3.72	4	1.04	39	0.02	64	-0.26	39	32	0.16
Illinois	Chicago	24	1.51	31	0.07	22	-0.17	11	0.29	7	35	-0.24
Indiana	Indianapolis	44	1.07	41	-0.11	65	0.39	26	0.05	8	3	-0.83
Iowa	Des Moines	9	2.39	12	0.38	62	0.38	44	-0.07	27	10	-0.17
Kansas	Wichita	31	1.28	29	0.10	61	0.36	58	-0.22	12	48	-0.07
Kentucky	Louisville	31	1.28	46	-0.17	50	0.22	67	-0.31	57	52	0.22
Louisiana	New Orleans	50	0.95	61	-0.41	31	-0.05	37	0.00	10	14	-0.29
Maine	Portland	16	1.98	10	0.46	20	-0.26	39	-0.04	48	42	0.20
Maryland	Baltimore	14	2.09	27	0.11	47	0.17	17	0.16	68	65	0.23
Massachusetts	Boston	67	0.67	3	1.15	11	-0.73	34	0.02	2	9	-0.78
Michigan	Detroit	3	3.14	57	-0.39	73	1.31	15	0.22	41	19	0.10
Minnesota	Minneapolis	27	1.42	24	0.16	27	-0.10	20	0.12	17	20	-0.14
Mississippi	Jackson	26	1.46	7	0.80	69	0.62	69	-0.35	22	7	-0.31
Missouri	Kansas City	25	1.49	64	-0.45	55	0.28	50	-0.13	21	56	0.02
Montana	Billings	56	0.87	22	0.19	30	-0.06	71	-0.39	30	56	0.13
Nebraska	Omaha	15	2.01	23	0.18	53	0.27	32	0.03	52	46	0.21
Nevada	Las Vegas	41	1.13	47	-0.21	34	-0.02	42	-0.07	69	68	0.24
New Hampshire	Manchester	10	2.37	8	0.64	29	-0.07	55	-0.17	61	56	0.23
New Jersey	Newark*	4	3.05	2	1.27	25	-0.15	48	-0.11	61	56	0.23
New Mexico	Albuquerque	33	1.27	49	-0.25	35	-0.01	68	-0.32	37	44	0.18
New York	Buffalo	23	1.74	62	-0.43	71	0.85	13	0.26	23	8	-0.29
New York	New York City	65	0.72	51	-0.30	6	-0.89	3	0.88	1	1	-2.19
North Carolina	Charlotte	39	1.16	63	-0.43	40	0.04	21	0.12	61	56	0.23
North Carolina	Raleigh	46	1.04	13	0.34	26	-0.15	59	-0.23	61	56	0.23
North Dakota	Fargo	35	1.23	38	-0.05	42	0.05	56	-0.19	40	33	0.16
Ohio	Cleveland	7	2.62	67	-0.55	72	0.90	14	0.25	42	34	0.17

*Honolulu and Newark do not have data on property tax reliance or local government spending in the Fiscally Standardized Cities database, so statewide data on all local governments is used instead (Source: U.S. Census Bureau, 2012 Census of Government Finances).

		Tax Rate		Property Tax Reliance		Median Home Value		Local Gov't Spending		Classification Ratio		
State	**City**	Rank (1-73)	Tax Rate	Rank (1-73)	Impact on Tax Rate	Rank (1-73)	Impact on Tax Rate	Rank (1-73)	Impact on Tax Rate	Commercial	Apartments	Impact
Ohio	Columbus	19	1.88	39	-0.06	57	0.30	40	-0.06	51	45	0.21
Oklahoma	Oklahoma City	38	1.16	60	-0.39	52	0.24	70	-0.36	46	40	0.18
Oklahoma	Tulsa	29	1.35	55	-0.33	60	0.34	65	-0.26	45	38	0.18
Oregon	Portland	18	1.92	19	0.25	12	-0.48	38	-0.01	61	56	0.23
Pennsylvania	Philadelphia	45	1.06	72	-0.71	49	0.18	22	0.11	15	21	-0.15
Rhode Island	Providence	22	1.74	5	0.89	36	-0.01	46	-0.10	20	10	-0.26
South Carolina	Columbia	64	0.72	30	0.07	46	0.13	54	-0.17	3	2	-1.50
South Dakota	Sioux Falls	36	1.23	25	0.15	45	0.11	66	-0.30	28	15	-0.13
Tennessee	Memphis	20	1.84	35	-0.02	68	0.61	8	0.35	26	13	-0.16
Tennessee	Nashville	48	1.00	32	0.06	44	0.07	24	0.08	25	12	-0.16
Texas	Austin	17	1.96	9	0.49	17	-0.30	29	0.04	43	36	0.17
Texas	Dallas	13	2.12	26	0.13	51	0.23	31	0.03	35	22	0.09
Texas	El Paso	6	2.64	21	0.20	62	0.38	63	-0.26	73	72	0.31
Texas	Fort Worth	8	2.47	14	0.32	58	0.32	53	-0.16	50	27	0.16
Texas	Houston	21	1.75	17	0.27	54	0.27	47	-0.11	31	17	0.00
Texas	San Antonio	12	2.23	18	0.27	64	0.38	30	0.03	36	26	0.12
Utah	Salt Lake City	57	0.85	44	-0.14	21	-0.24	49	-0.12	24	67	0.04
Vermont	Burlington	11	2.33	65	-0.48	15	-0.35	28	0.04	38	39	0.16
Virginia	Virginia Beach	54	0.92	20	0.25	16	-0.32	57	-0.20	67	73	0.29
Washington	Seattle	55	0.87	56	-0.39	9	-0.85	12	0.26	61	56	0.23
West Virginia	Charleston	62	0.76	58	-0.39	67	0.50	51	-0.13	16	4	-0.52
Wisconsin	Milwaukee	5	2.68	15	0.31	66	0.43	35	0.01	46	41	0.19
Wyoming	Cheyenne	71	0.65	73	-1.02	28	-0.09	10	0.30	71	71	0.29

Appendix Table 1b: Factors Correlated with Commercial Property Tax Rates in Large U.S. Cities

(Effective Tax Rate for $1-Million Valued Commercial Property, with $200k in Fixtures)

		Tax Rate		Property Tax Reliance		Median Home Value		Local Gov't Spending		Classification Ratio*	
State	City	Rank (1-73)	Tax Rate	Rank (1-73)	Impact on Tax Rate	Rank (1-73)	Impact on Tax Rate	Rank (1-73)	Impact on Tax Rate	Rank (1-73)	Impact on Tax Rate
Alabama	Birmingham	50	1.45	70	-0.66	70	0.73	23	0.13	11	0.28
Alaska	Anchorage	54	1.36	6	0.92	13	-0.44	45	-0.13	44	-0.18
Arizona	Mesa	44	1.60	48	-0.25	43	0.06	62	-0.32	14	0.26
Arizona	Phoenix	29	2.26	45	-0.16	38	0.02	52	-0.17	18	0.23
Arizona	Tucson	22	2.51	34	0.04	59	0.35	60	-0.30	9	0.35
Arkansas	Little Rock	51	1.44	59	-0.41	48	0.19	61	-0.30	32	-0.10
California	Fresno	58	1.23	43	-0.14	32	-0.04	41	-0.08	49	-0.20
California	Long Beach	65	1.13	66	-0.58	10	-0.84	7	0.48	54	-0.21
California	Los Angeles	59	1.19	50	-0.29	4	-0.97	5	0.55	57	-0.21
California	Oakland	53	1.37	52	-0.33	5	-0.96	4	0.71	56	-0.21
California	Sacramento	63	1.14	54	-0.35	18	-0.32	16	0.27	53	-0.20
California	San Diego	62	1.18	28	0.11	7	-0.94	36	0.01	55	-0.21
California	San Francisco	61	1.18	53	-0.34	1	-1.46	2	1.24	60	-0.21
California	San Jose	56	1.29	36	-0.03	2	-1.22	25	0.09	59	-0.21
Colorado	Colorado Springs	39	1.69	71	-0.67	24	-0.17	33	0.03	6	0.86
Colorado	Denver	26	2.40	69	-0.63	14	-0.42	9	0.42	5	0.87
Connecticut	Bridgeport	5	3.59	1	1.48	41	0.05	43	-0.09	70	-0.23
DC	Washington	57	1.27	68	-0.60	8	-0.93	1	2.27	13	0.27
Delaware	Wilmington	68	1.04	42	-0.12	37	0.01	19	0.15	72	-0.23
Florida	Jacksonville	38	1.74	37	-0.03	56	0.31	27	0.06	29	-0.02

*Table shows impact of the commercial-homestead classification ratio

How to Interpret Each Factor's Impact on a City's Tax Rate

The columns labeled "Impact on Tax Rate" shows how each factor is expected to affect the tax rate in that city relative to a scenario where the city had the average value for that variable—a positive value means that factor increases the city's tax rate, while a negative value means that factor decreases the city's tax rate.

For example, consider Birmingham, Alabama. The city has the 70th highest property tax reliance (4th lowest), which is predicted to decrease the city's commercial property tax rate by 0.66 percentage points relative to a city with average property tax reliance. An alternative way to interpret this data is that if Birmingham had the average property tax reliance and all other characteristics of the city were unchanged (home values, government spending, etc.), then the city's commercial tax rate would be 0.66 percentage points higher. Birmingham also has the 70th highest median home value (4th lowest), which is expected to increase their tax rate by 0.73 percentage points relative to a scenario where the city had the average home value for all cities in this analysis. Local government spending per capita is a bit higher than average in Birmingham (23rd highest), which is expected to increase the city's tax rate by 0.13 percentage points relative to a city with average spending. Finally, Birmingham has the 11th highest commercial-homestead classification ratio, which is predicted to increase the commercial property tax rate by 0.28 percentage points compared to a city with the average classification ratio.

		Tax Rate		Property Tax Reliance		Median Home Value		Local Gov't Spending		Classification Ratio*	
State	**City**	Rank (1-73)	Tax Rate	Rank (1-73)	Impact on Tax Rate	Rank (1-73)	Impact on Tax Rate	Rank (1-73)	Impact on Tax Rate	Rank (1-73)	Tax Rate
Florida	Miami	36	1.96	33	0.05	19	-0.28	18	0.17	33	-0.12
Georgia	Atlanta	40	1.67	40	-0.07	23	-0.17	6	0.50	34	-0.12
Hawaii	Honolulu**	71	0.91	16	0.30	3	-1.12	73	-0.63	4	0.87
Idaho	Boise	46	1.55	11	0.47	33	-0.03	72	-0.56	19	0.21
Illinois	Aurora	6	3.43	4	1.10	39	0.02	64	-0.33	39	-0.17
Illinois	Chicago	4	3.60	31	0.07	22	-0.18	11	0.37	7	0.50
Indiana	Indianapolis	12	2.84	41	-0.12	65	0.42	26	0.06	8	0.47
Iowa	Des Moines	9	3.11	12	0.40	62	0.40	44	-0.10	27	0.02
Kansas	Wichita	13	2.83	29	0.10	61	0.39	58	-0.27	12	0.27
Kentucky	Louisville	52	1.40	46	-0.18	50	0.24	67	-0.39	57	-0.21
Louisiana	New Orleans	32	2.11	61	-0.43	31	-0.05	37	0.00	10	0.28
Maine	Portland	34	2.06	10	0.48	20	-0.28	39	-0.06	48	-0.20
Maryland	Baltimore	16	2.66	27	0.11	47	0.18	17	0.20	68	-0.22
Massachusetts	Boston	30	2.24	3	1.21	11	-0.78	34	0.02	2	1.02
Michigan	Detroit	1	4.13	57	-0.41	73	1.40	15	0.28	41	-0.17
Minnesota	Minneapolis	7	3.25	24	0.17	27	-0.11	20	0.15	17	0.24
Mississippi	Jackson	15	2.69	7	0.84	69	0.66	69	-0.44	22	0.13
Missouri	Kansas City	14	2.75	64	-0.48	55	0.30	50	-0.16	21	0.14
Montana	Billings	67	1.09	22	0.20	30	-0.06	71	-0.50	30	-0.05
Nebraska	Omaha	33	2.10	23	0.19	53	0.29	32	0.03	52	-0.20
Nevada	Las Vegas	66	1.12	47	-0.22	34	-0.03	42	-0.08	69	-0.22
New Hampshire	Manchester	35	1.97	8	0.67	29	-0.08	55	-0.22	61	-0.21
New Jersey	Newark**	21	2.54	2	1.34	25	-0.16	48	-0.14	61	-0.21
New Mexico	Albuquerque	48	1.49	49	-0.26	35	-0.01	68	-0.41	37	-0.15
New York	Buffalo	17	2.62	62	-0.45	71	0.91	13	0.33	23	0.12
New York	New York City	2	3.96	51	-0.31	6	-0.95	3	1.12	1	1.11
North Carolina	Charlotte	60	1.18	63	-0.46	40	0.04	21	0.15	61	-0.21
North Carolina	Raleigh	69	1.04	13	0.36	26	-0.16	59	-0.30	61	-0.21
North Dakota	Fargo	64	1.14	38	-0.05	42	0.06	56	-0.25	40	-0.17
Ohio	Cleveland	25	2.40	67	-0.58	72	0.97	14	0.32	42	-0.17

*Table shows impact of the commercial-homestead classification ratio

**Honolulu and Newark do not have data on property tax reliance or local government spending in the Fiscally Standardized Cities database, so statewide data on all local governments is used instead (Source: U.S. Census Bureau, 2012 Census of Government Finances).

		Tax Rate		Property Tax Reliance		Median Home Value		Local Gov't Spending		Classification Ratio*	
State	**City**	Rank (1-73)	Tax Rate	Rank (1-73)	Impact on Tax Rate	Rank (1-73)	Impact on Tax Rate	Rank (1-73)	Impact on Tax Rate	Rank (1-73)	Tax Rate
Ohio	Columbus	41	1.62	39	-0.06	57	0.32	40	-0.08	51	-0.20
Oklahoma	Oklahoma City	55	1.32	60	-0.41	52	0.26	70	-0.46	46	-0.18
Oklahoma	Tulsa	49	1.46	55	-0.35	60	0.37	65	-0.33	45	-0.18
Oregon	Portland	28	2.29	19	0.27	12	-0.51	38	-0.02	61	-0.21
Pennsylvania	Philadelphia	37	1.87	72	-0.75	49	0.19	22	0.14	15	0.25
Rhode Island	Providence	3	3.71	5	0.94	36	-0.01	46	-0.13	20	0.16
South Carolina	Columbia	8	3.22	30	0.07	46	0.14	54	-0.21	3	0.90
South Dakota	Sioux Falls	43	1.60	25	0.16	45	0.12	66	-0.38	28	0.02
Tennessee	Memphis	11	2.84	35	-0.02	68	0.65	8	0.45	26	0.03
Tennessee	Nashville	45	1.55	32	0.06	44	0.07	24	0.10	25	0.03
Texas	Austin	31	2.21	9	0.52	17	-0.32	29	0.05	43	-0.17
Texas	Dallas	20	2.55	26	0.13	51	0.25	31	0.04	35	-0.14
Texas	El Paso	24	2.41	21	0.22	62	0.40	63	-0.33	73	-0.27
Texas	Fort Worth	18	2.62	14	0.33	58	0.34	53	-0.20	50	-0.20
Texas	Houston	23	2.44	17	0.29	54	0.29	47	-0.14	31	-0.06
Texas	San Antonio	19	2.60	18	0.29	64	0.40	30	0.04	36	-0.15
Utah	Salt Lake City	47	1.54	44	-0.15	21	-0.26	49	-0.16	24	0.12
Vermont	Burlington	27	2.38	65	-0.51	15	-0.37	28	0.05	38	-0.15
Virginia	Virginia Beach	70	1.03	20	0.26	16	-0.34	57	-0.25	67	-0.22
Washington	Seattle	72	0.88	56	-0.41	9	-0.91	12	0.33	61	-0.21
West Virginia	Charleston	42	1.61	58	-0.41	67	0.54	51	-0.17	16	0.24
Wisconsin	Milwaukee	10	2.86	15	0.33	66	0.46	35	0.01	46	-0.18
Wyoming	Cheyenne	73	0.64	73	-1.08	28	-0.09	10	0.38	71	-0.23

*Table shows impact of the commercial-homestead classification ratio

Appendix Table 1c: Correlates of Cities' Effective Tax Rates on Homestead Properties

	(1)	(2)	Mean	St. Dev.	Data
Tax Rate on Median Valued Home	N/A	N/A	1.444	0.731	Effective tax rate on median valued home, with assessment limits Source: *50-State Property Tax Comparison Study* (Appendix Tables 2b, 2e)
Median Home Value	-0.611*** (0.055)	-0.888*** (0.121)	212,475	139,756	Median home value in city Source: 2014 American Community Survey (U.S. Census Bureau)
Business Classification Ratio	-0.355*** (0.079)	-0.247*** (0.070)	1.518	0.728	Commercial-homestead classification ratio, with taxes on personal property excluded for commercial properties Source: *50-State Property Tax Comparison Study*
Apartments Classification Ratio	-0.444*** (0.122)	-0.396** (0.179)	1.257	0.460	Apartment-homestead classification ratio, with taxes on personal property excluded for apartments Source: *50-State Property Tax Comparison Study*
Property Tax Reliance	0.836*** (0.103)	0.0337*** (0.006)	41.0	13.7	Property taxes as a percent of own source revenue for the fiscally standardized city (FiSC) Source: Lincoln Institute of Land Policy. FiSC database (2012).
Local Gov't Spending Per Capita (1000s)	0.568*** (0.119)	0.141*** (0.034)	5.988	1.774	Direct expenditures per capita for the fiscally standardized city (FiSC) Source: Lincoln Institute of Land Policy. FiSC database (2012).
State and Federal Aid as % Local Gov't Budget	0.00557 (0.111)	0.00212 (0.006)	36.2	9.7	Intergovernmental revenue as a percent of general revenue for the fiscally standardized city (FiSC) Source: Lincoln Institute of Land Policy. FiSC database (2012).
Local as % State-Local Spending	-0.25 (0.309)	-0.00371 (0.010)	50.4	7.6	Local government direct expenditures as a percent of state and local direct expenditures (State-level variable) Source: 2013 Survey of State and Local Gov't Finances (U.S. Census Bureau)
Constant	-1.043 (1.260)	10.96*** (1.418)			
N	69	69			
R-sq	0.739	0.679			
adj. R-sq	0.709	0.643			
F	47.28	14.85			

* p < 0.10, ** p < 0.05, *** p < 0.01; robust standard errors in parenthesis.

Regression #1 shows elasticities with all variables measured in natural logs; these coefficients are reported in figure 1.

Regression #2 measures all variables in levels except for median home value, which is measured as the natural log; these coefficients are used in appendix table 1a.

Notes: Washington, DC and New York City were excluded from the regression because they have very atypical revenue structures, and as major outliers they significantly altered the coefficient estimates and weakened the overall fit for the model. Honolulu and Newark were excluded because they do not have data in the FiSC database on property tax reliance or state and federal aid as a percent of the local government budget. The means and standard deviations shown in the table also exclude these four cities.

Appendix Table 1d: Correlates of Cities' Effective Tax Rates on Commercial Properties

	(1)	(2)	Mean	St. Dev.	Data
Tax Rate on Commercial Property	N/A	N/A	2.006	0.803	Effective tax rate on $1-Million Commercial Property Source: *50-State Property Tax Comparison Study* (Appendix Tables 3a, 3b)
Median Home Value	-0.467*** (0.062)	-0.950*** (0.165)	212,475	139,756	Median home value in city Source: 2014 American Community Survey (U.S. Census Bureau)
Business Classification Ratio	0.496*** (0.084)	0.413*** (0.134)	1.518	0.728	Commercial-homestead classification ratio, with taxes on personal property excluded for commercial properties Source: *50-State Property Tax Comparison Study*
Apartments Classification Ratio	-0.257* (0.140)	-0.152 (0.210)	1.257	0.460	Apartment-homestead classification ratio, with taxes on personal property excluded for apartments Source: *50-State Property Tax Comparison Study*
Property Tax Reliance	0.762*** (0.101)	0.0356*** (0.006)	41.0	13.7	Property taxes as a percent of own source revenue for the fiscally standardized city (FiSC) Source: Lincoln Institute of Land Policy. FiSC database (2012).
Local Gov't Spending Per Capita (1000s)	0.583*** (0.133)	0.179*** (0.045)	5.988	1.774	Direct expenditures per capita for the fiscally standardized city (FiSC) Source: Lincoln Institute of Land Policy. FiSC database (2012).
State and Federal Aid as % Local Gov't Budget	0.0458 (0.103)	0.00431 (0.006)	36.2	9.7	Intergovernmental revenue as a percent of general revenue for the fiscally standardized city (FiSC) Source: Lincoln Institute of Land Policy. FiSC database (2012).
Local as % State-Local Spending	0.073 (0.307)	0.00639 (0.011)	50.4	7.6	Local government direct expenditures as a percent of state and local direct expenditures (State-level variable) Source: 2013 Survey of State and Local Gov't Finances (U.S. Census Bureau)
Constant	-2.679** (1.296)	10.07*** (2.057)			
N	69	69			
R-sq	0.675	0.626			
adj. R-sq	0.638	0.583			
F	25.2	13.15			

* p < 0.10, ** p < 0.05, *** p < 0.01; robust standard errors in parenthesis.

Regression #1 shows elasticities with all variables measured in natural logs.

Regression #2 measures all variables in levels except for median home value, which is measured as the natural log; these coefficients are used in appendix table 1b.

Notes: Washington, DC and New York City were excluded from the regression because they have very atypical revenue structures, and as major outliers they significantly altered the coefficient estimates and weakened the overall fit for the model. Honolulu and Newark were excluded because they do not have data in the FiSC database on property tax reliance or state and federal aid as a percent of the local government budget. The means and standard deviations shown in the table also exclude these four cities.

Appendix Table 2a: Homestead Property Taxes for Largest City in Each State: Median Valued Homes

		Tax Rate (%)			Tax Bill ($)			Median Home Value
State	**City**	**Rate**	**Rank**	**Change from '14**	**Rate**	**Rank**	**Change from '14**	
Alabama	Birmingham	0.662%	50	2 ↑	559	53	-	84,400
Alaska	Anchorage	1.263%	27	1 ↓	3,655	11	-	289,400
Arizona	Phoenix	1.228%	30	7 ↑	2,196	27	8 ↑	178,800
Arkansas	Little Rock	1.128%	36	2 ↓	1,684	39	6 ↓	149,300
California	Los Angeles	1.175%	33	2 ↓	5,942	6	-	505,500
Colorado	Denver	0.662%	51	-	1,873	34	2 ↑	283,100
Connecticut	Bridgeport	3.878%	1	-	6,705	2	-	172,900
DC	Washington	0.700%	48	1 ↑	3,408	13	-	486,900
Delaware	Wilmington	1.309%	23	1 ↑	2,357	25	3 ↑	180,100
Florida	Jacksonville	1.205%	31	3 ↓	1,586	43	3 ↓	131,600
Georgia	Atlanta	1.364%	22	-	2,970	17	1 ↑	217,700
Hawaii	Honolulu	0.301%	53	-	1,780	37	4 ↑	591,600
Idaho	Boise	0.829%	45	-	1,567	45	1 ↑	189,000
Illinois	Aurora*	3.715%	3	-	6,617	3	2 ↑	178,100
Illinois	Chicago	1.585%	18	1 ↓	3,483	12	-	219,800
Indiana	Indianapolis	1.065%	38	1 ↑	1,246	49	2 ↑	117,000
Iowa	Des Moines	2.390%	6	3 ↑	2,849	19	2 ↑	119,200
Kansas	Wichita	1.284%	24	5 ↑	1,552	46	2 ↓	120,900
Kentucky	Louisville	1.284%	25	2 ↑	1,823	36	2 ↓	142,000
Louisiana	New Orleans	0.953%	40	2 ↑	1,829	35	4 ↑	192,000
Maine	Portland	1.979%	12	1 ↑	4,838	8	1 ↑	244,500
Maryland	Baltimore	2.087%	10	-	3,147	15	1 ↓	150,800
Massachusetts	Boston	0.672%	49	1 ↓	2,777	20	-	413,500
Michigan	Detroit	3.809%	2	-	1,596	42	1 ↑	41,900
Minnesota	Minneapolis	1.422%	21	1 ↓	2,909	18	1 ↓	204,600
Mississippi	Jackson	1.460%	20	1 ↑	1,326	47	2 ↑	90,800
Missouri	Kansas City	1.490%	19	-	1,971	33	3 ↓	132,300
Montana	Billings	0.865%	43	2 ↓	1,679	40	3 ↓	194,100
Nebraska	Omaha	2.008%	11	-	2,709	21	2 ↓	134,900
Nevada	Las Vegas	1.131%	35	-	2,118	28	4 ↑	187,300
New Hampshire	Manchester	2.367%	7	1 ↓	4,673	9	1 ↓	197,400
New Jersey	Newark	3.046%	4	-	6,585	4	-	216,200
New Mexico	Albuquerque	1.273%	26	1 ↓	2,355	26	3 ↓	185,000
New York	Buffalo*	1.741%	17	1 ↓	1,217	50	2 ↓	69,900
New York	New York City	1.125%	37	1 ↓	5,583	7	-	496,200
AVERAGE		**1.503%**			**2,801**			**207,025**

		Tax Rate (%)			Tax Bill ($)			Median Home Value
State	**City**	**Rate**	**Rank**	**Change from '14**	**Rate**	**Rank**	**Change from '14**	
North Carolina	Charlotte	1.162%	34	4 ↓	2,027	31	2 ↓	174,400
North Dakota	Fargo	1.232%	28	5 ↑	2,116	29	2 ↑	171,800
Ohio	Columbus	1.880%	13	1 ↑	2,437	22	2 ↑	129,600
Oklahoma	Oklahoma City	1.182%	32	-	1,644	41	1 ↑	139,100
Oregon	Portland	2.291%	9	1 ↓	7,144	1	-	311,800
Pennsylvania	Philadelphia	1.059%	39	1 ↓	1,575	44	1 ↑	148,700
Rhode Island	Providence	1.744%	16	2 ↑	3,202	14	2 ↑	183,600
South Carolina	Columbia	0.764%	46	1 ↑	1,206	51	1 ↓	157,800
South Dakota	Sioux Falls	1.230%	29	6 ↓	1,977	32	5 ↓	160,700
Tennessee	Memphis	1.837%	14	2 ↓	1,687	38	-	91,800
Texas	Houston	1.763%	15	-	2,371	24	1 ↑	134,500
Utah	Salt Lake City	0.853%	44	-	2,036	30	4 ↓	238,700
Vermont	Burlington	2.326%	8	1 ↓	6,265	5	2 ↓	269,300
Virginia	Virginia Beach	0.920%	41	2 ↑	2,409	23	1 ↓	261,800
Washington	Seattle	0.868%	42	2 ↓	4,109	10	-	473,300
West Virginia	Charleston	0.764%	47	1 ↓	791	52	-	103,600
Wisconsin	Milwaukee	2.675%	5	-	2,994	16	1 ↓	111,900
Wyoming	Cheyenne	0.652%	52	2 ↓	1,312	48	1 ↓	201,200
AVERAGE		**1.503%**			**2,801**			**207,025**

* Illinois and New York have two cities included in this table, because the tax systems in Chicago and New York City are significantly different from the rest of the state.
Source for median home values: *2014 American Community Survey*, 1-year data

Appendix Table 2b: Homestead Property Taxes for Largest City in Each State: Median Valued Homes, with Assessment Limits

		Tax Rate (%)			Tax Bill ($)			Median Home Value
State	**City**	**Rate**	**Rank**	**Change from '14**	**Rate**	**Rank**	**Change from '14**	
Alabama	Birmingham	0.662%	50	2 ↑	559	53	-	84,400
Alaska	Anchorage	1.263%	27	1 ↓	3,655	10	1 ↓	289,400
Arizona	Phoenix	1.095%	34	3 ↑	1,958	33	8 ↑	178,800
Arkansas	Little Rock	1.108%	33	1 ↑	1,654	40	6 ↓	149,300
California	Los Angeles	0.768%	44	1 ↑	3,884	9	2 ↑	505,500
Colorado	Denver	0.662%	51	-	1,873	34	1 ↑	283,100
Connecticut	Bridgeport	3.878%	1	-	6,705	1	-	172,900
DC	Washington	0.700%	48	-	3,408	12	1 ↑	486,900
Delaware	Wilmington	1.309%	23	1 ↑	2,357	25	3 ↑	180,100
Florida	Jacksonville	1.003%	37	7 ↓	1,320	46	4 ↓	131,600
Georgia	Atlanta	1.364%	22	-	2,970	17	1 ↑	217,700
Hawaii	Honolulu	0.301%	53	-	1,780	37	2 ↑	591,600
Idaho	Boise	0.829%	43	-	1,567	43	2 ↑	189,000
Illinois	Aurora*	3.715%	2	-	6,617	2	3 ↑	178,100
Illinois	Chicago	1.514%	18	1 ↓	3,328	13	3 ↓	219,800
Indiana	Indianapolis	1.065%	35	1 ↑	1,246	49	2 ↑	117,000
Iowa	Des Moines	2.390%	6	2 ↑	2,849	19	2 ↑	119,200
Kansas	Wichita	1.284%	24	4 ↑	1,552	44	1 ↓	120,900
Kentucky	Louisville	1.284%	25	2 ↑	1,823	34	3 ↓	142,000
Louisiana	New Orleans	0.953%	38	2 ↑	1,829	35	3 ↑	192,000
Maine	Portland	1.979%	11	2 ↑	4,838	6	1 ↑	244,500
Maryland	Baltimore	2.087%	9	-	3,147	15	1 ↓	150,800
Massachusetts	Boston	0.672%	49	2 ↓	2,777	20	-	413,500
Michigan	Detroit	3.143%	3	-	1,317	47	-	41,900
Minnesota	Minneapolis	1.422%	21	1 ↓	2,909	18	1 ↓	204,600
Mississippi	Jackson	1.460%	20	1 ↑	1,326	45	5 ↑	90,800
Missouri	Kansas City	1.490%	19	-	1,971	32	2 ↓	132,300
Montana	Billings	0.865%	41	2 ↓	1,679	39	3 ↓	194,100
Nebraska	Omaha	2.008%	10	1 ↑	2,709	21	2 ↓	134,900
Nevada	Las Vegas	1.131%	32	1 ↑	2,118	27	5 ↑	187,300
New Hampshire	Manchester	2.367%	7	1 ↓	4,673	7	1 ↓	197,400
New Jersey	Newark	3.046%	4	-	6,585	3	-	216,200
New Mexico	Albuquerque	1.273%	26	1 ↓	2,355	26	3 ↓	185,000
New York	Buffalo*	1.741%	17	1 ↓	1,217	50	1 ↓	69,900
New York	New York City	0.715%	47	2 ↑	3,547	11	1 ↑	496,200
AVERAGE		**1.459%**			**2,682**			**207,025**

		Tax Rate (%)			Tax Bill ($)			Median Home Value
State	**City**	**Rate**	**Rank**	**Change from '14**	**Rate**	**Rank**	**Change from '14**	
North Carolina	Charlotte	1.162%	31	2 ↓	2,027	30	1 ↓	174,400
North Dakota	Fargo	1.232%	28	4 ↑	2,116	28	3 ↑	171,800
Ohio	Columbus	1.880%	13	1 ↑	2,437	22	2 ↑	129,600
Oklahoma	Oklahoma City	1.164%	30	1 ↑	1,619	41	1 ↓	139,100
Oregon	Portland	1.915%	12	2 ↓	5,971	5	1 ↓	311,800
Pennsylvania	Philadelphia	1.059%	36	1 ↓	1,575	42	2 ↑	148,700
Rhode Island	Providence	1.744%	16	2 ↑	3,202	14	2 ↑	183,600
South Carolina	Columbia	0.719%	46	2 ↓	1,135	51	3 ↓	157,800
South Dakota	Sioux Falls	1.230%	29	6 ↓	1,977	31	4 ↓	160,700
Tennessee	Memphis	1.837%	14	2 ↓	1,687	38	1 ↓	91,800
Texas	Houston	1.754%	15	-	2,360	24	1 ↑	134,500
Utah	Salt Lake City	0.853%	42	-	2,036	29	3 ↓	238,700
Vermont	Burlington	2.326%	8	1 ↓	6,265	4	2 ↓	269,300
Virginia	Virginia Beach	0.920%	39	2 ↑	2,409	23	1 ↓	261,800
Washington	Seattle	0.868%	40	2 ↓	4,109	8	-	473,300
West Virginia	Charleston	0.764%	45	1 ↑	791	52	-	103,600
Wisconsin	Milwaukee	2.675%	5	-	2,994	16	1 ↓	111,900
Wyoming	Cheyenne	0.652%	52	2 ↓	1,312	48	2 ↓	201,200
AVERAGE		**1.459%**			**2,682**			**207,025**

* Illinois and New York have two cities included in this table, because the tax systems in Chicago and New York City are significantly different from the rest of the state.
Source for median home values: *2014 American Community Survey*, 1-year data

Appendix Table 2c: Homestead Property Taxes for Largest City in Each State: Homes worth $150,000 and $300,000

		$150,000 Property Value				$300,000 Property Value				Tax Rate Varies with Property Value
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Change from '14**	**Tax Rate**	**Tax Bill**	**Rank**	**Change from '14**	
Alabama	Birmingham	0.690%	1,035	48	2 ↑	0.707%	2,122	48	-	X
Alaska	Anchorage	1.228%	1,842	29	1 ↓	1.267%	3,800	28	1 ↓	X
Arizona	Phoenix	1.228%	1,842	30	6 ↑	1.228%	3,684	32	7 ↑	
Arkansas	Little Rock	1.129%	1,693	36	1 ↓	1.245%	3,736	29	1 ↑	X
California	Los Angeles	1.136%	1,705	34	1 ↓	1.164%	3,493	35	1 ↓	X
Colorado	Denver	0.662%	993	49	-	0.662%	1,985	49	1 ↑	
Connecticut	Bridgeport	3.878%	5,817	1	-	3.878%	11,634	1	-	
DC	Washington	0.420%	630	51	-	0.622%	1,867	51	-	X
Delaware	Wilmington	1.309%	1,963	22	1 ↓	1.309%	3,926	24	1 ↑	
Florida	Jacksonville	1.274%	1,911	25	1 ↓	1.519%	4,558	20	-	X
Georgia	Atlanta	1.218%	1,827	31	2 ↓	1.445%	4,335	23	-	X
Hawaii	Honolulu	0.162%	242	52	-	0.255%	765	53	-	X
Idaho	Boise	0.814%	1,222	44	-	1.125%	3,375	39	1 ↓	X
Illinois	Aurora*	3.641%	5,461	3	-	3.877%	11,630	2	1 ↑	X
Illinois	Chicago	1.484%	2,226	20	2 ↓	1.643%	4,928	19	2 ↓	X
Indiana	Indianapolis	1.074%	1,611	37	2 ↑	1.090%	3,269	41	-	X
Iowa	Des Moines	2.415%	3,623	6	3 ↑	2.464%	7,392	6	2 ↑	X
Kansas	Wichita	1.291%	1,937	23	4 ↑	1.306%	3,919	25	4 ↑	X
Kentucky	Louisville	1.284%	1,925	24	2 ↑	1.284%	3,851	27	1 ↑	
Louisiana	New Orleans	0.802%	1,202	45	-	1.147%	3,441	37	1 ↓	X
Maine	Portland	1.925%	2,888	12	4 ↑	1.994%	5,983	12	2 ↑	X
Maryland	Baltimore	2.087%	3,130	10	-	2.087%	6,261	10	-	
Massachusetts	Boston	0.113%	169	53	-	0.500%	1,499	52	-	X
Michigan	Detroit	3.809%	5,713	2	-	3.809%	11,427	3	1 ↓	
Minnesota	Minneapolis	1.327%	1,990	21	1 ↑	1.505%	4,515	21	-	X
Mississippi	Jackson	1.590%	2,385	18	1 ↑	1.690%	5,071	18	1 ↑	X
Missouri	Kansas City	1.490%	2,234	19	1 ↑	1.490%	4,469	22	-	
Montana	Billings	0.865%	1,298	42	1 ↓	0.865%	2,596	44	1 ↓	
Nebraska	Omaha	2.008%	3,012	11	-	2.008%	6,024	11	-	
Nevada	Las Vegas	1.131%	1,696	35	1 ↓	1.131%	3,393	38	1 ↓	
New Hampshire	Manchester	2.367%	3,551	7	1 ↓	2.367%	7,102	7	1 ↓	
New Jersey	Newark	3.046%	4,568	4	-	3.046%	9,137	4	-	
New Mexico	Albuquerque	1.262%	1,893	26	1 ↓	1.291%	3,872	26	-	X
New York	Buffalo*	1.879%	2,818	14	2 ↓	1.939%	5,817	13	1 ↓	X
New York	New York City	1.042%	1,562	39	1 ↓	1.102%	3,305	40	-	X
AVERAGE		**1.478%**	**2,218**			**1.541%**	**4,622**			**N = 26**

		$150,000 Property Value				$300,000 Property Value				Tax Rate Varies with Property Value
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Change from '14**	**Tax Rate**	**Tax Bill**	**Rank**	**Change from '14**	
North Carolina	Charlotte	1.162%	1,744	33	3 ↓	1.162%	3,487	36	4 ↓	
North Dakota	Fargo	1.232%	1,848	27	5 ↑	1.232%	3,695	30	5 ↑	
Ohio	Columbus	1.880%	2,821	13	1 ↑	1.880%	5,641	14	2 ↑	
Oklahoma	Oklahoma City	1.188%	1,782	32	1 ↓	1.226%	3,678	33	2 ↓	X
Oregon	Portland	2.291%	3,437	9	1 ↓	2.291%	6,874	9	-	
Pennsylvania	Philadelphia	1.061%	1,592	38	1 ↓	1.194%	3,582	34	1 ↓	X
Rhode Island	Providence	1.744%	2,616	17	-	1.744%	5,232	17	1 ↑	
South Carolina	Columbia	0.764%	1,146	46	1 ↑	0.764%	2,293	46	1 ↑	
South Dakota	Sioux Falls	1.230%	1,846	28	5 ↓	1.230%	3,691	31	7 ↓	
Tennessee	Memphis	1.837%	2,756	15	2 ↓	1.837%	5,512	16	3 ↓	
Texas	Houston	1.781%	2,672	16	1 ↓	1.861%	5,583	15	-	X
Utah	Salt Lake City	0.853%	1,280	43	-	0.853%	2,559	45	-	
Vermont	Burlington	2.326%	3,490	8	1 ↓	2.326%	6,979	8	1 ↓	
Virginia	Virginia Beach	0.920%	1,380	40	2 ↑	0.920%	2,760	42	2 ↑	
Washington	Seattle	0.868%	1,302	41	1 ↓	0.868%	2,604	43	1 ↓	
West Virginia	Charleston	0.764%	1,146	47	1 ↓	0.764%	2,292	47	1 ↓	
Wisconsin	Milwaukee	2.725%	4,087	5	-	2.797%	8,392	5	-	X
Wyoming	Cheyenne	0.652%	978	50	2 ↓	0.652%	1,956	50	1 ↓	
AVERAGE		**1.478%**	**2,218**			**1.541%**	**4,622**			**N = 26**

* Illinois and New York have two cities included in this table, because the tax systems in Chicago and New York City are significantly different from the rest of the state.

Appendix Table 2d: Homestead Property Taxes for the Largest Fifty U.S. Cities: Median Valued Homes

		Tax Rate (%)			Tax Bill ($)			Median Home Value
State	**City**	**Rate**	**Rank**	**Change from '14**	**Rate**	**Rank**	**Change from '14**	
Arizona	Mesa	0.830%	46	-	1,423	48	-	171,400
Arizona	Phoenix	1.228%	27	14 ↑	2,196	31	7 ↑	178,800
Arizona	Tucson	1.209%	28	-	1,530	47	2 ↓	126,500
California	Fresno	1.184%	30	2 ↑	2,250	29	2 ↑	190,000
California	Long Beach	1.107%	39	1 ↓	4,881	9	-	440,900
California	Los Angeles	1.175%	32	1 ↓	5,942	5	-	505,500
California	Oakland	1.346%	21	1 ↓	6,723	4	-	499,400
California	Sacramento	1.111%	38	2 ↑	2,837	21	4 ↑	255,300
California	San Diego	1.158%	35	-	5,662	6	1 ↑	489,000
California	San Francisco	1.173%	33	1 ↑	9,931	1	-	846,800
California	San Jose	1.277%	25	-	8,447	2	-	661,600
Colorado	Colorado Springs	0.467%	50	-	1,013	50	-	217,200
Colorado	Denver	0.662%	49	-	1,873	36	4 ↑	283,100
DC	Washington	0.700%	47	1 ↑	3,408	13	-	486,900
Florida	Jacksonville	1.205%	29	2 ↓	1,586	45	2 ↓	131,600
Florida	Miami	1.613%	15	2 ↑	3,953	11	1 ↑	245,000
Georgia	Atlanta	1.364%	20	1 ↑	2,970	19	3 ↑	217,700
Illinois	Chicago	1.585%	16	-	3,483	12	1 ↓	219,800
Indiana	Indianapolis	1.065%	40	3 ↑	1,246	49	-	117,000
Kansas	Wichita	1.284%	23	6 ↑	1,552	46	1 ↑	120,900
Kentucky	Louisville	1.284%	24	2 ↑	1,823	38	1 ↓	142,000
Louisiana	New Orleans*	0.953%	43	NA	1,829	37	NA	192,000
Maryland	Baltimore	2.087%	9	2 ↑	3,147	15	1 ↓	150,800
Massachusetts	Boston	0.672%	48	1 ↓	2,777	22	2 ↑	413,500
Michigan	Detroit	3.809%	1	-	1,596	44	2 ↑	41,900
Minnesota	Minneapolis	1.422%	18	1 ↑	2,909	20	-	204,600
Missouri	Kansas City	1.490%	17	1 ↑	1,971	35	2 ↓	132,300
Nebraska	Omaha	2.008%	10	2 ↑	2,709	23	-	134,900
Nevada	Las Vegas	1.131%	36	-	2,118	32	3 ↑	187,300
New Mexico	Albuquerque	1.273%	26	2 ↓	2,355	28	1 ↓	185,000
New York	New York City	1.125%	37	2 ↑	5,583	7	1 ↓	496,200
North Carolina	Charlotte	1.162%	34	4 ↓	2,027	33	1 ↓	174,400
North Carolina	Raleigh	1.040%	41	1 ↑	2,236	30	-	215,000
Ohio	Cleveland	2.618%	4	1 ↓	1,725	39	-	65,900
Ohio	Columbus	1.880%	12	2 ↑	2,437	25	3 ↑	129,600
AVERAGE		**1.467%**			**3,097**			**239,962**

		Tax Rate (%)			Tax Bill ($)			Median Home Value
State	**City**	**Rate**	**Rank**	**Change from '14**	**Rate**	**Rank**	**Change from '14**	
Oklahoma	Oklahoma City	1.182%	31	2 ↑	1,644	43	1 ↑	139,100
Oklahoma	Tulsa	1.371%	19	3 ↑	1,700	40	2 ↑	124,000
Oregon	Portland	2.291%	6	1 ↑	7,144	3	-	311,800
Pennsylvania	Philadelphia	1.327%	22	1 ↑	1,973	34	2 ↑	148,700
Tennessee	Memphis	1.837%	13	-	1,687	41	-	91,800
Tennessee	Nashville	0.996%	42	5 ↓	1,686	42	8 ↓	169,300
Texas	Austin	1.984%	11	1 ↓	5,077	8	-	255,900
Texas	Dallas	2.117%	8	1 ↑	2,978	18	3 ↑	140,700
Texas	El Paso	2.640%	3	2 ↑	3,147	14	3 ↑	119,200
Texas	Fort Worth	2.467%	5	1 ↑	3,141	16	2 ↑	127,300
Texas	Houston	1.763%	14	1 ↑	2,371	27	2 ↑	134,500
Texas	San Antonio	2.225%	7	3 ↓	2,648	24	8 ↓	119,000
Virginia	Virginia Beach	0.920%	44	1 ↑	2,409	26	-	261,800
Washington	Seattle	0.868%	45	1 ↓	4,109	10	-	473,300
Wisconsin	Milwaukee	2.675%	2	-	2,994	17	2 ↓	111,900
AVERAGE		**1.467%**			**3,097**			**239,962**

* New Orleans, LA replaces Arlington, TX in the set of fifty largest cities.
Source for median home values: *2014 American Community Survey*, 1-year data

Appendix Table 2e: Homestead Property Taxes for the Largest Fifty U.S. Cities: Median Valued Homes, with Assessment Limits

		Tax Rate (%)			Tax Bill ($)			Median Home Value
State	**City**	**Rate**	**Rank**	**Change from '14**	**Rate**	**Rank**	**Change from '14**	
Arizona	Mesa	0.740%	44	2 ↓	1,269	48	-	171,400
Arizona	Phoenix	1.095%	29	8 ↑	1,958	34	9 ↑	178,800
Arizona	Tucson	1.209%	24	1 ↑	1,530	45	1 ↓	126,500
California	Fresno	0.953%	35	1 ↑	1,811	38	2 ↑	190,000
California	Long Beach	0.665%	48	5 ↓	2,934	18	4 ↓	440,900
California	Los Angeles	0.768%	43	2 ↑	3,884	8	1 ↑	505,500
California	Oakland	0.986%	34	2 ↓	4,924	5	-	499,400
California	Sacramento	0.829%	41	-	2,116	30	1 ↑	255,300
California	San Diego	0.929%	38	-	4,543	6	-	489,000
California	San Francisco	0.826%	42	2 ↑	6,991	1	2 ↑	846,800
California	San Jose	0.942%	37	2 ↓	6,232	2	1 ↓	661,600
Colorado	Colorado Springs	0.467%	50	-	1,013	50	-	217,200
Colorado	Denver	0.662%	49	-	1,873	35	3 ↑	283,100
DC	Washington	0.700%	46	1 ↑	3,408	10	1 ↑	486,900
Florida	Jacksonville	1.003%	32	4 ↓	1,320	46	1 ↓	131,600
Florida	Miami	1.153%	27	5 ↓	2,826	20	1 ↓	245,000
Georgia	Atlanta	1.364%	18	1 ↑	2,970	17	5 ↑	217,700
Illinois	Chicago	1.514%	15	1 ↑	3,328	11	3 ↓	219,800
Indiana	Indianapolis	1.065%	30	4 ↑	1,246	49	-	117,000
Kansas	Wichita	1.284%	21	5 ↑	1,552	44	2 ↑	120,900
Kentucky	Louisville	1.284%	22	2 ↑	1,823	37	1 ↓	142,000
Louisiana	New Orleans*	0.953%	36	NA	1,829	36	NA	192,000
Maryland	Baltimore	2.087%	8	2 ↑	3,147	13	1 ↓	150,800
Massachusetts	Boston	0.672%	47	1 ↓	2,777	21	3 ↑	413,500
Michigan	Detroit	3.143%	1	-	1,317	47	-	41,900
Minnesota	Minneapolis	1.422%	17	1 ↑	2,909	19	1 ↑	204,600
Missouri	Kansas City	1.490%	16	1 ↑	1,971	33	1 ↓	132,300
Nebraska	Omaha	2.008%	9	3 ↑	2,709	22	1 ↑	134,900
Nevada	Las Vegas	1.131%	28	2 ↑	2,118	29	5 ↑	187,300
New Mexico	Albuquerque	1.273%	23	-	2,355	27	1 ↓	185,000
New York	New York City	0.715%	45	3 ↑	3,547	9	1 ↑	496,200
North Carolina	Charlotte	1.162%	26	1 ↑	2,027	31	1 ↓	174,400
North Carolina	Raleigh	1.040%	31	2 ↑	2,236	28	1 ↑	215,000
Ohio	Cleveland	2.618%	4	1 ↓	1,725	39	2 ↓	65,900
Ohio	Columbus	1.880%	12	2 ↑	2,437	24	3 ↑	129,600
AVERAGE		**1.365%**			**2,721**			**239,962**

		Tax Rate (%)			Tax Bill ($)			Median Home Value
State	**City**	**Rate**	**Rank**	**Change from '14**	**Rate**	**Rank**	**Change from '14**	
Oklahoma	Oklahoma City	1.164%	25	4 ↑	1,619	43	1 ↓	139,100
Oklahoma	Tulsa	1.347%	19	1 ↑	1,670	42	1 ↓	124,000
Oregon	Portland	1.915%	11	-	5,971	3	1 ↓	311,800
Pennsylvania	Philadelphia	1.327%	20	1 ↑	1,973	32	3 ↑	148,700
Tennessee	Memphis	1.837%	13	-	1,687	40	1 ↓	91,800
Tennessee	Nashville	0.996%	33	2 ↓	1,686	41	8 ↓	169,300
Texas	Austin	1.957%	10	1 ↓	5,007	4	-	255,900
Texas	Dallas	2.117%	7	1 ↑	2,978	16	5 ↑	140,700
Texas	El Paso	2.640%	3	2 ↑	3,147	12	4 ↑	119,200
Texas	Fort Worth	2.467%	5	1 ↑	3,141	14	3 ↑	127,300
Texas	Houston	1.754%	14	1 ↑	2,360	26	2 ↑	134,500
Texas	San Antonio	2.225%	6	2 ↓	2,648	23	8 ↓	119,000
Virginia	Virginia Beach	0.920%	39	1 ↑	2,409	25	-	261,800
Washington	Seattle	0.868%	40	1 ↓	4,109	7	-	473,300
Wisconsin	Milwaukee	2.675%	2	-	2,994	15	2 ↓	111,900
AVERAGE		**1.365%**			**2,721**			**239,962**

* New Orleans, LA replaces Arlington, TX in the set of fifty largest cities.
Source for median home values: *2014 American Community Survey*, 1-year data

Appendix Table 2f: Homestead Property Taxes for the Largest Fifty U.S. Cities: Homes worth $150,000 and $300,000

		$150,000 Property Value				$300,000 Property Value				Tax Rate Varies with Property Value
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Change from '14**	**Tax Rate**	**Tax Bill**	**Rank**	**Change from '14**	
Arizona	Mesa	0.830%	1,245	45	1 ↑	0.830%	2,491	46	-	
Arizona	Phoenix	1.228%	1,842	27	11 ↑	1.228%	3,684	28	12 ↑	
Arizona	Tucson	1.209%	1,814	29	3 ↓	1.209%	3,628	30	1 ↓	
California	Fresno	1.172%	1,758	31	1 ↑	1.201%	3,602	31	1 ↑	X
California	Long Beach	1.072%	1,609	39	-	1.099%	3,296	40	2 ↓	X
California	Los Angeles	1.136%	1,705	33	-	1.164%	3,493	32	1 ↑	X
California	Oakland	1.302%	1,953	21	-	1.334%	4,001	22	1 ↑	X
California	Sacramento	1.089%	1,634	37	3 ↑	1.116%	3,348	38	1 ↑	X
California	San Diego	1.120%	1,680	36	-	1.147%	3,442	35	1 ↓	X
California	San Francisco	1.127%	1,691	35	2 ↑	1.155%	3,465	34	1 ↑	X
California	San Jose	1.230%	1,845	26	3 ↑	1.260%	3,781	27	1 ↑	X
Colorado	Colorado Springs	0.467%	700	48	-	0.467%	1,400	50	-	
Colorado	Denver	0.662%	993	47	-	0.662%	1,985	47	-	
DC	Washington	0.420%	630	49	-	0.622%	1,867	48	-	X
Florida	Jacksonville	1.274%	1,911	24	2 ↓	1.519%	4,558	17	1 ↑	X
Florida	Miami	1.385%	2,077	18	-	1.680%	5,039	15	2 ↑	X
Georgia	Atlanta	1.218%	1,827	28	-	1.445%	4,335	20	1 ↑	X
Illinois	Chicago	1.484%	2,226	16	-	1.643%	4,928	16	-	X
Indiana	Indianapolis	1.074%	1,611	38	4 ↑	1.090%	3,269	41	2 ↑	X
Kansas	Wichita	1.291%	1,937	22	5 ↑	1.306%	3,919	24	3 ↑	X
Kentucky	Louisville	1.284%	1,925	23	2 ↑	1.284%	3,851	26	-	
Louisiana	New Orleans*	0.802%	1,202	46	NA	1.147%	3,441	36	NA	X
Maryland	Baltimore	2.087%	3,130	9	1 ↑	2.087%	6,261	9	2 ↑	
Massachusetts	Boston	0.113%	169	50	-	0.500%	1,499	49	-	X
Michigan	Detroit	3.809%	5,713	1	-	3.809%	11,427	1	-	
Minnesota	Minneapolis	1.327%	1,990	19	1 ↑	1.505%	4,515	18	1 ↑	X
Missouri	Kansas City	1.490%	2,234	15	2 ↑	1.490%	4,469	19	1 ↑	
Nebraska	Omaha	2.008%	3,012	10	2 ↑	2.008%	6,024	10	2 ↑	
Nevada	Las Vegas	1.131%	1,696	34	-	1.131%	3,393	37	1 ↓	
New Mexico	Albuquerque	1.262%	1,893	25	1 ↓	1.291%	3,872	25	-	X
New York	New York City	1.042%	1,562	40	3 ↑	1.102%	3,305	39	2 ↑	X
North Carolina	Charlotte	1.162%	1,744	32	2 ↓	1.162%	3,487	33	2 ↓	
North Carolina	Raleigh	1.040%	1,560	41	-	1.040%	3,120	42	-	
Ohio	Cleveland	2.618%	3,926	4	1 ↓	2.618%	7,853	4	-	
Ohio	Columbus	1.880%	2,821	12	2 ↑	1.880%	5,641	12	3 ↑	
AVERAGE		**1.434%**	**2,151**			**1.494%**	**4,481**			**N = 29**

		$150,000 Property Value				$300,000 Property Value				Tax Rate Varies with Property Value
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Change from '14**	**Tax Rate**	**Tax Bill**	**Rank**	**Change from '14**	
Oklahoma	Oklahoma City	1.188%	1,782	30	1 ↑	1.226%	3,678	29	1 ↑	X
Oklahoma	Tulsa	1.390%	2,085	17	2 ↑	1.435%	4,304	21	1 ↑	X
Oregon	Portland	2.291%	3,437	6	1 ↑	2.291%	6,874	7	1 ↑	
Pennsylvania	Philadelphia	1.327%	1,990	20	3 ↑	1.327%	3,980	23	1 ↑	
Tennessee	Memphis	1.837%	2,756	13	-	1.837%	5,512	14	1 ↓	
Tennessee	Nashville	0.996%	1,494	42	7 ↓	0.996%	2,988	43	6 ↓	
Texas	Austin	1.933%	2,900	11	-	1.995%	5,984	11	1 ↓	X
Texas	Dallas	2.124%	3,187	8	1 ↑	2.182%	6,546	8	1 ↑	X
Texas	El Paso	2.682%	4,024	3	2 ↑	2.764%	8,292	3	2 ↑	X
Texas	Fort Worth	2.492%	3,737	5	1 ↑	2.559%	7,678	5	1 ↑	X
Texas	Houston	1.781%	2,672	14	1 ↑	1.861%	5,583	13	1 ↑	X
Texas	San Antonio	2.285%	3,428	7	3 ↓	2.401%	7,203	6	3 ↓	X
Virginia	Virginia Beach	0.920%	1,380	43	2 ↑	0.920%	2,760	44	1 ↑	
Washington	Seattle	0.868%	1,302	44	-	0.868%	2,604	45	1 ↓	
Wisconsin	Milwaukee	2.725%	4,087	2	-	2.797%	8,392	2	-	X
AVERAGE		**1.434%**	**2,151**			**1.494%**	**4,481**			**N = 29**

* New Orleans, LA replaces Arlington, TX in the set of fifty largest cities

Appendix Table 2g: Homestead Property Taxes for Selected Rural Municipalities: Median Valued Homes

		Tax Rate (%)		Tax Bill ($)		Median Home Value
State	**Municipality**	**Rate**	**Rank***	**Bill**	**Rank***	
Alabama	Monroeville	0.364%	48	344	49	94,400
Alaska	Ketchican	0.963%	32	2,291	13	237,800
Arizona	Safford	0.644%	42	856	38	132,900
Arkansas	Pocahontas	0.215%	49	153	50	71,100
California	Yreka	1.007%	31	1,596	18	158,600
Colorado	Walsenburg	0.572%	45	445	48	77,800
Connecticut	Litchfield	2.069%	12	7,472	1	361,200
Delaware	Georgetown	0.594%	44	1,306	24	220,000
Florida	Moore Haven	1.069%	26	857	37	80,100
Georgia	Fitzgerald	1.489%	19	1,257	27	84,400
Hawaii	Kauai	0.201%	50	938	33	467,500
Idaho	St. Anthony	0.869%	34	825	39	95,000
Illinois	Galena	2.091%	10	3,154	6	150,800
Indiana	North Vernon	0.791%	37	629	42	79,500
Iowa	Hampton	1.953%	15	1,601	17	82,000
Kansas	Iola	1.978%	14	1,179	29	59,600
Kentucky	Morehead	1.051%	29	1,271	26	120,900
Louisiana	Natchitoches	0.370%	47	519	47	140,400
Maine	Rockland	1.981%	13	3,010	7	152,000
Maryland	Denton	1.565%	18	2,821	9	180,300
Massachusetts	Adams	2.094%	9	2,909	8	138,900
Michigan	Manistique	2.201%	6	1,400	23	63,600
Minnesota	Glencoe	1.243%	22	1,733	16	139,400
Mississippi	Philadelphia	1.058%	28	920	35	87,000
Missouri	Boonville	1.068%	27	1,150	30	107,700
Montana	Glasgow	0.931%	33	1,135	31	121,900
Nebraska	Sidney	2.121%	8	2,437	11	114,900
Nevada	Fallon	1.270%	21	1,431	21	112,700
New Hampshire	Lancaster	2.809%	3	4,091	5	145,600
New Jersey	Maurice River Twp	2.463%	4	4,337	4	176,100
New Mexico	Santa Rosa	0.847%	35	727	41	85,800
New York	Warsaw	2.851%	2	2,592	10	90,900
North Carolina	Edenton	1.039%	30	1,284	25	123,600
North Dakota	Devils Lake	1.083%	25	932	34	86,100
Ohio	Bryan	1.480%	20	1,434	20	96,900
AVERAGE		**1.326%**		**1,750**		**132,356**

		Tax Rate (%)		Tax Bill ($)		Median Home Value
State	**Municipality**	**Rate**	**Rank***	**Bill**	**Rank***	
Oklahoma	Mangum	0.786%	38	598	45	76,100
Oregon	Tillamook	1.166%	24	1,940	15	166,300
Pennsylvania	Ridgway	2.856%	1	2,014	14	70,500
Rhode Island	Hopkinton	2.071%	11	5,398	3	260,700
South Carolina	Mullins	0.833%	36	618	43	74,200
South Dakota	Madison	1.602%	16	1,419	22	88,600
Tennessee	Savannah	0.651%	41	566	46	87,000
Texas	Fort Stockton	1.575%	17	1,247	28	79,200
Utah	Richfield	0.664%	40	1,048	32	157,700
Vermont	Hartford	2.450%	5	5,500	2	224,500
Virginia	Wise	0.556%	46	787	40	141,500
Washington	Okanogan	1.239%	23	1,518	19	122,500
West Virginia	Elkins	0.608%	43	611	44	100,600
Wisconsin	Rice Lake	2.140%	7	2,333	12	109,000
Wyoming	Worland	0.710%	39	866	36	122,000
AVERAGE		**1.326%**		**1,750**		**132,356**

* The 2015 report is the first to include estimates of property taxes for a median valued home in rural municipalities, so there is no 2014 data for comparison.
Source for median home values: *2014 American Community Survey*, 5-year data

Appendix Table 2h: Homestead Property Taxes for Selected Rural Municipalities: Homes worth $150,000 and $300,000

		$150,000 Property Value				$300,000 Property Value				Tax Rate Varies with Property Value
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Change from '14**	**Tax Rate**	**Tax Bill**	**Rank**	**Change from '14**	
Alabama	Monroeville	0.381%	572	49	-	0.396%	1,187	49	-	X
Alaska	Ketchican	0.963%	1,445	33	2 ↓	0.963%	2,890	34	2 ↓	
Arizona	Safford	0.644%	966	42	-	0.644%	1,933	42	1 ↑	
Arkansas	Pocahontas	0.474%	710	47	1 ↑	0.590%	1,771	46	1 ↑	X
California	Yreka	1.004%	1,506	31	1 ↑	1.028%	3,085	32	1 ↑	X
Colorado	Walsenburg	0.572%	857	45	-	0.572%	1,715	47	1 ↓	
Connecticut	Litchfield	2.069%	3,103	12	-	2.069%	6,206	12	-	
Delaware	Georgetown	0.594%	890	44	4 ↓	0.594%	1,781	45	4 ↓	
Florida	Moore Haven	1.641%	2,462	17	1 ↑	1.969%	5,906	16	3 ↓	X
Georgia	Fitzgerald	1.593%	2,389	19	2 ↓	1.659%	4,977	18	-	X
Hawaii	Kauai	0.033%	50	50	-	0.142%	427	50	-	X
Idaho	St. Anthony	0.869%	1,303	36	1 ↑	1.231%	3,693	26	1 ↑	X
Illinois	Galena	2.090%	3,135	10	-	2.232%	6,697	7	1 ↑	X
Indiana	North Vernon	0.970%	1,455	32	1 ↑	0.970%	2,910	33	1 ↑	
Iowa	Hampton	2.017%	3,026	14	3 ↓	2.056%	6,169	13	2 ↓	X
Kansas	Iola	2.025%	3,037	13	4 ↓	2.040%	6,121	15	5 ↓	X
Kentucky	Morehead	1.051%	1,577	29	1	1.051%	3,154	30	1 ↑	
Louisiana	Natchitoches	0.403%	604	48	1 ↓	0.644%	1,932	43	3 ↓	X
Maine	Rockland	1.979%	2,968	15	1 ↓	2.049%	6,148	14	1 ↑	X
Maryland	Denton	1.565%	2,347	20	1 ↑	1.565%	4,694	20	1 ↑	
Massachusetts	Adams	2.094%	3,141	9	4 ↑	2.094%	6,283	10	4 ↑	
Michigan	Manistique	2.201%	3,302	6	-	2.201%	6,604	8	1 ↓	
Minnesota	Glencoe	1.271%	1,906	22	-	1.455%	4,366	22	-	X
Mississippi	Philadelphia	1.203%	1,804	25	-	1.303%	3,908	23	-	X
Missouri	Boonville	1.068%	1,602	28	1 ↓	1.068%	3,204	29	1 ↓	
Montana	Glasgow	0.931%	1,396	34	4 ↑	0.931%	2,792	35	3 ↑	
Nebraska	Sidney	2.121%	3,181	8	-	2.121%	6,362	9	-	
Nevada	Fallon	1.270%	1,905	23	-	1.270%	3,810	24	-	
New Hampshire	Lancaster	2.809%	4,214	3	-	2.809%	8,428	3	-	
New Jersey	Maurice River Twp	2.463%	3,694	4	-	2.463%	7,389	4	-	
New Mexico	Santa Rosa	0.875%	1,312	35	1 ↓	0.894%	2,681	36	1 ↓	X
New York	Warsaw	3.134%	4,701	1	-	3.352%	10,056	1	-	X
North Carolina	Edenton	1.039%	1,558	30	1 ↓	1.039%	3,116	31	1 ↓	
North Dakota	Devils Lake	1.083%	1,624	27	1 ↑	1.083%	3,248	28	1 ↑	
Ohio	Bryan	1.480%	2,220	21	2 ↓	1.480%	4,439	21	2 ↓	
AVERAGE		**1.365%**	**2,048**			**1.411%**	**4,232**			**N = 25**

		$150,000 Property Value				$300,000 Property Value				Tax Rate Varies with Property Value
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Change from '14**	**Tax Rate**	**Tax Bill**	**Rank**	**Change from '14**	
Oklahoma	Mangum	0.834%	1,251	37	1 ↓	0.858%	2,575	37	1 ↓	X
Oregon	Tillamook	1.166%	1,750	26	-	1.166%	3,499	27	1 ↓	
Pennsylvania	Ridgway	2.948%	4,422	2	-	2.988%	8,965	2	-	
Rhode Island	Hopkinton	2.071%	3,106	11	4 ↑	2.071%	6,212	11	5 ↑	X
South Carolina	Mullins	0.833%	1,250	38	3 ↓	0.833%	2,500	38	1 ↓	X
South Dakota	Madison	1.602%	2,403	18	2 ↑	1.602%	4,806	19	1 ↑	
Tennessee	Savannah	0.651%	977	41	2 ↑	0.651%	1,953	41	3 ↑	
Texas	Fort Stockton	1.762%	2,643	16	-	1.867%	5,601	17	-	
Utah	Richfield	0.664%	997	40	1 ↑	0.664%	1,993	40	2 ↑	X
Vermont	Hartford	2.450%	3,675	5	-	2.450%	7,350	5	-	X
Virginia	Wise	0.556%	834	46	-	0.556%	1,669	48	-	X
Washington	Okanogan	1.239%	1,858	24	-	1.239%	3,716	25	-	X
West Virginia	Elkins	0.608%	911	43	1 ↑	0.608%	1,823	44	1 ↑	X
Wisconsin	Rice Lake	2.186%	3,278	7	-	2.246%	6,737	6	-	
Wyoming	Worland	0.710%	1,065	39	-	0.710%	2,131	39	-	X
AVERAGE		**1.365%**	**2,048**			**1.411%**	**4,232**			**N = 25**

Appendix Table 3a: Commercial Property Taxes for Largest City in Each State

		Land and Building Value: $100,000			Land and Building Value: $1 Million			Land and Building Value: $25 Million			Tax Rate Varies with Property Value	Lower Tax Rate on Personal Property
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**		
Alabama	Birmingham	1.450%	1,740	36 (2 ↑)	1.450%	17,400	38 (1 ↑)	1.450%	435,000	39 (2 ↑)		
Alaska	Anchorage	1.137%	1,365	44 (1 ↑)	1.358%	16,292	41 (-)	1.381%	414,356	42 (2 ↓)	X	X
Arizona	Phoenix	2.114%	2,537	24 (2 ↑)	2.257%	27,086	23 (1 ↑)	2.638%	791,431	17 (1 ↑)	X	X
Arkansas	Little Rock	1.436%	1,723	37 (1 ↓)	1.436%	17,231	39 (1 ↓)	1.436%	430,765	40 (1 ↓)		X
California	Los Angeles	1.192%	1,430	42 (1 ↑)	1.192%	14,304	44 (2 ↑)	1.192%	357,598	44 (2 ↑)		
Colorado	Denver	2.397%	2,876	19 (2 ↑)	2.397%	28,758	20 (1 ↑)	2.397%	718,957	21 (1 ↑)		
Connecticut	Bridgeport	3.590%	4,308	5 (-)	3.590%	43,084	5 (2 ↑)	3.590%	1,077,104	5 (2 ↑)		X
DC	Washington	1.266%	1,520	41 (1 ↓)	1.266%	15,197	43 (1 ↓)	1.941%	582,313	30 (1 ↑)	X	X
Delaware	Wilmington	1.042%	1,251	48 (1 ↑)	1.042%	12,510	49 (-)	1.042%	312,739	49 (-)		X
Florida	Jacksonville	1.471%	1,765	35 (2 ↓)	1.735%	20,822	30 (1 ↑)	1.771%	531,428	31 (1 ↑)	X	X
Georgia	Atlanta	1.672%	2,006	29 (1 ↑)	1.672%	20,060	31 (1 ↑)	1.672%	501,494	33 (-)		
Hawaii	Honolulu	0.908%	1,089	51 (1 ↑)	0.908%	10,892	51 (1 ↑)	0.908%	272,304	51 (1 ↑)		X
Idaho	Boise	1.406%	1,688	38 (1 ↓)	1.547%	18,563	35 (1 ↓)	1.682%	504,563	32 (2 ↑)	X	X
Illinois	Aurora*	3.427%	4,112	6 (-)	3.427%	41,124	6 (2 ↑)	3.427%	1,028,106	6 (2 ↑)		X
Illinois	Chicago	3.604%	4,325	4 (1 ↓)	3.604%	43,249	4 (1 ↓)	3.604%	1,081,225	4 (1 ↓)		X
Indiana	Indianapolis	2.836%	3,404	9 (2 ↓)	2.836%	34,035	12 (3 ↓)	2.836%	850,887	12 (3 ↓)		
Iowa	Des Moines	2.258%	2,709	22 (12 ↓)	3.109%	37,312	9 (4 ↓)	3.294%	988,070	8 (4 ↓)	X	X
Kansas	Wichita	2.831%	3,398	10 (4 ↑)	2.831%	33,977	13 (2 ↑)	2.831%	849,416	13 (2 ↑)		
Kentucky	Louisville	1.400%	1,680	39 (-)	1.400%	16,804	40 (-)	1.400%	420,105	41 (1 ↑)		
Louisiana	New Orleans	2.106%	2,527	25 (1 ↓)	2.106%	25,274	25 (-)	2.106%	631,848	25 (-)		
Maine	Portland	2.063%	2,476	27 (2 ↑)	2.063%	24,756	27 (2 ↑)	2.063%	618,900	27 (3 ↑)		
Maryland	Baltimore	2.662%	3,194	14 (5 ↑)	2.662%	31,941	16 (3 ↑)	2.662%	798,523	16 (4 ↑)		
Massachusetts	Boston	2.239%	2,686	23 (12 ↓)	2.239%	26,863	24 (11 ↓)	2.239%	671,580	24 (11 ↓)		X
Michigan	Detroit	4.125%	4,950	1 (-)	4.125%	49,502	1 (-)	4.125%	1,237,562	1 (-)		X
Minnesota	Minneapolis	2.576%	3,092	16 (1 ↓)	3.254%	39,047	7 (1 ↓)	3.369%	1,010,610	7 (1 ↓)	X	X
Mississippi	Jackson	2.685%	3,223	13 (4 ↑)	2.685%	32,225	15 (2 ↑)	2.685%	805,635	15 (2 ↑)		
Missouri	Kansas City	2.751%	3,301	12 (1 ↑)	2.751%	33,013	14 (-)	2.751%	825,337	14 (-)		X
Montana	Billings	1.009%	1,211	50 (4 ↓)	1.091%	13,095	48 (4 ↓)	1.170%	350,948	46 (3 ↓)	X	X
Nebraska	Omaha	2.099%	2,518	26 (1 ↑)	2.099%	25,183	26 (1 ↑)	2.099%	629,572	26 (1 ↑)		
Nevada	Las Vegas	1.123%	1,347	46 (1 ↑)	1.123%	13,473	47 (1 ↑)	1.123%	336,835	48 (-)		
New Hampshire	Manchester	1.973%	2,367	28 (-)	1.973%	23,674	28 (-)	1.973%	591,860	29 (-)		X
New Jersey	Newark	2.538%	3,046	17 (3 ↑)	2.538%	30,456	18 (2 ↑)	2.538%	761,401	19 (2 ↑)		X
New Mexico	Albuquerque	1.488%	1,785	34 (1 ↑)	1.488%	17,854	37 (-)	1.488%	446,348	38 (-)		
New York	Buffalo*	2.618%	3,141	15 (1 ↑)	2.618%	31,413	17 (1 ↓)	2.618%	785,315	18 (2 ↓)		X
New York	New York City	3.956%	4,747	2 (-)	3.956%	47,472	2 (-)	3.956%	1,186,812	2 (-)		X
AVERAGE		**2.053%**	**2,463**		**2.113%**	**25,357**		**2.147%**	**644,066**		**N = 10**	**N = 27**

		Land and Building Value: $100,000			Land and Building Value: $1 Million			Land and Building Value: $25 Million			Tax Rate Varies with Property Value	Lower Tax Rate on Personal Property
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**		
North Carolina	Charlotte	1.184%	1,421	43 (1 ↓)	1.184%	14,213	45 (-)	1.184%	355,313	45 (-)		
North Dakota	Fargo	1.135%	1,363	45 (1 ↓)	1.135%	13,626	46 (1 ↑)	1.135%	340,643	47 (-)		X
Ohio	Columbus	1.622%	1,946	30 (5 ↓)	1.622%	19,464	32 (6 ↓)	1.622%	486,612	34 (8 ↓)		X
Oklahoma	Oklahoma City	1.316%	1,579	40 (1 ↑)	1.316%	15,790	42 (1 ↑)	1.316%	394,739	43 (1 ↑)		
Oregon	Portland	2.291%	2,750	21 (1 ↑)	2.291%	27,496	22 (-)	2.291%	687,406	23 (-)		
Pennsylvania	Philadelphia	1.106%	1,327	47 (1 ↑)	1.873%	22,473	29 (1 ↑)	2.031%	609,345	28 (-)	X	X
Rhode Island	Providence	3.705%	4,446	3 (1 ↑)	3.705%	44,456	3 (1 ↑)	3.705%	1,111,388	3 (2 ↑)		
South Carolina	Columbia	3.217%	3,860	7 (1 ↑)	3.217%	38,602	8 (2 ↑)	3.217%	965,055	9 (1 ↑)		
South Dakota	Sioux Falls	1.599%	1,919	32 (2 ↑)	1.599%	19,187	34 (2 ↑)	1.599%	479,665	36 (1 ↑)		X
Tennessee	Memphis	2.838%	3,406	8 (1 ↑)	2.838%	34,061	11 (-)	2.838%	851,514	11 (-)		X
Texas	Houston	2.440%	2,928	18 (-)	2.440%	29,279	19 (1 ↓)	2.440%	731,978	20 (1 ↓)		
Utah	Salt Lake City	1.543%	1,852	33 (1 ↓)	1.543%	18,516	36 (1 ↓)	1.543%	462,911	37 (1 ↓)		
Vermont	Burlington	2.382%	2,858	20 (3 ↑)	2.382%	28,581	21 (2 ↑)	2.382%	714,532	22 (2 ↑)		X
Virginia	Virginia Beach	1.030%	1,236	49 (1 ↑)	1.030%	12,364	50 (-)	1.030%	309,111	50 (-)		
Washington	Seattle	0.876%	1,051	52 (1 ↓)	0.876%	10,508	52 (1 ↓)	0.876%	262,695	52 (1 ↓)		
West Virginia	Charleston	1.614%	1,937	31 (-)	1.614%	19,372	33 (-)	1.614%	484,298	35 (-)		
Wisconsin	Milwaukee	2.803%	3,364	11 (1 ↑)	2.863%	34,360	10 (2 ↑)	2.870%	860,938	10 (2 ↑)	X	
Wyoming	Cheyenne	0.635%	762	53 (-)	0.635%	7,617	53 (-)	0.635%	190,416	53 (-)		
AVERAGE		**2.053%**	**2,463**		**2.113%**	**25,357**		**2.147%**	**644,066**		**N = 10**	**N = 27**

* Illinois and New York have two cities included in this table, because the tax systems in Chicago and New York City are significantly different from the rest of the state. $100,000-valued property has an additional $20,000 worth of fixtures; $1 million-valued property has an additional $200,000 worth of fixtures; $25 million-valued property has an additional $5 million worth of fixtures.

Appendix Table 3b: Commercial Property Taxes for the Largest Fifty U.S. Cities

		Land and Building Value: $100,000			Land and Building Value: $1 Million			Land and Building Value: $25 Million			Tax Rate Varies with Property Value	Lower Tax Rate on Personal Property
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**		
Arizona	Mesa	1.495%	1,793	30 (-)	1.598%	19,176	31 (2 ↓)	1.873%	561,993	28 (2 ↓)	X	X
Arizona	Phoenix	2.114%	2,537	22 (2 ↑)	2.257%	27,086	20 (2 ↑)	2.638%	791,431	12 (2 ↑)	X	X
Arizona	Tucson	2.372%	2,847	18 (4 ↑)	2.511%	30,132	14 (6 ↑)	2.880%	864,025	5 (5 ↑)	X	X
California	Fresno	1.229%	1,475	39 (-)	1.229%	14,752	40 (-)	1.229%	368,809	40 (-)		
California	Long Beach	1.125%	1,350	45 (1 ↓)	1.125%	13,500	46 (1 ↓)	1.125%	337,499	46 (1 ↓)		
California	Los Angeles	1.192%	1,430	40 (1 ↑)	1.192%	14,304	41 (1 ↑)	1.192%	357,598	41 (1 ↑)		
California	Oakland	1.365%	1,638	35 (1 ↓)	1.365%	16,385	36 (1 ↓)	1.365%	409,620	37 (1 ↓)		
California	Sacramento	1.143%	1,371	44 (1 ↑)	1.143%	13,711	45 (1 ↑)	1.143%	342,780	45 (1 ↑)		
California	San Diego	1.175%	1,410	43 (1 ↓)	1.175%	14,095	44 (1 ↓)	1.175%	352,377	44 (1 ↓)		
California	San Francisco	1.183%	1,419	42 (1 ↑)	1.183%	14,191	43 (1 ↑)	1.183%	354,780	43 (1 ↑)		
California	San Jose	1.290%	1,548	37 (1 ↑)	1.290%	15,485	38 (1 ↑)	1.290%	387,120	39 (-)		
Colorado	Colorado Springs	1.688%	2,026	25 (3 ↑)	1.688%	20,260	28 (4 ↑)	1.688%	506,508	30 (3 ↑)		
Colorado	Denver	2.397%	2,876	17 (2 ↑)	2.397%	28,758	18 (1 ↑)	2.397%	718,957	19 (2 ↑)		
DC	Washington	1.266%	1,520	38 (2 ↓)	1.266%	15,197	39 (2 ↓)	1.941%	582,313	27 (2 ↑)	X	X
Florida	Jacksonville	1.471%	1,765	32 (1 ↓)	1.735%	20,822	27 (1 ↑)	1.771%	531,428	29 (1 ↑)	X	X
Florida	Miami	1.645%	1,974	27 (2 ↑)	1.957%	23,480	25 (1 ↑)	1.999%	599,814	26 (2 ↑)	X	X
Georgia	Atlanta	1.672%	2,006	26 (-)	1.672%	20,060	29 (1 ↑)	1.672%	501,494	31 (-)		
Illinois	Chicago	3.604%	4,325	3 (-)	3.604%	43,249	3 (-)	3.604%	1,081,225	3 (-)		X
Indiana	Indianapolis	2.836%	3,404	5 (1 ↓)	2.836%	34,035	7 (2 ↓)	2.836%	850,887	8 (3 ↓)		
Kansas	Wichita	2.831%	3,398	6 (3 ↑)	2.831%	33,977	8 (2 ↑)	2.831%	849,416	9 (2 ↑)		
Kentucky	Louisville	1.400%	1,680	34 (1 ↑)	1.400%	16,804	35 (1 ↑)	1.400%	420,105	36 (1 ↑)		
Louisiana	New Orleans*	2.106%	2,527	23 (NA)	2.106%	25,274	23 (NA)	2.106%	631,848	23 (NA)		
Maryland	Baltimore	2.662%	3,194	9 (9 ↑)	2.662%	31,941	10 (8 ↑)	2.662%	798,523	11 (9 ↑)		
Massachusetts	Boston	2.239%	2,686	20 (14 ↓)	2.239%	26,863	21 (13 ↓)	2.239%	671,580	21 (13 ↓)		X
Michigan	Detroit	4.125%	4,950	1 (-)	4.125%	49,502	1 (-)	4.125%	1,237,562	1 (-)		X
Minnesota	Minneapolis	2.576%	3,092	12 (2 ↓)	3.254%	39,047	4 (-)	3.369%	1,010,610	4 (-)	X	X
Missouri	Kansas City	2.751%	3,301	8 (-)	2.751%	33,013	9 (-)	2.751%	825,337	10 (1 ↓)		X
Nebraska	Omaha	2.099%	2,518	24 (1 ↑)	2.099%	25,183	24 (1 ↑)	2.099%	629,572	24 (1 ↑)		
Nevada	Las Vegas	1.123%	1,347	46 (-)	1.123%	13,473	47 (-)	1.123%	336,835	47 (-)		
New Mexico	Albuquerque	1.488%	1,785	31 (1 ↑)	1.488%	17,854	33 (-)	1.488%	446,348	34 (-)		
New York	New York City	3.956%	4,747	2 (-)	3.956%	47,472	2 (-)	3.956%	1,186,812	2 (-)		X
North Carolina	Charlotte	1.184%	1,421	41 (1 ↓)	1.184%	14,213	42 (1 ↓)	1.184%	355,313	42 (1 ↓)		
North Carolina	Raleigh	1.039%	1,247	48 (-)	1.039%	12,472	48 (-)	1.039%	311,789	48 (-)		X
Ohio	Cleveland	2.400%	2,880	16 (5 ↓)	2.400%	28,803	17 (6 ↓)	2.400%	720,080	18 (6 ↓)		X
Ohio	Columbus	1.622%	1,946	28 (5 ↓)	1.622%	19,464	30 (6 ↓)	1.622%	486,612	32 (8 ↓)		X
AVERAGE		**1.959%**	**2,351**		**2.009%**	**24,104**		**2.050%**	**614,945**		**N = 9**	**N = 19**

		Land and Building Value: $100,000			Land and Building Value: $1 Million			Land and Building Value: $25 Million			Tax Rate Varies with Property Value	Lower Tax Rate on Personal Property
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**		
Oklahoma	Oklahoma City	1.316%	1,579	36 (1 ↑)	1.316%	15,790	37 (1 ↑)	1.316%	394,739	38 (-)		
Oklahoma	Tulsa	1.457%	1,749	33 (-)	1.457%	17,486	34 (-)	1.457%	437,158	35 (-)		X
Oregon	Portland	2.291%	2,750	19 (1 ↑)	2.291%	27,496	19 (2 ↑)	2.291%	687,406	20 (2 ↑)	X	
Pennsylvania	Philadelphia	1.106%	1,327	47 (-)	1.873%	22,473	26 (1 ↑)	2.031%	609,345	25 (2 ↑)		X
Tennessee	Memphis	2.838%	3,406	4 (1 ↑)	2.838%	34,061	6 (-)	2.838%	851,514	7 (1 ↓)		X
Tennessee	Nashville	1.554%	1,865	29 (2 ↓)	1.554%	18,646	32 (1 ↓)	1.554%	466,142	33 (1 ↓)		X
Texas	Austin	2.212%	2,655	21 (-)	2.212%	26,547	22 (1 ↑)	2.212%	663,682	22 (1 ↑)		
Texas	Dallas	2.554%	3,065	13 (1 ↓)	2.554%	30,652	13 (1 ↓)	2.554%	766,288	15 (2 ↓)		
Texas	El Paso	2.408%	2,889	15 (2 ↑)	2.408%	28,892	16 (1 ↑)	2.408%	722,291	17 (2 ↑)		
Texas	Fort Worth	2.615%	3,139	10 (3 ↑)	2.615%	31,385	11 (2 ↑)	2.615%	784,634	13 (2 ↑)		
Texas	Houston	2.440%	2,928	14 (2 ↑)	2.440%	29,279	15 (1 ↑)	2.440%	731,978	16 (2 ↑)		
Texas	San Antonio	2.601%	3,121	11 (3 ↑)	2.601%	31,214	12 (2 ↑)	2.601%	780,342	14 (2 ↑)		
Virginia	Virginia Beach	1.030%	1,236	49 (-)	1.030%	12,364	49 (-)	1.030%	309,111	49 (-)		
Washington	Seattle	0.876%	1,051	50 (-)	0.876%	10,508	50 (-)	0.876%	262,695	50 (-)		
Wisconsin	Milwaukee	2.803%	3,364	7 (-)	2.863%	34,360	5 (2 ↑)	2.870%	860,938	6 (1 ↑)	X	
AVERAGE		**1.959%**	**2,351**		**2.009%**	**24,104**		**2.050%**	**614,945**		**N = 9**	**N = 19**

* New Orleans, LA replaces Arlington, TX in the set of fifty largest cities.
$100,000-valued property has an additional $20,000 worth of fixtures; $1 million-valued property has an additional $200,000 worth of fixtures; $25 million-valued property has an additional $5 million worth of fixtures.

Appendix Table 3c: Commercial Property Taxes for Selected Rural Municipalities

		Land and Building Value: $100,000			Land and Building Value: $1 Million			Land and Building Value: $25 Million			Tax Rate Varies with Property Value	Lower Tax Rate on Personal Property
State	**Municipality**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**		
Alabama	Monroeville	0.820%	984	44 (1 ↑)	0.820%	9,840	45 (-)	0.820%	246,000	45 (-)		
Alaska	Ketchican	0.803%	963	45 (1 ↓)	0.974%	11,682	43 (1 ↓)	0.997%	299,081	43 (2 ↓)	X	X
Arizona	Safford	1.169%	1,403	33 (5 ↓)	1.258%	15,091	32 (5 ↓)	1.493%	447,970	27 (3 ↓)	X	X
Arkansas	Pocahontas	0.722%	866	48 (-)	0.722%	8,663	48 (-)	0.722%	216,581	48 (-)		
California	Yreka	1.053%	1,264	38 (2 ↑)	1.053%	12,636	39 (2 ↑)	1.053%	315,900	39 (3 ↑)		
Colorado	Walsenburg	2.136%	2,563	11 (3 ↑)	2.136%	25,627	13 (2 ↑)	2.136%	640,668	13 (2 ↑)		
Connecticut	Litchfield	1.805%	2,166	24 (1 ↑)	1.805%	21,660	24 (1 ↑)	1.805%	541,489	24 (2 ↑)		
Delaware	Georgetown	0.497%	597	50 (-)	0.497%	5,970	50 (-)	0.497%	149,240	50 (-)		X
Florida	Moore Haven	1.914%	2,296	23 (2 ↓)	2.250%	27,002	12 (-)	2.296%	688,890	12 (1 ↓)	X	X
Georgia	Fitzgerald	1.726%	2,071	25 (1 ↓)	1.726%	20,707	25 (1 ↓)	1.726%	517,668	25 (-)		
Hawaii	Kauai	0.675%	810	49 (-)	0.675%	8,100	49 (-)	0.675%	202,500	49 (-)		X
Idaho	St. Anthony	1.004%	1,205	42 (12 ↓)	1.146%	13,749	36 (7 ↓)	1.281%	384,423	31 (3 ↓)	X	X
Illinois	Galena	1.979%	2,375	20 (1 ↓)	1.979%	23,750	22 (2 ↓)	1.979%	593,742	22 (2 ↓)		X
Indiana	North Vernon	2.875%	3,450	4 (-)	2.875%	34,500	4 (2 ↑)	2.875%	862,500	5 (1 ↑)		
Iowa	Hampton	1.944%	2,333	22 (16 ↓)	2.796%	33,549	6 (3 ↓)	2.980%	893,988	3 (-)	X	X
Kansas	Iola	4.547%	5,456	1 (-)	4.547%	54,562	1 (-)	4.547%	1,364,055	1 (-)		X
Kentucky	Morehead	1.089%	1,306	35 (1 ↑)	1.089%	13,062	37 (1 ↓)	1.089%	326,560	37 (1 ↓)		
Louisiana	Natchitoches	1.356%	1,627	29 (-)	1.356%	16,271	29 (1 ↑)	1.356%	406,787	30 (-)		
Maine	Rockland	2.120%	2,544	13 (3 ↑)	2.120%	25,440	15 (2 ↑)	2.120%	636,000	15 (2 ↑)		
Maryland	Denton	1.962%	2,355	21 (2 ↑)	1.962%	23,548	23 (-)	1.962%	588,700	23 (-)		
Massachusetts	Adams	2.073%	2,487	15 (6 ↓)	2.073%	24,872	17 (7 ↓)	2.073%	621,810	17 (7 ↓)		X
Michigan	Manistique	2.815%	3,378	5 (2 ↓)	2.815%	33,776	5 (-)	2.815%	844,412	6 (1 ↓)		X
Minnesota	Glencoe	2.966%	3,559	3 (4 ↑)	3.766%	45,188	2 (-)	3.901%	1,170,326	2 (-)	X	X
Mississippi	Philadelphia	2.104%	2,525	14 (1 ↓)	2.104%	25,250	16 (2 ↓)	2.104%	631,260	16 (2 ↓)		
Missouri	Boonville	2.057%	2,468	17 (2 ↓)	2.057%	24,685	19 (3 ↓)	2.057%	617,124	19 (3 ↓)		
Montana	Glasgow	1.086%	1,303	36 (6 ↑)	1.186%	14,227	34 (6 ↑)	1.281%	384,414	32 (6 ↑)	X	X
Nebraska	Sidney	2.125%	2,551	12 (-)	2.125%	25,505	14 (1 ↓)	2.125%	637,635	14 (1 ↓)		
Nevada	Fallon	1.281%	1,537	30 (1 ↑)	1.281%	15,372	30 (1 ↑)	1.281%	384,300	33 (2 ↓)		
New Hampshire	Lancaster	2.341%	2,809	9 (8 ↑)	2.341%	28,095	10 (8 ↑)	2.341%	702,370	10 (8 ↑)		X
New Jersey	Maurice River Twp	2.052%	2,463	18 (-)	2.052%	24,629	20 (1 ↓)	2.052%	615,718	20 (1 ↓)		X
New Mexico	Santa Rosa	1.054%	1,265	37 (1 ↑)	1.054%	12,653	38 (-)	1.054%	316,336	38 (1 ↑)		
New York	Warsaw	2.975%	3,570	2 (-)	2.975%	35,700	3 (1 ↑)	2.975%	892,508	4 (-)		X
North Carolina	Edenton	1.050%	1,261	39 (-)	1.050%	12,605	40 (1 ↓)	1.050%	315,129	40 (-)		
North Dakota	Devils Lake	1.046%	1,255	40 (5 ↓)	1.046%	12,550	41 (6 ↓)	1.046%	313,750	41 (6 ↓)		X
Ohio	Bryan	1.398%	1,677	27 (1 ↓)	1.398%	16,770	27 (1 ↓)	1.398%	419,255	28 (1 ↓)		X
AVERAGE		**1.699%**	**2,039**		**1.750%**	**20,999**		**1.767%**	**530,140**		**N = 8**	**N = 24**

		Land and Building Value: $100,000			Land and Building Value: $1 Million			Land and Building Value: $25 Million			Tax Rate Varies with Property Value	Lower Tax Rate on Personal Property
State	**Municipality**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**		
Oklahoma	Mangum	0.920%	1,104	43 (-)	0.920%	11,036	44 (-)	0.920%	275,888	44 (-)		
Oregon	Tillamook	1.166%	1,400	34 (3 ↑)	1.166%	13,996	35 (2 ↑)	1.166%	349,910	36 (1 ↑)		
Pennsylvania	Ridgway	2.524%	3,029	8 (3 ↑)	2.524%	30,288	9 (2 ↑)	2.524%	757,197	9 (3 ↑)		X
Rhode Island	Hopkinton	2.065%	2,478	16 (6 ↑)	2.065%	24,782	18 (4 ↑)	2.065%	619,552	18 (4 ↑)		X
South Carolina	Mullins	2.765%	3,318	6 (1 ↓)	2.765%	33,179	7 (-)	2.765%	829,470	7 (-)		
South Dakota	Madison	1.673%	2,007	26 (1 ↑)	1.673%	20,070	26 (2 ↑)	1.673%	501,760	26 (3 ↑)		X
Tennessee	Savannah	1.007%	1,209	41 (-)	1.007%	12,085	42 (1 ↑)	1.007%	302,130	42 (1 ↑)		X
Texas	Fort Stockton	2.556%	3,067	7 (1 ↑)	2.556%	30,673	8 (-)	2.556%	766,830	8 (-)		
Utah	Richfield	1.261%	1,513	31 (2 ↑)	1.261%	15,130	31 (2 ↑)	1.261%	378,240	34 (1 ↓)		
Vermont	Hartford	2.004%	2,405	19 (1 ↑)	2.004%	24,053	21 (-)	2.004%	601,331	21 (-)		X
Virginia	Wise	0.748%	898	47 (1 ↓)	0.748%	8,980	47 (1 ↓)	0.748%	224,500	47 (1 ↓)		
Washington	Okanogan	1.249%	1,498	32 (2 ↑)	1.249%	14,985	33 (1 ↑)	1.249%	374,620	35 (1 ↓)		
West Virginia	Elkins	1.374%	1,649	28 (4 ↑)	1.374%	16,492	28 (4 ↑)	1.374%	412,292	29 (3 ↑)		X
Wisconsin	Rice Lake	2.250%	2,700	10 (-)	2.300%	27,604	11 (2 ↓)	2.306%	691,706	11 (2 ↓)	X	
Wyoming	Worland	0.775%	930	46 (1 ↑)	0.775%	9,300	46 (1 ↑)	0.775%	232,510	46 (1 ↑)		
AVERAGE		**1.699%**	**2,039**		**1.750%**	**20,999**		**1.767%**	**530,140**		**N = 8**	**N = 24**

$100,000-valued property has an additional $20,000 worth of fixtures; $1 million-valued property has an additional $200,000 worth of fixtures; $25 million-valued property has an additional $5 million worth of fixtures.

Appendix Table 4a: Industrial Property Taxes for Largest City in Each State (Personal Property = 50% of Total Parcel Value)

		Land and Building Value: $100,000			Land and Building Value: $1 Million			Land and Building Value: $25 Million			Tax Rate Varies with Property Value
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	
Alabama	Birmingham	1.160%	2,320	37 (-)	1.160%	23,200	39 (1 ↑)	1.160%	580,000	41 (1 ↓)	
Alaska	Anchorage	1.270%	2,541	30 (-)	1.403%	28,052	30 (1 ↓)	1.417%	708,356	31 (1 ↓)	X
Arizona	Phoenix	1.268%	2,537	31 (-)	2.002%	40,045	13 (-)	2.231%	1,115,416	8 (2 ↑)	X
Arkansas	Little Rock	1.422%	2,845	25 (2 ↑)	1.422%	28,447	27 (4 ↑)	1.422%	711,165	29 (2 ↑)	
California	Los Angeles	0.954%	1,907	41 (1 ↓)	0.954%	19,072	44 (1 ↓)	0.954%	476,798	45 (2 ↓)	
Colorado	Denver	1.920%	3,839	14 (2 ↓)	1.920%	38,393	16 (1 ↓)	1.920%	959,814	17 (2 ↓)	
Connecticut	Bridgeport	2.007%	4,013	12 (2 ↑)	2.007%	40,130	12 (5 ↑)	2.007%	1,003,257	14 (3 ↑)	
DC	Washington	0.760%	1,520	45 (1 ↓)	1.397%	27,947	31 (1 ↓)	1.845%	922,313	18 (-)	X
Delaware	Wilmington	0.625%	1,251	50 (1 ↑)	0.625%	12,510	51 (-)	0.625%	312,739	51 (-)	
Florida	Jacksonville	1.200%	2,400	35 (2 ↓)	1.404%	28,077	29 (1 ↓)	1.426%	712,803	28 (-)	X
Georgia	Atlanta	1.525%	3,049	23 (5 ↓)	1.525%	30,492	25 (5 ↓)	1.525%	762,294	26 (5 ↓)	
Hawaii	Honolulu	0.597%	1,194	52 (-)	0.597%	11,937	52 (-)	0.597%	298,437	52 (-)	
Idaho	Boise	0.844%	1,688	43 (-)	1.266%	25,311	34 (-)	1.347%	673,271	33 (1 ↑)	X
Illinois	Aurora*	2.056%	4,112	11 (-)	2.056%	41,124	11 (3 ↑)	2.056%	1,028,106	12 (2 ↑)	
Illinois	Chicago	2.158%	4,316	9 (1 ↑)	2.158%	43,156	9 (3 ↑)	2.158%	1,078,906	10 (3 ↑)	
Indiana	Indianapolis	2.274%	4,547	7 (2 ↓)	2.274%	45,474	7 (1 ↓)	2.274%	1,136,853	7 (1 ↓)	
Iowa	Des Moines	1.365%	2,731	27 (11 ↓)	1.876%	37,526	17 (7 ↓)	1.987%	993,433	15 (7 ↓)	X
Kansas	Wichita	1.549%	3,098	20 (5 ↑)	1.549%	30,980	24 (2 ↑)	1.549%	774,511	25 (2 ↑)	
Kentucky	Louisville	0.793%	1,586	44 (1 ↑)	0.793%	15,862	47 (1 ↓)	0.793%	396,555	47 (-)	
Louisiana	New Orleans	2.156%	4,311	10 (2 ↓)	2.156%	43,114	10 (2 ↓)	2.156%	1,077,858	11 (2 ↓)	
Maine	Portland	1.135%	2,269	38 (-)	1.135%	22,693	40 (1 ↑)	1.135%	567,325	42 (1 ↓)	
Maryland	Baltimore	1.317%	2,635	29 (7 ↑)	1.317%	26,349	33 (5 ↑)	1.317%	658,726	34 (5 ↑)	
Massachusetts	Boston	1.358%	2,716	28 (7 ↓)	1.358%	27,158	32 (9 ↓)	1.358%	678,960	32 (8 ↓)	
Michigan	Detroit	2.445%	4,890	5 (2 ↑)	3.230%	64,601	2 (-)	3.230%	1,615,026	2 (-)	X
Minnesota	Minneapolis	1.546%	3,092	21 (2 ↓)	1.952%	39,047	14 (3 ↓)	2.021%	1,010,610	13 (1 ↓)	X
Mississippi	Jackson	2.685%	5,371	2 (1 ↑)	2.685%	53,709	3 (1 ↑)	2.685%	1,342,725	3 (1 ↑)	
Missouri	Kansas City	2.183%	4,366	8 (1 ↑)	2.183%	43,663	8 (1 ↑)	2.183%	1,091,580	9 (2 ↑)	
Montana	Billings	0.606%	1,211	51 (3 ↓)	0.851%	17,023	46 (2 ↑)	1.191%	595,464	39 (7 ↑)	X
Nebraska	Omaha	1.705%	3,410	16 (1 ↑)	1.705%	34,104	19 (-)	1.705%	852,611	20 (-)	
Nevada	Las Vegas	0.903%	1,806	42 (-)	0.903%	18,063	45 (-)	0.903%	451,572	46 (1 ↓)	
New Hampshire	Manchester	1.184%	2,367	36 (1 ↓)	1.184%	23,674	38 (1 ↓)	1.184%	591,860	40 (2 ↓)	
New Jersey	Newark	1.523%	3,046	24 (2 ↑)	1.523%	30,456	26 (1 ↑)	1.523%	761,401	27 (2 ↑)	
New Mexico	Albuquerque	1.209%	2,419	34 (-)	1.209%	24,186	37 (1 ↓)	1.209%	604,641	38 (2 ↓)	
New York	Buffalo*	1.571%	3,141	19 (1 ↑)	1.571%	31,413	23 (2 ↓)	1.571%	785,315	24 (2 ↓)	
New York	New York City	2.374%	4,747	6 (-)	2.374%	47,472	6 (1 ↑)	2.374%	1,186,812	6 (1 ↑)	
AVERAGE		**1.482%**	**2,965**		**1.569%**	**31,375**		**1.595%**	**797,694**		**N = 11**

		Land and Building Value: $100,000			Land and Building Value: $1 Million			Land and Building Value: $25 Million			Tax Rate Varies with Property Value
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	
North Carolina	Charlotte	0.970%	1,939	39 (-)	0.970%	19,390	42 (-)	0.970%	484,753	43 (1 ↓)	
North Dakota	Fargo	0.681%	1,363	47 (-)	0.681%	13,626	49 (-)	0.681%	340,643	49 (-)	
Ohio	Columbus	1.234%	2,468	33 (5 ↓)	1.234%	24,684	36 (4 ↓)	1.234%	617,102	36 (4 ↓)	
Oklahoma	Oklahoma City	1.419%	2,838	26 (3 ↑)	1.419%	28,385	28 (5 ↑)	1.419%	709,614	30 (3 ↑)	
Oregon	Portland	1.833%	3,666	15 (-)	1.833%	36,662	18 (-)	1.833%	916,541	19 (-)	
Pennsylvania	Philadelphia	0.663%	1,327	49 (1 ↑)	1.124%	22,473	41 (2 ↓)	1.219%	609,345	37 (-)	X
Rhode Island	Providence	1.944%	3,888	13 (-)	1.944%	38,876	15 (1 ↑)	1.944%	971,888	16 (-)	
South Carolina	Columbia	4.158%	8,316	1 (-)	4.158%	83,162	1 (-)	4.158%	2,079,040	1 (-)	
South Dakota	Sioux Falls	0.959%	1,919	40 (1 ↑)	0.959%	19,187	43 (1 ↑)	0.959%	479,665	44 (-)	
Tennessee	Memphis	2.635%	5,271	3 (1 ↓)	2.635%	52,709	4 (1 ↓)	2.635%	1,317,714	4 (1 ↓)	
Texas	Houston	2.535%	5,070	4 (-)	2.535%	50,703	5 (-)	2.535%	1,267,582	5 (-)	
Utah	Salt Lake City	1.242%	2,485	32 (-)	1.242%	24,847	35 (-)	1.242%	621,171	35 (-)	
Vermont	Burlington	1.578%	3,156	18 (6 ↑)	1.578%	31,555	21 (4 ↑)	1.578%	788,885	23 (3 ↑)	
Virginia	Virginia Beach	0.538%	1,076	53 (-)	0.538%	10,764	53 (-)	0.538%	269,111	53 (-)	
Washington	Seattle	0.708%	1,416	46 (-)	0.708%	14,162	48 (1 ↓)	0.708%	354,048	48 (-)	
West Virginia	Charleston	1.623%	3,247	17 (5 ↑)	1.623%	32,468	20 (4 ↑)	1.623%	811,711	21 (4 ↑)	
Wisconsin	Milwaukee	1.538%	3,077	22 (1 ↑)	1.575%	31,490	22 (-)	1.578%	789,186	22 (1 ↑)	X
Wyoming	Cheyenne	0.665%	1,329	48 (1 ↑)	0.665%	13,290	50 (-)	0.665%	332,258	50 (-)	
AVERAGE		**1.482%**	**2,965**		**1.569%**	**31,375**		**1.595%**	**797,694**		**N = 11**

* Illinois and New York have two cities included in this table, because the tax systems in Chicago and New York City are significantly different from the rest of the state.
$100,000-valued property has an additional $50,000 worth of machinery and equipment, an additional $40,000 worth of inventories, and an additional $10,000 worth of fixtures.
$1 million-valued property has an additional $500,000 worth of machinery and equipment, an additional $400,000 worth of inventories, and an additional $100,000 worth of fixtures.
$25 million-valued property has an additional $12.5 million worth of machinery and equipment, an additional $10 million worth of inventories, and an additional $2.5 million worth of fixtures.

Appendix Table 4b: Industrial Property Taxes for Largest City in Each State (Personal Property = 60% of Total Parcel Value)

		Land and Building Value: $100,000			Land and Building Value: $1 Million			Land and Building Value: $25 Million			Tax Rate Varies with Property Value
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	
Alabama	Birmingham	1.102%	2,755	32 (3 ↑)	1.102%	27,550	36 (2 ↑)	1.102%	688,750	37 (1 ↑)	
Alaska	Anchorage	1.310%	3,276	22 (2 ↑)	1.416%	35,402	25 (2 ↓)	1.427%	892,106	24 (1 ↓)	X
Arizona	Phoenix	1.015%	2,537	35 (1 ↑)	1.991%	49,765	9 (-)	2.173%	1,358,405	6 (2 ↑)	X
Arkansas	Little Rock	1.418%	3,546	20 (1 ↑)	1.418%	35,457	24 (1 ↑)	1.418%	886,415	25 (-)	
California	Los Angeles	0.906%	2,265	40 (1 ↓)	0.906%	22,648	42 (1 ↓)	0.906%	566,197	44 (2 ↓)	
Colorado	Denver	1.825%	4,562	10 (-)	1.825%	45,618	11 (-)	1.825%	1,140,456	12 (-)	
Connecticut	Bridgeport	1.664%	4,161	14 (3 ↑)	1.664%	41,607	15 (5 ↑)	1.664%	1,040,181	16 (5 ↑)	
DC	Washington	0.608%	1,520	47 (-)	1.526%	38,147	20 (2 ↑)	1.884%	1,177,313	11 (1 ↓)	X
Delaware	Wilmington	0.500%	1,251	50 (1 ↑)	0.500%	12,510	51 (-)	0.500%	312,739	51 (-)	
Florida	Jacksonville	1.177%	2,944	29 (-)	1.341%	33,518	27 (1 ↓)	1.358%	848,834	27 (1 ↓)	X
Georgia	Atlanta	1.498%	3,744	18 (6 ↓)	1.498%	37,444	22 (7 ↓)	1.498%	936,104	22 (6 ↓)	
Hawaii	Honolulu	0.477%	1,194	52 (-)	0.477%	11,937	52 (-)	0.477%	298,437	52 (-)	
Idaho	Boise	0.675%	1,688	45 (-)	1.215%	30,372	32 (-)	1.280%	799,802	30 (1 ↑)	X
Illinois	Aurora*	1.645%	4,112	15 (3 ↑)	1.645%	41,124	16 (5 ↑)	1.645%	1,028,106	17 (5 ↑)	
Illinois	Chicago	1.726%	4,316	12 (2 ↑)	1.726%	43,156	13 (4 ↑)	1.726%	1,078,906	14 (4 ↑)	
Indiana	Indianapolis	2.169%	5,424	6 (1 ↓)	2.169%	54,237	7 (1 ↓)	2.169%	1,355,928	8 (2 ↓)	
Iowa	Des Moines	1.092%	2,731	33 (13 ↓)	1.501%	37,526	21 (8 ↓)	1.589%	993,433	21 (8 ↓)	X
Kansas	Wichita	1.299%	3,248	23 (5 ↑)	1.299%	32,479	29 (2 ↑)	1.299%	811,963	29 (3 ↑)	
Kentucky	Louisville	0.691%	1,728	43 (1 ↑)	0.691%	17,283	47 (-)	0.691%	432,080	47 (-)	
Louisiana	New Orleans	2.171%	5,426	5 (1 ↑)	2.171%	54,265	6 (1 ↑)	2.171%	1,356,614	7 (-)	
Maine	Portland	0.949%	2,372	37 (3 ↑)	0.949%	23,725	39 (3 ↑)	0.949%	593,113	41 (2 ↑)	
Maryland	Baltimore	1.166%	2,914	30 (4 ↑)	1.166%	29,145	34 (3 ↑)	1.166%	728,625	35 (2 ↑)	
Massachusetts	Boston	1.086%	2,716	34 (11 ↓)	1.086%	27,158	37 (8 ↓)	1.086%	678,960	38 (9 ↓)	
Michigan	Detroit	2.019%	5,047	8 (-)	2.961%	74,019	2 (-)	2.961%	1,850,487	2 (-)	X
Minnesota	Minneapolis	1.237%	3,092	26 (-)	1.562%	39,047	19 (5 ↓)	1.617%	1,010,610	20 (5 ↓)	X
Mississippi	Jackson	2.685%	6,714	2 (-)	2.685%	67,136	3 (-)	2.685%	1,678,406	3 (-)	
Missouri	Kansas City	2.066%	5,165	7 (-)	2.066%	51,650	8 (-)	2.066%	1,291,262	9 (-)	
Montana	Billings	0.485%	1,211	51 (2 ↓)	0.799%	19,969	45 (4 ↑)	1.188%	742,763	33 (15 ↑)	X
Nebraska	Omaha	1.632%	4,080	16 (1 ↓)	1.632%	40,796	17 (1 ↑)	1.632%	1,019,891	18 (1 ↑)	
Nevada	Las Vegas	0.860%	2,150	41 (-)	0.860%	21,505	44 (-)	0.860%	537,625	45 (1 ↓)	
New Hampshire	Manchester	0.947%	2,367	38 (1 ↓)	0.947%	23,674	40 (1 ↓)	0.947%	591,860	42 (2 ↓)	
New Jersey	Newark	1.218%	3,046	27 (5 ↑)	1.218%	30,456	31 (4 ↑)	1.218%	761,401	32 (3 ↑)	
New Mexico	Albuquerque	1.157%	2,893	31 (-)	1.157%	28,934	35 (1 ↓)	1.157%	723,361	36 (2 ↓)	
New York	Buffalo*	1.257%	3,141	25 (2 ↑)	1.257%	31,413	30 (-)	1.257%	785,315	31 (1 ↓)	
New York	New York City	1.899%	4,747	9 (-)	1.899%	47,472	10 (-)	1.899%	1,186,812	10 (1 ↑)	
AVERAGE		**1.331%**	**3,328**		**1.427%**	**35,683**		**1.451%**	**906,763**		**N = 11**

		Land and Building Value: $100,000			Land and Building Value: $1 Million			Land and Building Value: $25 Million			Tax Rate Varies with Property Value
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	
North Carolina	Charlotte	0.931%	2,327	39 (1 ↓)	0.931%	23,273	41 (1 ↓)	0.931%	581,833	43 (2 ↓)	
North Dakota	Fargo	0.545%	1,363	48 (-)	0.545%	13,626	50 (-)	0.545%	340,643	50 (-)	
Ohio	Columbus	0.987%	2,468	36 (3 ↓)	0.987%	24,684	38 (2 ↓)	0.987%	617,102	39 (3 ↓)	
Oklahoma	Oklahoma City	1.450%	3,626	19 (-)	1.450%	36,256	23 (1 ↑)	1.450%	906,411	23 (1 ↑)	
Oregon	Portland	1.741%	4,354	11 (-)	1.741%	43,536	12 (-)	1.741%	1,088,393	13 (1 ↑)	
Pennsylvania	Philadelphia	0.531%	1,327	49 (1 ↑)	0.899%	22,473	43 (-)	0.975%	609,345	40 (1 ↓)	X
Rhode Island	Providence	1.667%	4,167	13 (-)	1.667%	41,666	14 (2 ↑)	1.667%	1,041,638	15 (2 ↑)	
South Carolina	Columbia	3.950%	9,875	1 (-)	3.950%	98,754	1 (-)	3.950%	2,468,860	1 (-)	
South Dakota	Sioux Falls	0.767%	1,919	42 (1 ↑)	0.767%	19,187	46 (-)	0.767%	479,665	46 (-)	
Tennessee	Memphis	2.575%	6,436	3 (-)	2.575%	64,364	4 (-)	2.575%	1,609,089	4 (-)	
Texas	Houston	2.535%	6,338	4 (-)	2.535%	63,379	5 (-)	2.535%	1,584,478	5 (-)	
Utah	Salt Lake City	1.184%	2,959	28 (2 ↑)	1.184%	29,595	33 (-)	1.184%	739,866	34 (1 ↓)	
Vermont	Burlington	1.376%	3,441	21 (1 ↑)	1.376%	34,409	26 (1 ↑)	1.376%	860,219	26 (1 ↑)	
Virginia	Virginia Beach	0.463%	1,156	53 (-)	0.463%	11,564	53 (-)	0.463%	289,111	53 (-)	
Washington	Seattle	0.676%	1,690	44 (2 ↓)	0.676%	16,902	48 (3 ↓)	0.676%	422,562	48 (3 ↓)	
West Virginia	Charleston	1.626%	4,065	17 (1 ↓)	1.626%	40,654	18 (1 ↑)	1.626%	1,016,344	19 (1 ↑)	
Wisconsin	Milwaukee	1.288%	3,220	24 (1 ↑)	1.317%	32,925	28 (-)	1.320%	825,062	28 (-)	X
Wyoming	Cheyenne	0.631%	1,578	46 (-)	0.631%	15,782	49 (1 ↓)	0.631%	394,556	49 (-)	
AVERAGE		**1.331%**	**3,328**		**1.427%**	**35,683**		**1.451%**	**906,763**		**N = 11**

* Illinois and New York have two cities included in this table, because the tax systems in Chicago and New York City are significantly different from the rest of the state.
$100,000-valued property has an additional $75,000 worth of machinery and equipment, an additional $60,000 worth of inventories, and an additional $15,000 worth of fixtures.
$1 million-valued property has an additional $750,000 worth of machinery and equipment, an additional $600,000 worth of inventories, and an additional $150,000 worth of fixtures.
$25 million-valued property has an additional $18.75 million worth of machinery and equipment, an additional $15 million worth of inventories, and an additional $3.75 million worth of fixtures.

Appendix Table 4c: Industrial Property Taxes for the Largest Fifty U.S. Cities (Personal Property = 50% of Total Parcel Value)

		Land and Building Value: $100,000			Land and Building Value: $1 Million			Land and Building Value: $25 Million			Tax Rate Varies with Property Value
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	
Arizona	Mesa	0.897%	1,793	44 (8 ↓)	1.427%	28,542	26 (-)	1.592%	796,127	23 (3 ↓)	X
Arizona	Phoenix	1.268%	2,537	30 (-)	2.002%	40,045	15 (1 ↑)	2.231%	1,115,416	12 (1 ↑)	X
Arizona	Tucson	1.423%	2,847	23 (6 ↑)	2.134%	42,687	14 (1 ↓)	2.356%	1,177,896	9 (3 ↑)	X
California	Fresno	0.983%	1,967	36 (2 ↑)	0.983%	19,670	39 (1 ↑)	0.983%	491,745	39 (1 ↑)	
California	Long Beach	0.900%	1,800	43 (1 ↓)	0.900%	18,000	46 (2 ↓)	0.900%	449,999	46 (2 ↓)	
California	Los Angeles	0.954%	1,907	38 (1 ↑)	0.954%	19,072	41 (-)	0.954%	476,798	41 (-)	
California	Oakland	1.092%	2,185	34 (-)	1.092%	21,846	37 (1 ↓)	1.092%	546,160	37 (-)	
California	Sacramento	0.914%	1,828	41 (2 ↑)	0.914%	18,282	44 (1 ↑)	0.914%	457,040	44 (1 ↑)	
California	San Diego	0.940%	1,879	40 (-)	0.940%	18,793	43 (1 ↓)	0.940%	469,836	43 (1 ↓)	
California	San Francisco	0.946%	1,892	39 (2 ↑)	0.946%	18,922	42 (1 ↑)	0.946%	473,040	42 (1 ↑)	
California	San Jose	1.032%	2,065	35 (-)	1.032%	20,646	38 (-)	1.032%	516,160	38 (-)	
Colorado	Colorado Springs	1.362%	2,724	26 (2 ↑)	1.362%	27,241	31 (2 ↑)	1.362%	681,016	31 (2 ↑)	
Colorado	Denver	1.920%	3,839	14 (-)	1.920%	38,393	17 (-)	1.920%	959,814	17 (-)	
DC	Washington	0.760%	1,520	47 (1 ↓)	1.397%	27,947	30 (1 ↓)	1.845%	922,313	18 (-)	X
Florida	Jacksonville	1.200%	2,400	33 (2 ↓)	1.404%	28,077	29 (1 ↓)	1.426%	712,803	28 (1 ↑)	X
Florida	Miami	1.361%	2,722	27 (-)	1.601%	32,019	21 (1 ↑)	1.627%	813,271	22 (1 ↑)	X
Georgia	Atlanta	1.525%	3,049	21 (4 ↓)	1.525%	30,492	24 (4 ↓)	1.525%	762,294	26 (4 ↓)	
Illinois	Chicago	2.158%	4,316	12 (1 ↑)	2.158%	43,156	12 (3 ↑)	2.158%	1,078,906	14 (2 ↑)	
Indiana	Indianapolis	2.274%	4,547	10 (2 ↓)	2.274%	45,474	10 (1 ↓)	2.274%	1,136,853	11 (2 ↓)	
Kansas	Wichita	1.549%	3,098	18 (5 ↑)	1.549%	30,980	23 (4 ↑)	1.549%	774,511	25 (3 ↑)	
Kentucky	Louisville	0.793%	1,586	46 (1 ↑)	0.793%	15,862	48 (-)	0.793%	396,555	48 (-)	
Louisiana	New Orleans*	2.156%	4,311	13 (NA)	2.156%	43,114	13 (NA)	2.156%	1,077,858	15 (NA)	
Maryland	Baltimore	1.317%	2,635	29 (4 ↑)	1.317%	26,349	33 (2 ↑)	1.317%	658,726	33 (3 ↑)	
Massachusetts	Boston	1.358%	2,716	28 (8 ↓)	1.358%	27,158	32 (8 ↓)	1.358%	678,960	32 (6 ↓)	
Michigan	Detroit	2.445%	4,890	7 (4 ↑)	3.230%	64,601	1 (-)	3.230%	1,615,026	1 (-)	X
Minnesota	Minneapolis	1.546%	3,092	19 (1 ↓)	1.952%	39,047	16 (2 ↓)	2.021%	1,010,610	16 (1 ↓)	X
Missouri	Kansas City	2.183%	4,366	11 (1 ↑)	2.183%	43,663	11 (1 ↑)	2.183%	1,091,580	13 (1 ↑)	
Nebraska	Omaha	1.705%	3,410	17 (1 ↓)	1.705%	34,104	20 (1 ↓)	1.705%	852,611	21 (-)	
Nevada	Las Vegas	0.903%	1,806	42 (2 ↑)	0.903%	18,063	45 (1 ↑)	0.903%	451,572	45 (1 ↑)	
New Mexico	Albuquerque	1.209%	2,419	32 (-)	1.209%	24,186	35 (1 ↓)	1.209%	604,641	36 (2 ↓)	
New York	New York City	2.374%	4,747	8 (1 ↑)	2.374%	47,472	8 (2 ↑)	2.374%	1,186,812	8 (2 ↑)	
North Carolina	Charlotte	0.970%	1,939	37 (-)	0.970%	19,390	40 (1 ↓)	0.970%	484,753	40 (1 ↓)	
North Carolina	Raleigh	0.831%	1,661	45 (-)	0.831%	16,614	47 (-)	0.831%	415,339	47 (-)	
Ohio	Cleveland	1.773%	3,546	16 (3 ↑)	1.773%	35,464	19 (2 ↑)	1.773%	886,604	20 (4 ↑)	
Ohio	Columbus	1.234%	2,468	31 (7 ↓)	1.234%	24,684	34 (4 ↓)	1.234%	617,102	34 (4 ↓)	
AVERAGE		**1.527%**	**3,055**		**1.622%**	**32,445**		**1.648%**	**823,906**		**N = 10**

		Land and Building Value: $100,000			Land and Building Value: $1 Million			Land and Building Value: $25 Million			Tax Rate Varies with Property Value
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	
Oklahoma	Oklahoma City	1.419%	2,838	24 (1 ↑)	1.419%	28,385	27 (4 ↑)	1.419%	709,614	29 (2 ↑)	
Oklahoma	Tulsa	1.412%	2,825	25 (1 ↑)	1.412%	28,247	28 (4 ↑)	1.412%	706,178	30 (2 ↑)	
Oregon	Portland	1.833%	3,666	15 (-)	1.833%	36,662	18 (-)	1.833%	916,541	19 (-)	
Pennsylvania	Philadelphia	0.663%	1,327	49 (-)	1.124%	22,473	36 (1 ↑)	1.219%	609,345	35 (-)	X
Tennessee	Memphis	2.635%	5,271	5 (1 ↓)	2.635%	52,709	6 (1 ↓)	2.635%	1,317,714	6 (1 ↓)	
Tennessee	Nashville	1.474%	2,948	22 (1 ↓)	1.474%	29,484	25 (-)	1.474%	737,102	27 (-)	
Texas	Austin	2.296%	4,592	9 (1 ↑)	2.296%	45,922	9 (2 ↑)	2.296%	1,148,041	10 (1 ↑)	
Texas	Dallas	2.742%	5,484	3 (1 ↓)	2.742%	54,837	4 (1 ↓)	2.742%	1,370,918	4 (1 ↓)	
Texas	El Paso	2.772%	5,544	2 (1 ↑)	2.772%	55,438	3 (1 ↑)	2.772%	1,385,956	3 (1 ↑)	
Texas	Fort Worth	2.848%	5,697	1 (-)	2.848%	56,968	2 (-)	2.848%	1,424,199	2 (-)	
Texas	Houston	2.535%	5,070	6 (1 ↑)	2.535%	50,703	7 (1 ↑)	2.535%	1,267,582	7 (1 ↑)	
Texas	San Antonio	2.698%	5,396	4 (1 ↑)	2.698%	53,961	5 (1 ↑)	2.698%	1,349,023	5 (1 ↑)	
Virginia	Virginia Beach	0.538%	1,076	50 (-)	0.538%	10,764	50 (-)	0.538%	269,111	50 (-)	
Washington	Seattle	0.708%	1,416	48 (-)	0.708%	14,162	49 (-)	0.708%	354,048	49 (-)	
Wisconsin	Milwaukee	1.538%	3,077	20 (2 ↑)	1.575%	31,490	22 (1 ↑)	1.578%	789,186	24 (1 ↑)	X
AVERAGE		**1.527%**	**3,055**		**1.622%**	**32,445**		**1.648%**	**823,906**		**N = 10**

* New Orleans, LA replaces Arlington, TX in the set of fifty largest cities.
$100,000-valued property has an additional $50,000 worth of machinery and equipment, an additional $40,000 worth of inventories, and an additional $10,000 worth of fixtures.
$1 million-valued property has an additional $500,000 worth of machinery and equipment, an additional $400,000 worth of inventories, and an additional $100,000 worth of fixtures.
$25 million-valued property has an additional $12.5 million worth of machinery and equipment, an additional $10 million worth of inventories, and an additional $2.5 million worth of fixtures.

Appendix Table 4d: Industrial Property Taxes for the Largest Fifty U.S. Cities (Personal Property = 60% of Total Parcel Value)

		Land and Building Value: $100,000			Land and Building Value: $1 Million			Land and Building Value: $25 Million			Tax Rate Varies with Property Value
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	
Arizona	Mesa	0.717%	1,793	45 (1 ↓)	1.423%	35,566	25 (1 ↓)	1.555%	971,728	22 (3 ↓)	X
Arizona	Phoenix	1.015%	2,537	33 (1 ↑)	1.991%	49,765	13 (-)	2.173%	1,358,405	10 (2 ↑)	X
Arizona	Tucson	1.139%	2,847	30 (2 ↑)	2.084%	52,103	11 (1 ↑)	2.261%	1,413,299	9 (2 ↑)	X
California	Fresno	0.934%	2,336	36 (1 ↑)	0.934%	23,358	38 (1 ↑)	0.934%	583,947	39 (1 ↑)	
California	Long Beach	0.855%	2,137	43 (2 ↓)	0.855%	21,375	46 (2 ↓)	0.855%	534,374	46 (2 ↓)	
California	Los Angeles	0.906%	2,265	38 (-)	0.906%	22,648	40 (-)	0.906%	566,197	41 (-)	
California	Oakland	1.038%	2,594	32 (1 ↓)	1.038%	25,943	35 (-)	1.038%	648,565	35 (-)	
California	Sacramento	0.868%	2,171	41 (1 ↑)	0.868%	21,709	44 (1 ↑)	0.868%	542,735	44 (1 ↑)	
California	San Diego	0.893%	2,232	40 (1 ↓)	0.893%	22,317	43 (1 ↓)	0.893%	557,930	43 (1 ↓)	
California	San Francisco	0.899%	2,247	39 (1 ↑)	0.899%	22,469	42 (1 ↑)	0.899%	561,735	42 (1 ↑)	
California	San Jose	0.981%	2,452	35 (-)	0.981%	24,518	37 (-)	0.981%	612,940	37 (-)	
Colorado	Colorado Springs	1.299%	3,248	24 (-)	1.299%	32,476	31 (1 ↓)	1.299%	811,896	31 (1 ↓)	
Colorado	Denver	1.825%	4,562	13 (-)	1.825%	45,618	15 (-)	1.825%	1,140,456	16 (-)	
DC	Washington	0.608%	1,520	48 (-)	1.526%	38,147	21 (1 ↑)	1.884%	1,177,313	15 (1 ↓)	X
Florida	Jacksonville	1.177%	2,944	27 (1 ↑)	1.341%	33,518	28 (1 ↓)	1.358%	848,834	28 (2 ↓)	X
Florida	Miami	1.345%	3,362	22 (1 ↓)	1.537%	38,422	20 (1 ↑)	1.557%	973,364	21 (2 ↑)	X
Georgia	Atlanta	1.498%	3,744	17 (2 ↓)	1.498%	37,444	22 (4 ↓)	1.498%	936,104	23 (3 ↓)	
Illinois	Chicago	1.726%	4,316	15 (1 ↑)	1.726%	43,156	17 (2 ↑)	1.726%	1,078,906	18 (3 ↑)	
Indiana	Indianapolis	2.169%	5,424	9 (-)	2.169%	54,237	10 (-)	2.169%	1,355,928	12 (2 ↓)	
Kansas	Wichita	1.299%	3,248	23 (4 ↑)	1.299%	32,479	30 (2 ↑)	1.299%	811,963	30 (2 ↑)	
Kentucky	Louisville	0.691%	1,728	46 (1 ↑)	0.691%	17,283	48 (1 ↑)	0.691%	432,080	48 (1 ↑)	
Louisiana	New Orleans*	2.171%	5,426	8 (NA)	2.171%	54,265	9 (NA)	2.171%	1,356,614	11 (NA)	
Maryland	Baltimore	1.166%	2,914	28 (5 ↑)	1.166%	29,145	32 (4 ↑)	1.166%	728,625	32 (4 ↑)	
Massachusetts	Boston	1.086%	2,716	31 (9 ↓)	1.086%	27,158	34 (5 ↓)	1.086%	678,960	34 (5 ↓)	
Michigan	Detroit	2.019%	5,047	11 (-)	2.961%	74,019	1 (-)	2.961%	1,850,487	1 (-)	X
Minnesota	Minneapolis	1.237%	3,092	26 (1 ↓)	1.562%	39,047	19 (2 ↓)	1.617%	1,010,610	20 (2 ↓)	X
Missouri	Kansas City	2.066%	5,165	10 (-)	2.066%	51,650	12 (1 ↓)	2.066%	1,291,262	13 (-)	
Nebraska	Omaha	1.632%	4,080	16 (1 ↑)	1.632%	40,796	18 (2 ↑)	1.632%	1,019,891	19 (3 ↑)	
Nevada	Las Vegas	0.860%	2,150	42 (1 ↑)	0.860%	21,505	45 (1 ↑)	0.860%	537,625	45 (1 ↑)	
New Mexico	Albuquerque	1.157%	2,893	29 (-)	1.157%	28,934	33 (-)	1.157%	723,361	33 (-)	
New York	New York City	1.899%	4,747	12 (-)	1.899%	47,472	14 (-)	1.899%	1,186,812	14 (1 ↑)	
North Carolina	Charlotte	0.931%	2,327	37 (1 ↓)	0.931%	23,273	39 (1 ↓)	0.931%	581,833	40 (1 ↓)	
North Carolina	Raleigh	0.789%	1,972	44 (1 ↑)	0.789%	19,720	47 (-)	0.789%	493,002	47 (-)	
Ohio	Cleveland	1.419%	3,546	20 (6 ↑)	1.419%	35,464	26 (5 ↑)	1.419%	886,604	26 (5 ↑)	
Ohio	Columbus	0.987%	2,468	34 (4 ↓)	0.987%	24,684	36 (2 ↓)	0.987%	617,102	36 (2 ↓)	
AVERAGE		**1.415%**	**3,538**		**1.527%**	**38,164**		**1.547%**	**966,887**		**N = 10**

		Land and Building Value: $100,000			Land and Building Value: $1 Million			Land and Building Value: $25 Million			Tax Rate Varies with Property Value
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	
Oklahoma	Oklahoma City	1.450%	3,626	19 (-)	1.450%	36,256	24 (1 ↑)	1.450%	906,411	25 (-)	
Oklahoma	Tulsa	1.399%	3,497	21 (1 ↓)	1.399%	34,973	27 (1 ↓)	1.399%	874,315	27 (-)	
Oregon	Portland	1.741%	4,354	14 (-)	1.741%	43,536	16 (-)	1.741%	1,088,393	17 (-)	
Pennsylvania	Philadelphia	0.531%	1,327	49 (-)	0.899%	22,473	41 (-)	0.975%	609,345	38 (-)	X
Tennessee	Memphis	2.575%	6,436	5 (-)	2.575%	64,364	6 (-)	2.575%	1,609,089	6 (-)	
Tennessee	Nashville	1.450%	3,626	18 (-)	1.450%	36,258	23 (-)	1.450%	906,452	24 (-)	
Texas	Austin	2.296%	5,740	7 (1 ↑)	2.296%	57,402	8 (1 ↑)	2.296%	1,435,051	8 (1 ↑)	
Texas	Dallas	2.742%	6,855	3 (1 ↓)	2.742%	68,546	4 (1 ↓)	2.742%	1,713,647	4 (1 ↓)	
Texas	El Paso	2.772%	6,930	2 (1 ↑)	2.772%	69,298	3 (1 ↑)	2.772%	1,732,445	3 (1 ↑)	
Texas	Fort Worth	2.848%	7,121	1 (-)	2.848%	71,210	2 (-)	2.848%	1,780,248	2 (-)	
Texas	Houston	2.535%	6,338	6 (1 ↑)	2.535%	63,379	7 (1 ↑)	2.535%	1,584,478	7 (1 ↑)	
Texas	San Antonio	2.698%	6,745	4 (-)	2.698%	67,451	5 (-)	2.698%	1,686,278	5 (-)	
Virginia	Virginia Beach	0.463%	1,156	50 (-)	0.463%	11,564	50 (-)	0.463%	289,111	50 (-)	
Washington	Seattle	0.676%	1,690	47 (1 ↓)	0.676%	16,902	49 (1 ↓)	0.676%	422,562	49 (1 ↓)	
Wisconsin	Milwaukee	1.288%	3,220	25 (2 ↓)	1.317%	32,925	29 (1 ↓)	1.320%	825,062	29 (1 ↓)	X
AVERAGE		**1.415%**	**3,538**		**1.527%**	**38,164**		**1.547%**	**966,887**		**N = 10**

* New Orleans, LA replaces Arlington, TX in the set of fifty largest cities.
$100,000-valued property has an additional $75,000 worth of machinery and equipment, an additional $60,000 worth of inventories, and an additional $15,000 worth of fixtures.
$1 million-valued property has an additional $750,000 worth of machinery and equipment, an additional $600,000 worth of inventories, and an additional $150,000 worth of fixtures.
$25 million-valued property has an additional $18.75 million worth of machinery and equipment, an additional $15 million worth of inventories, and an additional $3.75 million worth of fixtures.

Appendix Table 4e: Industrial Property Taxes for Selected Rural Municipalities (Personal Property = 50% of Total Parcel Value)

		Land and Building Value: $100,000			Land and Building Value: $1 Million			Land and Building Value: $25 Million			Tax Rate Varies with Property Value
State	**Municipality**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	
Alabama	Monroeville	0.656%	1,312	44 (3 ↑)	0.656%	13,120	46 (2 ↑)	0.656%	328,000	46 (2 ↑)	
Alaska	Ketchican	0.686%	1,373	43 (-)	0.818%	16,362	42 (2 ↓)	0.832%	416,081	42 (3 ↓)	X
Arizona	Safford	0.701%	1,403	41 (6 ↓)	1.155%	23,107	25 (10 ↓)	1.297%	648,377	20 (6 ↓)	X
Arkansas	Pocahontas	0.722%	1,443	40 (5 ↑)	0.722%	14,434	44 (2 ↑)	0.722%	360,861	44 (2 ↑)	
California	Yreka	0.842%	1,685	38 (1 ↑)	0.842%	16,848	41 (1 ↑)	0.842%	421,200	41 (1 ↑)	
Colorado	Walsenburg	1.708%	3,417	9 (1 ↓)	1.708%	34,169	11 (1 ↑)	1.708%	854,224	12 (-)	
Connecticut	Litchfield	0.991%	1,983	31 (1 ↑)	0.991%	19,826	33 (1 ↑)	0.991%	495,639	34 (1 ↑)	
Delaware	Georgetown	0.298%	597	50 (-)	0.298%	5,970	50 (-)	0.298%	149,240	50 (-)	
Florida	Moore Haven	1.552%	3,104	11 (2 ↑)	1.812%	36,233	8 (-)	1.839%	919,674	8 (-)	X
Georgia	Fitzgerald	1.525%	3,050	13 (2 ↓)	1.525%	30,496	14 (-)	1.525%	762,400	14 (1 ↑)	
Hawaii	Kauai	0.405%	810	49 (-)	0.405%	8,100	49 (-)	0.405%	202,500	49 (-)	
Idaho	St. Anthony	0.603%	1,205	48 (8 ↓)	1.027%	20,531	27 (6 ↓)	1.108%	553,978	28 (9 ↓)	X
Illinois	Galena	1.187%	2,375	22 (-)	1.187%	23,750	23 (1 ↑)	1.187%	593,742	25 (-)	
Indiana	North Vernon	2.325%	4,650	4 (-)	2.325%	46,500	4 (-)	2.325%	1,162,500	5 (1 ↓)	
Iowa	Hampton	1.093%	2,185	25 (9 ↓)	1.604%	32,071	13 (3 ↓)	1.714%	857,036	11 (1 ↓)	X
Kansas	Iola	2.505%	5,009	3 (-)	2.505%	50,094	3 (-)	2.505%	1,252,339	3 (-)	
Kentucky	Morehead	0.621%	1,242	47 (1 ↓)	0.621%	12,416	48 (1 ↓)	0.621%	310,400	48 (1 ↓)	
Louisiana	Natchitoches	1.393%	2,787	16 (2 ↓)	1.393%	27,866	17 (1 ↓)	1.393%	696,647	17 (1 ↓)	
Maine	Rockland	1.166%	2,332	23 (1 ↑)	1.166%	23,320	24 (2 ↑)	1.166%	583,000	26 (1 ↑)	
Maryland	Denton	0.980%	1,960	33 (1 ↑)	0.980%	19,598	35 (1 ↑)	0.980%	489,950	36 (1 ↑)	
Massachusetts	Adams	1.244%	2,487	18 (-)	1.244%	24,872	20 (-)	1.244%	621,810	22 (-)	
Michigan	Manistique	1.540%	3,079	12 (2 ↓)	1.994%	39,886	7 (1 ↓)	1.994%	997,151	7 (1 ↓)	X
Minnesota	Glencoe	1.780%	3,559	7 (5 ↑)	2.259%	45,188	5 (2)	2.341%	1,170,326	4 (3 ↑)	X
Mississippi	Philadelphia	2.104%	4,208	5 (-)	2.104%	42,084	6 (1 ↓)	2.104%	1,052,100	6 (1 ↓)	
Missouri	Boonville	1.650%	3,301	10 (1 ↓)	1.650%	33,007	12 (1 ↑)	1.650%	825,164	13 (-)	
Montana	Glasgow	0.652%	1,303	45 (3 ↑)	0.951%	19,015	36 (1 ↑)	1.365%	682,456	18 (-)	X
Nebraska	Sidney	1.727%	3,454	8 (1 ↓)	1.727%	34,537	10 (1 ↑)	1.727%	863,431	10 (1 ↑)	
Nevada	Fallon	1.025%	2,050	26 (-)	1.025%	20,496	28 (-)	1.025%	512,400	29 (-)	
New Hampshire	Lancaster	1.405%	2,809	15 (5 ↑)	1.405%	28,095	16 (6 ↑)	1.405%	702,370	16 (7 ↑)	
New Jersey	Maurice River Twp	1.231%	2,463	20 (1 ↑)	1.231%	24,629	21 (2 ↑)	1.231%	615,718	23 (1 ↑)	
New Mexico	Santa Rosa	0.848%	1,697	37 (-)	0.848%	16,968	40 (1 ↓)	0.848%	424,200	40 (-)	
New York	Warsaw	1.785%	3,570	6 (-)	1.785%	35,700	9 (-)	1.785%	892,508	9 (-)	
North Carolina	Edenton	0.852%	1,705	36 (2 ↑)	0.852%	17,045	39 (2 ↑)	0.852%	426,129	39 (2 ↑)	
North Dakota	Devils Lake	0.628%	1,255	46 (4 ↓)	0.628%	12,550	47 (3 ↓)	0.628%	313,750	47 (3 ↓)	
Ohio	Bryan	0.990%	1,980	32 (7 ↓)	0.990%	19,797	34 (7 ↓)	0.990%	494,920	35 (7 ↓)	
AVERAGE		**1.227%**	**2,453**		**1.287%**	**25,749**		**1.305%**	**652,470**		**N = 9**

		Land and Building Value: $100,000			Land and Building Value: $1 Million			Land and Building Value: $25 Million			Tax Rate Varies with Property Value
State	**Municipality**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	
Oklahoma	Mangum	0.993%	1,986	30 (2 ↓)	0.993%	19,864	32 (2 ↓)	0.993%	496,598	33 (2 ↓)	
Oregon	Tillamook	0.933%	1,866	35 (2 ↓)	0.933%	18,662	38 (3 ↓)	0.933%	466,547	38 (2 ↓)	
Pennsylvania	Ridgway	1.514%	3,029	14 (1 ↑)	1.514%	30,288	15 (2 ↑)	1.514%	757,197	15 (2 ↑)	
Rhode Island	Hopkinton	1.137%	2,274	24 (3 ↑)	1.137%	22,744	26 (3 ↑)	1.137%	568,602	27 (3 ↑)	
South Carolina	Mullins	3.586%	7,172	1 (-)	3.586%	71,718	1 (-)	3.586%	1,792,960	1 (-)	
South Dakota	Madison	1.004%	2,007	29 (2 ↑)	1.004%	20,070	31 (2 ↑)	1.004%	501,760	32 (2 ↑)	
Tennessee	Savannah	0.938%	1,876	34 (2 ↑)	0.938%	18,757	37 (1 ↑)	0.938%	468,930	37 (1 ↑)	
Texas	Fort Stockton	2.556%	5,112	2 (-)	2.556%	51,122	2 (-)	2.556%	1,278,050	2 (-)	
Utah	Richfield	1.009%	2,017	28 (2 ↑)	1.009%	20,173	30 (2 ↑)	1.009%	504,320	31 (2 ↑)	
Vermont	Hartford	1.203%	2,405	21 (2 ↑)	1.203%	24,053	22 (3 ↑)	1.203%	601,331	24 (2 ↑)	
Virginia	Wise	0.747%	1,494	39 (2 ↑)	0.747%	14,940	43 (-)	0.747%	373,500	43 (-)	
Washington	Okanogan	1.009%	2,018	27 (2 ↑)	1.009%	20,178	29 (2 ↑)	1.009%	504,452	30 (2 ↑)	
West Virginia	Elkins	1.345%	2,691	17 (-)	1.345%	26,908	18 (1 ↑)	1.345%	672,688	19 (2 ↑)	
Wisconsin	Rice Lake	1.235%	2,470	19 (-)	1.265%	25,298	19 (1 ↓)	1.268%	634,059	21 (1 ↓)	X
Wyoming	Worland	0.701%	1,401	42 (2 ↑)	0.701%	14,012	45 (-)	0.701%	350,290	45 (-)	
AVERAGE		**1.227%**	**2,453**		**1.287%**	**25,749**		**1.305%**	**652,470**		**N = 9**

$100,000-valued property has an additional $50,000 worth of machinery and equipment, an additional $40,000 worth of inventories, and an additional $10,000 worth of fixtures.
$1 million-valued property has an additional $500,000 worth of machinery and equipment, an additional $400,000 worth of inventories, and an additional $100,000 worth of fixtures.
$25 million-valued property has an additional $12.5 million worth of machinery and equipment, an additional $10 million worth of inventories, and an additional $2.5 million worth of fixtures.

Appendix Table 4f: Industrial Property Taxes for Selected Rural Municipalities (Personal Property = 60% of Total Parcel Value)

		Land and Building Value: $100,000			Land and Building Value: $1 Million			Land and Building Value: $25 Million			Tax Rate Varies with Property Value
State	**Municipality**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	
Alabama	Monroeville	0.623%	1,558	43 (2 ↑)	0.623%	15,580	46 (-)	0.623%	389,500	46 (-)	
Alaska	Ketchican	0.690%	1,724	41 (-)	0.795%	19,872	41 (4 ↓)	0.806%	503,831	39 (3 ↓)	X
Arizona	Safford	0.561%	1,403	44 (4 ↓)	1.165%	29,120	18 (3 ↓)	1.278%	798,682	18 (6 ↓)	X
Arkansas	Pocahontas	0.722%	1,806	40 (2 ↑)	0.722%	18,061	44 (-)	0.722%	451,536	44 (-)	
California	Yreka	0.800%	2,001	37 (-)	0.800%	20,007	40 (1 ↑)	0.800%	500,175	41 (-)	
Colorado	Walsenburg	1.623%	4,058	7 (-)	1.623%	40,576	10 (1 ↓)	1.623%	1,014,391	10 (-)	
Connecticut	Litchfield	0.830%	2,074	33 (3 ↑)	0.830%	20,743	36 (4 ↑)	0.830%	518,564	36 (4 ↑)	
Delaware	Georgetown	0.239%	597	50 (-)	0.239%	5,970	50 (-)	0.239%	149,240	50 (-)	
Florida	Moore Haven	1.519%	3,796	9 (-)	1.726%	43,157	8 (1 ↓)	1.748%	1,092,762	8 (1 ↓)	X
Georgia	Fitzgerald	1.485%	3,712	10 (-)	1.485%	37,116	12 (-)	1.485%	927,905	12 (1 ↑)	
Hawaii	Kauai	0.324%	810	49 (-)	0.324%	8,100	49 (-)	0.324%	202,500	49 (-)	
Idaho	St. Anthony	0.482%	1,205	48 (4 ↓)	1.025%	25,618	21 (3 ↓)	1.090%	681,144	21 (2 ↓)	X
Illinois	Galena	0.950%	2,375	28 (2 ↓)	0.950%	23,750	31 (3 ↓)	0.950%	593,742	32 (3 ↓)	
Indiana	North Vernon	2.220%	5,550	3 (-)	2.220%	55,500	3 (-)	2.220%	1,387,500	3 (-)	
Iowa	Hampton	0.874%	2,185	31 (14 ↓)	1.283%	32,071	16 (-)	1.371%	857,036	16 (1 ↓)	X
Kansas	Iola	2.093%	5,233	5 (-)	2.093%	52,328	5 (-)	2.093%	1,308,197	5 (-)	
Kentucky	Morehead	0.548%	1,369	45 (1 ↑)	0.548%	13,689	47 (-)	0.548%	342,230	47 (-)	
Louisiana	Natchitoches	1.404%	3,511	13 (1 ↓)	1.404%	35,112	14 (-)	1.404%	877,809	14 (2 ↑)	
Maine	Rockland	0.975%	2,438	22 (5 ↑)	0.975%	24,380	25 (4 ↑)	0.975%	609,500	26 (4 ↑)	
Maryland	Denton	0.863%	2,157	32 (1 ↑)	0.863%	21,573	35 (1 ↑)	0.863%	539,325	35 (2 ↑)	
Massachusetts	Adams	0.995%	2,487	20 (2 ↓)	0.995%	24,872	23 (2 ↓)	0.995%	621,810	24 (2 ↓)	
Michigan	Manistique	1.268%	3,170	15 (2 ↓)	1.814%	45,341	6 (-)	1.814%	1,133,526	7 (1 ↓)	X
Minnesota	Glencoe	1.424%	3,559	12 (3 ↑)	1.808%	45,188	7 (3 ↑)	1.873%	1,170,326	6 (3 ↑)	X
Mississippi	Philadelphia	2.104%	5,261	4 (-)	2.104%	52,605	4 (-)	2.104%	1,315,125	4 (-)	
Missouri	Boonville	1.570%	3,925	8 (-)	1.570%	39,248	11 (-)	1.570%	981,194	11 (-)	
Montana	Glasgow	0.521%	1,303	46 (2 ↑)	0.904%	22,606	33 (1 ↓)	1.379%	861,999	15 (2 ↑)	X
Nebraska	Sidney	1.652%	4,131	6 (-)	1.652%	41,311	9 (1 ↓)	1.652%	1,032,777	9 (1 ↓)	
Nevada	Fallon	0.974%	2,434	23 (2 ↓)	0.974%	24,339	26 (3 ↓)	0.974%	608,475	27 (3 ↓)	
New Hampshire	Lancaster	1.124%	2,809	17 (5 ↑)	1.124%	28,095	19 (5 ↑)	1.124%	702,370	20 (5 ↑)	
New Jersey	Maurice River Twp	0.985%	2,463	21 (3 ↑)	0.985%	24,629	24 (2 ↑)	0.985%	615,718	25 (2 ↑)	
New Mexico	Santa Rosa	0.808%	2,020	35 (1 ↓)	0.808%	20,204	38 (-)	0.808%	505,097	38 (-)	
New York	Warsaw	1.428%	3,570	11 (-)	1.428%	35,700	13 (-)	1.428%	892,508	13 (1 ↑)	
North Carolina	Edenton	0.815%	2,038	34 (1 ↑)	0.815%	20,375	37 (2 ↑)	0.815%	509,379	37 (2 ↑)	
North Dakota	Devils Lake	0.502%	1,255	47 (-)	0.502%	12,550	48 (-)	0.502%	313,750	48 (-)	
Ohio	Bryan	0.792%	1,980	38 (6 ↓)	0.792%	19,797	42 (7 ↓)	0.792%	494,920	42 (7 ↓)	
AVERAGE		**1.105%**	**2,761**		**1.169%**	**29,217**		**1.186%**	**740,952**		**N = 9**

		Land and Building Value: $100,000			Land and Building Value: $1 Million			Land and Building Value: $25 Million			Tax Rate Varies with Property Value
State	**Municipality**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	**Tax Rate**	**Tax Bill**	**Rank**	
Oklahoma	Mangum	1.015%	2,538	19 (1 ↑)	1.015%	25,382	22 (-)	1.015%	634,541	23 (-)	
Oregon	Tillamook	0.886%	2,216	30 (1 ↓)	0.886%	22,161	34 (3 ↓)	0.886%	554,024	34 (2 ↓)	
Pennsylvania	Ridgway	1.212%	3,029	16 (-)	1.212%	30,288	17 (2 ↑)	1.212%	757,197	19 (1 ↑)	
Rhode Island	Hopkinton	0.951%	2,376	27 (3 ↑)	0.951%	23,763	30 (3 ↑)	0.951%	594,077	31 (2 ↑)	
South Carolina	Mullins	3.407%	8,517	1 (-)	3.407%	85,166	1 (-)	3.407%	2,129,140	1 (-)	
South Dakota	Madison	0.803%	2,007	36 (3 ↑)	0.803%	20,070	39 (4 ↑)	0.803%	501,760	40 (3 ↑)	
Tennessee	Savannah	0.917%	2,293	29 (2 ↑)	0.917%	22,927	32 (2 ↑)	0.917%	573,180	33 (1 ↑)	
Texas	Fort Stockton	2.556%	6,390	2 (-)	2.556%	63,903	2 (-)	2.556%	1,597,563	2 (-)	
Utah	Richfield	0.958%	2,396	26 (1 ↓)	0.958%	23,955	29 (2 ↓)	0.958%	598,880	30 (2 ↓)	
Vermont	Hartford	0.962%	2,405	25 (3 ↑)	0.962%	24,053	28 (2 ↑)	0.962%	601,331	29 (2 ↑)	
Virginia	Wise	0.776%	1,941	39 (1 ↓)	0.776%	19,410	43 (1 ↓)	0.776%	485,250	43 (1 ↓)	
Washington	Okanogan	0.963%	2,407	24 (1 ↓)	0.963%	24,073	27 (2 ↓)	0.963%	601,825	28 (2 ↓)	
West Virginia	Elkins	1.337%	3,342	14 (-)	1.337%	33,417	15 (2 ↑)	1.337%	835,435	17 (1 ↑)	
Wisconsin	Rice Lake	1.034%	2,585	18 (1 ↑)	1.058%	26,451	20 (-)	1.061%	662,882	22 (1 ↓)	X
Wyoming	Worland	0.666%	1,664	42 (1 ↑)	0.666%	16,639	45 (-)	0.666%	415,969	45 (-)	
AVERAGE		**1.105%**	**2,761**		**1.169%**	**29,217**		**1.186%**	**740,952**		**N = 9**

$100,000-valued property has an additional $75,000 worth of machinery and equipment, an additional $60,000 worth of inventories, and an additional $15,000 worth of fixtures.
$1 million-valued property has an additional $750,000 worth of machinery and equipment, an additional $600,000 worth of inventories, and an additional $150,000 worth of fixtures.
$25 million-valued property has an additional $18.75 million worth of machinery and equipment, an additional $15 million worth of inventories, and an additional $3.75 million worth of fixtures.

Table 4g: Preferential Treatment of Personal Property, Largest City in Each State (2015)

State	City	Machinery & Equipment		Manufacturers' Inventories		Fixtures		Rural Municipality
		Full Exemption	Preferential Treatment	Full Exemption	Preferential Treatment	Full Exemption	Preferential Treatment	Are preferences for personal property the same as in the state's rural municipality?
Alabama	Birmingham			X	X			Yes
Alaska	Anchorage		X		X		X	No - See note below
Arizona	Phoenix		X	X	X		X	Yes
Arkansas	Little Rock							No - See note below
California	Los Angeles			X	X			Yes
Colorado	Denver			X	X			Yes
Connecticut	Bridgeport	X	X	X	X			Yes
DC	Washington		-	X	X		-	Yes
Delaware	Wilmington	X	X	X	X	X	X	Yes
Florida	Jacksonville		X	X	X		X	Yes
Georgia	Atlanta				X			Yes
Hawaii	Honolulu	X	X	X	X	X	X	Yes
Idaho	Boise		X	X	X		X	Yes
Illinois	Chicago	X	X	X	X	X	X	Yes
Illinois	Aurora	X	X	X	X	X	X	Yes
Indiana	Indianapolis			X	X			Yes
Iowa	Des Moines	X	X	X	X	X	X	Yes
Kansas	Wichita	X	X	X	X			Yes
Kentucky	Louisville		X		X		-	Yes
Louisiana	New Orleans		-		-		-	Yes
Maine	Portland	X	X	X	X			Yes
Maryland	Baltimore	X	X	X	X		-	Yes
Massachusetts	Boston	X	X	X	X	X	X	Yes
Michigan	Detroit		X	X	X		X	Yes
Minnesota	Minneapolis	X	X	X	X	X	X	Yes
Mississippi	Jackson							Yes
Missouri	Kansas City		X	X	X		X	Yes
Montana	Billings		***	X	X		***	Yes
Nebraska	Omaha		-	X	X		-	Yes
Nevada	Las Vegas			X	X			Yes
New Hampshire	Manchester	X	X	X	X	X	X	Yes
New Jersey	Newark	X	X	X	X	X	X	Yes
New Mexico	Albuquerque			X	X			No - See note below
New York	New York City	X	X	X	X	X	X	Yes
New York	Buffalo	X	X	X	X	X	X	Yes
	Number of Cities	**21**	**31**	**43**	**47**	**15**	**23**	**No = 7**

State	City	Machinery & Equipment		Manufacturers' Inventories		Fixtures		Rural Municipality
		Full Exemption	Preferential Treatment	Full Exemption	Preferential Treatment	Full Exemption	Preferential Treatment	Are preferences for personal property the same as in the state's rural municipality?
North Carolina	Charlotte			X	X			Yes
North Dakota	Fargo	X	X	X	X	X	X	Yes
Ohio	Columbus	X	X	X	X	X	X	Yes
Oklahoma	Oklahoma City		-		-		-	Yes
Oregon	Portland			X	X			Yes
Pennsylvania	Philadelphia	X	X	X	X	X	X	Yes
Rhode Island	Providence	X	X	X	X		-	No - See note below
South Carolina	Columbia			X	X			Yes
South Dakota	Sioux Falls	X	X	X	X	X	X	Yes
Tennessee	Memphis		X		X		X	Yes
Texas	Houston							Yes
Utah	Salt Lake City			X	X			Yes
Vermont	Burlington		X	X	X		X	No - See note below
Virginia	Virginia Beach		X	X	X		-	No - See note below
Washington	Seattle			X	X			Yes
West Virginia	Charleston							Yes
Wisconsin	Milwaukee	X	X	X	X		-	Yes
Wyoming	Cheyenne			X	X			No - See note below
	Number of Cities	**21**	**31**	**43**	**47**	**15**	**23**	**No = 7**

* Preferential treatment means there are statutory provisions that result in lower property taxes on personal property than on real property, which could be due to exemptions/credits, the nominal tax rate, or the assessment ratio. Preferences are usually fairly uniform within a state.
** A dash ("-") indicates that real property is treated preferentially to personal property.
*** In Montana, whether personal property is treated preferentially to real property depends on the total value of a parcel. At low values, machinery and equipment and fixtures are taxed preferentially, because of Montana's exemption of the first $100,000 of property value. But at high values, personal property is being taxed more heavily than real property because the state has a system of tiered assessment ratios.

Differences in Preferential Treatment in Rural Municipalities
-Alaska: Ketchikan has a full exemption for manufacturers' inventories.
-Arkansas: Pocahontas has preferential treatment for manufacturers' inventories.
-New Mexico: Santa Rosa has preferential treatment for machinery/equipment and fixtures.
-Rhode Island: Hopkinton does not treat real property preferentially to fixtures.
-Vermont: Hartford has a full exemption for machinery/equipment and fixtures.
-Virginia: Wise treats real property preferentially to machinery/equipment.
-Wyoming: Worland does not have preferential treatment for manufacturers' inventories.

Appendix Table 5a: Apartment Property Taxes for Largest City in Each State

		Land and Building Value: $600,000				Lower Tax Rate on Personal Property
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Change From '14**	
Alabama	Birmingham	1.450%	9,135	30	2 ↑	
Alaska	Anchorage	1.323%	8,335	35	-	X
Arizona	Phoenix	1.311%	8,259	36	8 ↑	X
Arkansas	Little Rock	1.441%	9,077	31	-	X
California	Los Angeles	1.192%	7,510	42	-	
Colorado	Denver	0.741%	4,669	51	-	
Connecticut	Bridgeport	3.681%	23,192	5	-	X
DC	Washington	0.746%	4,697	50	-	X
Delaware	Wilmington	1.246%	7,851	40	3 ↓	X
Florida	Jacksonville	1.695%	10,679	24	-	X
Georgia	Atlanta	1.662%	10,473	26	-	
Hawaii	Honolulu	0.326%	2,051	53	-	X
Idaho	Boise	1.607%	10,126	28	1 ↓	X
Illinois	Aurora*	3.917%	24,675	3	1 ↑	X
Illinois	Chicago	1.654%	10,420	27	4 ↓	X
Indiana	Indianapolis	1.954%	12,313	20	1 ↓	X
Iowa	Des Moines	3.773%	23,769	4	1 ↓	X
Kansas	Wichita	1.394%	8,783	33	-	
Kentucky	Louisville	1.240%	7,812	41	-	X
Louisiana	New Orleans	1.528%	9,625	29	1 ↑	
Maine	Portland	2.063%	12,997	19	2 ↑	
Maryland	Baltimore	2.243%	14,132	17	3 ↑	
Massachusetts	Boston	1.073%	6,757	45	5 ↓	X
Michigan	Detroit	4.783%	30,135	2	-	X
Minnesota	Minneapolis	1.700%	10,709	23	1 ↓	X
Mississippi	Jackson	2.685%	16,918	12	-	
Missouri	Kansas City	1.419%	8,938	32	3 ↓	X
Montana	Billings	0.824%	5,191	48	-	X
Nebraska	Omaha	2.080%	13,102	18	-	
Nevada	Las Vegas	1.119%	7,051	44	1 ↑	
New Hampshire	Manchester	2.255%	14,205	16	1 ↑	X
New Jersey	Newark	2.901%	18,274	10	1 ↑	X
New Mexico	Albuquerque	1.332%	8,389	34	-	
New York	Buffalo*	2.992%	18,848	7	1 ↓	X
New York	New York City	5.466%	34,436	1	-	X
AVERAGE		**1.907%**	**12,016**			**N = 30**

		Land and Building Value: $600,000				Lower Tax Rate on Personal Property
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Change From '14**	
North Carolina	Charlotte	1.169%	7,363	43	-	
North Dakota	Fargo	1.298%	8,175	37	1 ↓	X
Ohio	Columbus	1.854%	11,679	21	8 ↓	X
Oklahoma	Oklahoma City	1.279%	8,057	38	-	
Oregon	Portland	2.291%	14,436	15	1 ↑	
Pennsylvania	Philadelphia	1.263%	7,960	39	-	X
Rhode Island	Providence	3.017%	19,009	6	2 ↑	
South Carolina	Columbia	2.934%	18,483	8	2 ↑	
South Dakota	Sioux Falls	1.827%	11,512	22	3 ↑	X
Tennessee	Memphis	2.911%	18,338	9	2 ↓	X
Texas	Houston	2.358%	14,854	14	-	
Utah	Salt Lake City	0.879%	5,541	46	3 ↑	
Vermont	Burlington	2.378%	14,980	13	2 ↑	X
Virginia	Virginia Beach	0.823%	5,186	49	3 ↓	
Washington	Seattle	0.870%	5,483	47	-	
West Virginia	Charleston	1.689%	10,641	25	3 ↑	X
Wisconsin	Milwaukee	2.857%	18,001	11	2 ↓	
Wyoming	Cheyenne	0.576%	3,632	52	-	
AVERAGE		**1.907%**	**12,016**			**N = 30**

* Illinois and New York have two cities included in this table, because the tax systems in Chicago and New York City are significantly different from the rest of the state. Property has an additional $30,000 worth of fixtures.

Appendix Table 5b: Apartment Property Taxes for the Largest Fifty U.S. Cities

		Land and Building Value: $600,000				Lower Tax Rate on Personal Property
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Rank**	
Arizona	Mesa	0.929%	5,855	45	1 ↑	X
Arizona	Phoenix	1.311%	8,259	29	1 ↑	X
Arizona	Tucson	1.296%	8,164	30	1 ↓	X
California	Fresno	1.229%	7,745	35	1 ↓	
California	Long Beach	1.125%	7,087	41	-	
California	Los Angeles	1.192%	7,510	36	-	
California	Oakland	1.365%	8,602	27	1 ↓	
California	Sacramento	1.143%	7,198	40	2 ↑	
California	San Diego	1.175%	7,400	38	-	
California	San Francisco	1.183%	7,450	37	3 ↑	
California	San Jose	1.290%	8,130	31	1 ↓	
Colorado	Colorado Springs	0.521%	3,285	50	-	
Colorado	Denver	0.741%	4,669	49	-	
DC	Washington	0.746%	4,697	48	-	X
Florida	Jacksonville	1.695%	10,679	19	3 ↑	X
Florida	Miami	1.897%	11,954	15	4 ↑	X
Georgia	Atlanta	1.662%	10,473	20	3 ↑	
Illinois	Chicago	1.654%	10,420	21	1 ↓	X
Indiana	Indianapolis	1.838%	11,582	17	1 ↓	X
Kansas	Wichita	1.394%	8,783	26	1 ↑	
Kentucky	Louisville	1.240%	7,812	34	1 ↑	X
Louisiana	New Orleans*	1.528%	9,625	23	NA	
Maryland	Baltimore	2.243%	14,132	12	5 ↑	
Massachusetts	Boston	1.073%	6,757	43	1 ↓	X
Michigan	Detroit	4.783%	30,135	2	-	X
Minnesota	Minneapolis	1.700%	10,709	18	-	X
Missouri	Kansas City	1.419%	8,938	25	1 ↓	X
Nebraska	Omaha	2.080%	13,102	14	1 ↑	
Nevada	Las Vegas	1.119%	7,051	42	1 ↑	
New Mexico	Albuquerque	1.332%	8,389	28	-	
New York	New York City	5.466%	34,436	1	-	X
North Carolina	Charlotte	1.169%	7,363	39	2 ↓	
North Carolina	Raleigh	1.040%	6,551	44	-	X
Ohio	Cleveland	2.743%	17,282	6	2 ↓	X
Ohio	Columbus	1.854%	11,679	16	6 ↓	X
AVERAGE		**1.729%**	**10,895**			**N = 21**

		Land and Building Value: $600,000				Lower Tax Rate on Personal Property
State	**City**	**Tax Rate**	**Tax Bill**	**Rank**	**Rank**	
Oklahoma	Oklahoma City	1.279%	8,057	32	1 ↓	
Oklahoma	Tulsa	1.473%	9,281	24	1 ↑	X
Oregon	Portland	2.291%	14,436	11	2 ↑	
Pennsylvania	Philadelphia	1.263%	7,960	33	1 ↓	X
Tennessee	Memphis	2.911%	18,338	3	-	X
Tennessee	Nashville	1.582%	9,968	22	1 ↓	X
Texas	Austin	2.178%	13,720	13	1 ↑	
Texas	Dallas	2.655%	16,729	7	4 ↑	
Texas	El Paso	2.315%	14,584	10	2 ↓	
Texas	Fort Worth	2.823%	17,786	5	1 ↑	
Texas	Houston	2.358%	14,854	9	3 ↑	
Texas	San Antonio	2.610%	16,444	8	1 ↓	
Virginia	Virginia Beach	0.823%	5,186	47	2 ↓	
Washington	Seattle	0.870%	5,483	46	1 ↑	
Wisconsin	Milwaukee	2.857%	18,001	4	1 ↑	
AVERAGE		**1.729%**	**10,895**			**N = 21**

* New Orleans, LA replaces Arlington, TX in the set of fifty largest cities.
Property has an additional $30,000 worth of fixtures.

Appendix Table 5c: Apartment Property Taxes for Selected Rural Municipalities

		Land and Building Value: $600,000				Lower Tax Rate on Personal Property
State	**Municipality**	**Tax Rate**	**Tax Bill**	**Rank**	**Rank**	
Alabama	Monroeville	0.820%	5,166	42	1 ↓	
Alaska	Ketchican	0.927%	5,839	37	-	X
Arizona	Safford	0.736%	4,634	43	1 ↓	X
Arkansas	Pocahontas	0.719%	4,531	46	-	
California	Yreka	1.053%	6,634	32	3 ↑	
Colorado	Walsenburg	0.660%	4,158	47	2 ↑	
Connecticut	Litchfield	1.801%	11,345	22	2 ↑	
Delaware	Georgetown	0.565%	3,562	50	3 ↓	X
Florida	Moore Haven	2.205%	13,893	12	-	X
Georgia	Fitzgerald	1.726%	10,871	23	1 ↓	
Hawaii	Kauai	0.576%	3,630	49	1 ↑	X
Idaho	St. Anthony	1.148%	7,232	31	5 ↓	X
Illinois	Galena	2.262%	14,250	11	-	X
Indiana	North Vernon	1.810%	11,400	21	2 ↑	X
Iowa	Hampton	3.414%	21,511	1	1 ↑	X
Kansas	Iola	2.163%	13,628	13	3 ↓	
Kentucky	Morehead	0.940%	5,922	36	4 ↓	X
Louisiana	Natchitoches	0.912%	5,749	39	1 ↓	
Maine	Rockland	2.120%	13,356	14	2 ↑	
Maryland	Denton	1.678%	10,574	24	1 ↑	
Massachusetts	Adams	1.995%	12,566	19	2 ↓	X
Michigan	Manistique	3.131%	19,725	3	-	X
Minnesota	Glencoe	2.012%	12,676	18	1 ↑	X
Mississippi	Philadelphia	2.104%	13,256	16	1 ↓	
Missouri	Boonville	1.017%	6,407	35	1 ↓	X
Montana	Glasgow	0.886%	5,585	41	2 ↑	X
Nebraska	Sidney	2.107%	13,271	15	1 ↓	
Nevada	Fallon	1.271%	8,004	27	1 ↑	
New Hampshire	Lancaster	2.676%	16,857	5	3 ↑	
New Jersey	Maurice River Twp	2.346%	14,777	8	1 ↑	X
New Mexico	Santa Rosa	0.920%	5,798	38	1 ↑	
New York	Warsaw	3.400%	21,420	2	1 ↓	X
North Carolina	Edenton	1.042%	6,564	33	-	
North Dakota	Devils Lake	1.195%	7,530	29	2 ↓	X
Ohio	Bryan	1.597%	10,062	25	7 ↓	X
AVERAGE		**1.604%**	**10,103**			**N = 24**

		Land and Building Value: $600,000				Lower Tax Rate on Personal Property
State	**Municipality**	**Tax Rate**	**Tax Bill**	**Rank**	**Rank**	
Oklahoma	Mangum	0.893%	5,628	40	-	
Oregon	Tillamook	1.166%	7,348	30	1 ↑	
Pennsylvania	Ridgway	2.885%	18,173	4	-	X
Rhode Island	Hopkinton	2.069%	13,035	17	3 ↑	X
South Carolina	Mullins	2.520%	15,873	7	2 ↓	
South Dakota	Madison	1.911%	12,042	20	1 ↑	X
Tennessee	Savannah	1.032%	6,501	34	2 ↑	X
Texas	Fort Stockton	2.556%	16,103	6	-	
Utah	Richfield	0.720%	4,539	45	-	
Vermont	Hartford	2.291%	14,432	10	3 ↑	X
Virginia	Wise	0.642%	4,047	48	-	
Washington	Okanogan	1.242%	7,822	28	1 ↑	
West Virginia	Elkins	1.302%	8,202	26	4 ↑	
Wisconsin	Rice Lake	2.295%	14,461	9	2 ↓	
Wyoming	Worland	0.723%	4,558	44	-	
AVERAGE		**1.604%**	**10,103**			**N = 24**

Property has an additional $30,000 worth of fixtures.

Appendix Table 6a: Commercial-Homestead Classification Ratio for Largest City in Each State

		Classification Ratio			Causes of Preferential Treatment of Homesteads			
City	State	Rank	Ratio	Chg. from 2014	Assessment Ratio	Nominal Tax Rate	Exemptions & Credits	Sales Ratio*
Birmingham	Alabama	9	2.190	-0.011	X		X	
Anchorage	Alaska	35	1.080	0.002			X	
Phoenix	Arizona	15	2.066	-0.289	X	X		-
Little Rock	Arkansas	28	1.279	0.017			X	+
Los Angeles	California	42	1.014	-0.002			X	
Denver	Colorado	5	3.618	0.000	X			-
Bridgeport	Connecticut	51	0.959	0.091				-
Washington	DC	11	2.171	0.143		X	X	-
Wilmington	Delaware	53	0.956	-0.025				-
Jacksonville	Florida	25	1.464	0.012			X	
Atlanta	Georgia	29	1.216	-0.040			X	
Honolulu	Hawaii	4	3.620	-0.043		X	X	-
Boise	Idaho	16	2.035	-0.058			X	+
Aurora	Illinois	32	1.107	-0.016			X	
Chicago	Illinois	6	2.729	0.033	X		X	
Indianapolis	Indiana	7	2.648	-0.477			X	-
Des Moines	Iowa	23	1.561	-0.401	X		-	-
Wichita	Kansas	10	2.180	0.007	X		X	-
Louisville	Kentucky	41	1.014	0.001				+
New Orleans	Louisiana	8	2.198	-0.184	X		X	-
Portland	Maine	38	1.043	-0.003			X	
Baltimore	Maryland	49	0.995	0.133				-
Boston	Massachusetts	2	3.999	-0.009		X	X	-
Detroit	Michigan	34	1.103	0.017		X		-
Minneapolis	Minnesota	14	2.088	-0.069	X	X	X	+
Jackson	Mississippi	19	1.839	-0.035	X		X	
Kansas City	Missouri	18	1.859	0.028	X	X		-
Billings	Montana	26	1.400	-0.081	X			
Omaha	Nebraska	40	1.032	0.032				+
Las Vegas	Nevada	50	0.988	0.000				-
Manchester	New Hampshire	43	1.000	0.000				
Newark	New Jersey	45	1.000	0.000				
Albuquerque	New Mexico	30	1.154	0.000		X	X	
Buffalo	New York	20	1.804	0.014		X	X	+
New York City	New York	1	4.219	-0.104	X	-	X	

		Classification Ratio			Causes of Preferential Treatment of Homesteads			
City	**State**	**Rank**	**Ratio**	**Chg. from 2014**	**Assessment Ratio**	**Nominal Tax Rate**	**Exemptions & Credits**	**Sales Ratio***
Charlotte	North Carolina	43	1.000	0.000				
Fargo	North Dakota	33	1.106	-0.097	X			-
Columbus	Ohio	39	1.035	-0.330		X	X	-
Oklahoma City	Oklahoma	37	1.070	-0.001			X	
Portland	Oregon	45	1.000	0.000				
Philadelphia	Pennsylvania	12	2.122	-0.048		X	X	
Providence	Rhode Island	17	1.909	0.000		X		
Columbia	South Carolina	3	3.691	0.029	X		X	
Sioux Falls	South Dakota	24	1.559	0.218		X		+
Memphis	Tennessee	22	1.600	0.000	X			
Houston	Texas	27	1.380	0.050			X	+
Salt Lake City	Utah	21	1.800	0.011			X	-
Burlington	Vermont	31	1.147	0.043	X	X		+
Virginia Beach	Virginia	48	0.996	0.043				-
Seattle	Washington	47	1.000	0.000				
Charleston	West Virginia	13	2.107	0.036		X		+
Milwaukee	Wisconsin	36	1.070	0.005			X	
Cheyenne	Wyoming	52	0.958	-0.078				-
	TOTAL/AVERAGE		**1.683**	**-0.027**	**16**	**15**	**28**	**10 (+), 20 (-)**

*For sales ratio, "+" indicates that the sales ratio is higher for commercial properties and thus increases the classification ratio, while "-" indicates that the sales ratio is lower for commercial properties and thus decreases the classification ratio. For a few cities, one of the other three features of the property tax system favors commercial properties over homesteads, and this is also indicated with a “-”.

Appendix Table 6b: Apartment-Homestead Classification Ratio for Largest City in Each State

		Classification Ratio			Causes of Preferential Treatment of Homesteads			
City	State	Rank	Ratio	Chg. from 2014	Assessment Ratio	Nominal Tax Rate	Exemptions & Credits	Sales Ratio*
Birmingham	Alabama	5	2.190	-0.011	X		X	
Anchorage	Alaska	28	1.080	0.002			X	
Phoenix	Arizona	23	1.121	-0.008		X		
Little Rock	Arkansas	17	1.279	0.017			X	+
Los Angeles	California	38	1.014	-0.002			X	
Denver	Colorado	48	0.994	0.005				-
Bridgeport	Connecticut	51	0.959	0.091				-
Washington	DC	24	1.119	-0.035			X	-
Wilmington	Delaware	39	1.000	0.000				
Jacksonville	Florida	15	1.464	0.012			X	
Atlanta	Georgia	21	1.216	-0.040			X	
Honolulu	Hawaii	22	1.136	-0.014			X	-
Boise	Idaho	6	2.035	-0.058			X	+
Aurora	Illinois	25	1.107	-0.016			X	
Chicago	Illinois	27	1.096	-0.004	-		X	
Indianapolis	Indiana	3	2.648	0.533			X	-
Des Moines	Iowa	10	1.657	-0.345	X		X	-
Wichita	Kansas	36	1.024	-0.002			X	
Louisville	Kentucky	37	1.014	0.001				+
New Orleans	Louisiana	13	1.567	-0.048			X	
Portland	Maine	32	1.043	-0.003			X	
Baltimore	Maryland	47	0.995	0.133				-
Boston	Massachusetts	9	1.677	0.024			X	
Detroit	Michigan	18	1.262	-0.004		X		
Minneapolis	Minnesota	19	1.255	-0.117	X		X	-
Jackson	Mississippi	7	1.839	-0.035	X		X	
Kansas City	Missouri	39	1.000	0.000				
Billings	Montana	39	1.000	-0.028				
Omaha	Nebraska	35	1.032	0.032				+
Las Vegas	Nevada	50	0.988	0.000				-
Manchester	New Hampshire	39	1.000	0.000				
Newark	New Jersey	39	1.000	0.000				
Albuquerque	New Mexico	33	1.036	0.000			X	
Buffalo	New York	8	1.804	0.014		X	X	+
New York City	New York	1	5.101	-0.096	X	-	X	

		Classification Ratio			Causes of Preferential Treatment of Homesteads			
City	**State**	**Rank**	**Ratio**	**Chg. from 2014**	**Assessment Ratio**	**Nominal Tax Rate**	**Exemptions & Credits**	**Sales Ratio***
Charlotte	North Carolina	45	1.000	0.000				
Fargo	North Dakota	26	1.106	-0.097	X			-
Columbus	Ohio	34	1.035	-0.330		X	X	-
Oklahoma City	Oklahoma	30	1.070	-0.001			X	
Portland	Oregon	45	1.000	0.000				
Philadelphia	Pennsylvania	20	1.253	-0.028			X	
Providence	Rhode Island	11	1.657	0.000		X		
Columbia	South Carolina	2	3.691	0.029	X		X	
Sioux Falls	South Dakota	14	1.559	0.218		X		+
Memphis	Tennessee	12	1.600	0.000	X			
Houston	Texas	16	1.332	0.048			X	-
Salt Lake City	Utah	49	0.990	0.006				-
Burlington	Vermont	29	1.073	0.014	X	X		-
Virginia Beach	Virginia	53	0.852	-0.176				-
Seattle	Washington	39	1.000	0.000				
Charleston	West Virginia	4	2.214	0.107		X		+
Milwaukee	Wisconsin	31	1.068	0.004			X	
Cheyenne	Wyoming	52	0.876	-0.062				-
	TOTAL/AVERAGE		**1.380**	**-0.005**	**9**	**8**	**28**	**7 (+), 16 (-)**

*For sales ratio, "+" indicates that the sales ratio is higher for apartments and thus increases the classification ratio, while "-" indicates that the sales ratio is lower for apartments and thus decreases the classification ratio. For a few cities, one of the other three features of the property tax system favors apartments over homesteads, and this is also indicated with a “-”.

Table 7: Impact of Assessment Limits

Difference in Property Taxes between a Newly Purchased Home and a Home that Has Been Owned for the Average Duration for the City (For Median Valued Home)

		Tax Rate on Median-Valued Home			Tax Bill on Median-Valued Home			
State	City	Newly Purchased Home	Home Owned for Average Duration in City	Difference	Newly Purchased Home	Home Owned for Average Duration in City	Difference	% Difference
Arizona	Mesa	0.830	0.740	0.090	1,423	1,269	154	10.8%
Arizona	Phoenix	1.228	1.095	0.133	2,196	1,958	238	10.8%
Arizona	Tucson	1.209	1.209	0.000	1,530	1,530	0	0.0%
Arkansas	Little Rock	1.128	1.108	0.020	1,684	1,654	30	1.8%
California	Fresno	1.184	0.953	0.231	2,250	1,811	439	19.5%
California	Long Beach	1.107	0.665	0.442	4,881	2,934	1,947	39.9%
California	Los Angeles	1.175	0.768	0.407	5,942	3,884	2,058	34.6%
California	Oakland	1.346	0.986	0.360	6,723	4,924	1,799	26.8%
California	Sacramento	1.111	0.829	0.282	2,837	2,116	721	25.4%
California	San Diego	1.158	0.929	0.229	5,662	4,543	1,119	19.8%
California	San Francisco	1.173	0.826	0.347	9,931	6,991	2,940	29.6%
California	San Jose	1.277	0.942	0.335	8,447	6,232	2,215	26.2%
Florida	Jacksonville	1.205	1.003	0.202	1,586	1,320	266	16.8%
Florida	Miami	1.613	1.153	0.460	3,953	2,826	1,127	28.5%
Illinois	Chicago	1.585	1.514	0.071	3,483	3,328	155	4.5%
Michigan	Detroit	3.809	3.143	0.666	1,596	1,317	279	17.5%
New Mexico	Albuquerque	1.273	1.273	0.000	2,355	2,355	0	0.0%
New York	New York City	1.125	0.715	0.410	5,583	3,547	2,036	36.5%
Oklahoma	Oklahoma City	1.182	1.164	0.018	1,644	1,619	25	1.5%
Oregon	Portland	2.291	1.915	0.376	7,144	5,971	1,173	16.4%
South Carolina	Columbia	0.764	0.719	0.045	1,206	1,135	71	5.9%
Texas	Austin	1.984	1.957	0.027	5,077	5,007	70	1.4%
Texas	Dallas	2.117	2.117	0.000	2,978	2,978	0	0.0%
Texas	El Paso	2.640	2.640	0.000	3,147	3,147	0	0.0%
Texas	Fort Worth	2.467	2.467	0.000	3,141	3,141	0	0.0%
Texas	Houston	1.763	1.754	0.009	2,371	2,360	11	0.5%
Texas	San Antonio	2.225	2.225	0.000	2,648	2,648	0	0.0%
	AVERAGE	**1.554**	**1.363**	**0.191**	**3,756**	**3,057**	**699**	**13.9%**

Notes: Table is for states with parcel-specific assessment limits. Taxes on newly purchased homes come from Appendix Tables 2a and 2d, which ignore assessment limits. Taxes on homes owned for the average duration in each city come from Appendix Tables 2b and 2e, which do account for assessment limits. See Methodology section for details on calculation.