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The Geographic Distribution of the Mortgage Interest Deduction

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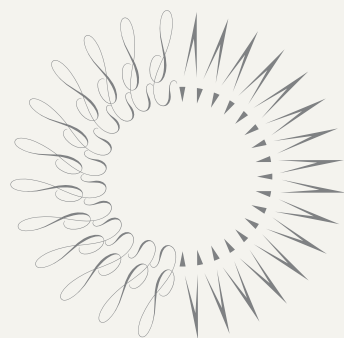
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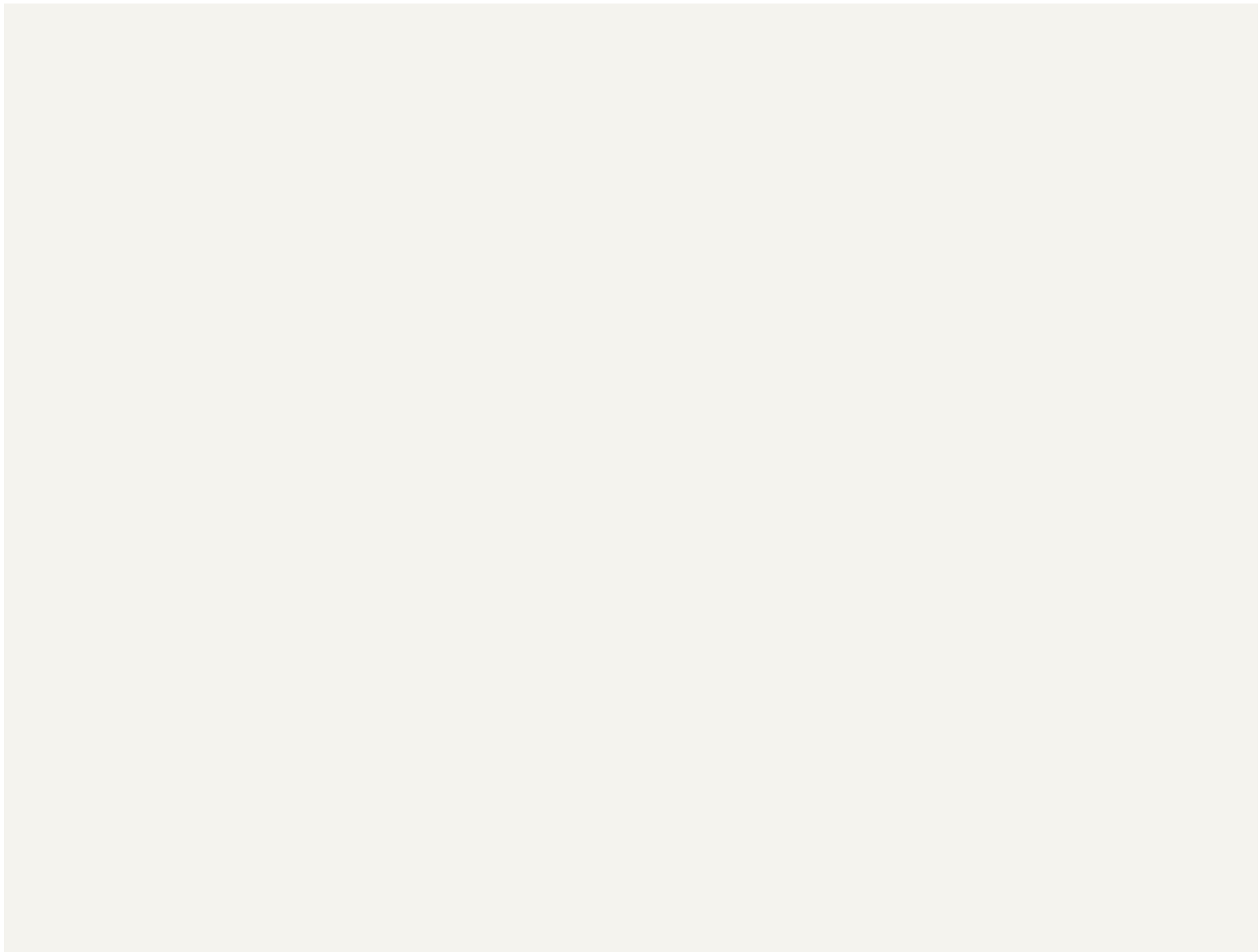


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Pew Overview

Policymakers continue to debate how to reduce the federal budget deficit and how to simplify the federal tax code. One point on which there seems to be emerging agreement is that reducing or eliminating tax expenditures could contribute to one or both efforts. Tax expenditures are special deductions, exemptions, and other provisions that allow people or businesses to reduce their income tax liability and, consequently, reduce federal tax revenue.¹ Because they reduce the revenue that the government would otherwise collect, tax expenditures are similar to direct government spending.

Tax expenditures totaled about \$1.1 trillion in fiscal 2011,² rivaling the total federal discretionary spending that funds programs supporting activities ranging from national defense to education to highways. One of the largest tax expenditures in the U.S. tax code is the deduction for home mortgage interest. Tax filers who own a home and itemize their deductions are allowed to subtract interest paid on mortgage debt from their income.³ In tax year 2011, filers deducted about \$360 billion in mortgage interest, resulting in roughly \$72 billion in forgone federal income tax revenue.⁴ Only two federal tax expenditures were larger that year, and in years past this deduction has often ranked second behind the exclusion for employer-provided health insurance.⁵

Informed decisions about whether or how to change or eliminate tax expenditures such as the mortgage interest deduction require, among other things, detailed analysis of who benefits from current policy and how changes could affect the distribution of those benefits. Decision-making also will require data on the fiscal costs and benefits. Many organizations—including the Joint Committee on Taxation, the U.S. Department of the Treasury, and a number of national deficit commissions—have examined federal tax expenditures at the national level.⁶ Analyses of the impact of federal tax expenditures at finer levels of geography have been much more limited, and there has been relatively little attention paid to how changes to these federal policies could affect states and their budgets.

The geographic distribution of mortgage interest deduction claims

“The Geographic Distribution of the Mortgage Interest Deduction,” commissioned by The Pew Charitable Trusts and written by Andrew Hanson of Marquette University, Ike Brannon of the R Street Institute, and Zackary Hawley of Texas Christian University, examines the geographic distribution of mortgage interest deduction claims across and within the states.⁷ The report also explores how changing the deduction could alter this distribution of claims.

Not surprisingly, the report shows that the geographic distribution of this tax expenditure generally is skewed toward areas with relatively high incomes and property values. (See maps beginning on page 8.) There are notable concentrations, particularly along parts

of the East Coast and in parts of the West. The report also, for the first time, uses detailed ZIP-code-level data from the Internal Revenue Service to show that the distribution of the deduction appears even more skewed at the metropolitan-area level, with tax filers in and around major metropolitan areas generally claiming the deduction at much higher rates and greater average amounts than filers in less-populous areas.

While the geographic concentration in areas where property values and incomes tend to be higher may not be surprising given the current structure of the mortgage interest deduction, there are other factors that could influence the distribution, including differences in housing turnover frequency and

the proportion of tax filers living in rental housing. With changes to tax expenditures under consideration, data showing the current geographic distribution of the mortgage interest deduction are an important element of an informed discussion about how changes to tax policy would affect the states.

Any modification to the deduction—such as eliminating it, capping itemized deductions generally, limiting deductions to mortgage interest paid for first homes, or replacing the deduction with a credit—would likely alter the distribution of this federal tax expenditure across geographic areas. Depending on how any changes are structured, federal taxes could increase in some areas and decrease in others.

As with many federal tax changes, this could affect economic activity both across and within states, and indirectly affect state and local revenues. Policymakers should be aware of the geographic implications of changes in federal tax policy as debates over federal deficit reduction and tax reform move forward.

This analysis uses Internal Revenue Service state-level data (from 2010) and ZIP-code-level data (from 2007) on the number of filers (that is, tax returns), the number of mortgage interest deduction claims, the amount of interest deducted, and federal income taxes paid.

The federal-state fiscal relationship and the mortgage interest deduction

This report is part of a series by Pew examining the mortgage interest deduction and housing subsidies. An earlier report, “Costs and Benefits of Housing Tax Subsidies,” looked at the distribution of the mortgage deduction’s benefits across income groups.⁸ Future research will analyze how changes to the deduction could directly affect state tax revenues. This series will provide facts and analysis as policymakers consider options for changing or eliminating the deduction or other tax expenditures over the next several years. It explores the connections between this federal policy and the states, but makes no recommendations regarding whether the deduction should or could be changed, or how.

Congress has yet to directly address changing the mortgage interest deduction, though it has started to address tax expenditures by recently reinstating a provision of law, eliminated in 2010, that limits the amount of itemized deductions that higher-income tax filers can claim.⁹ This provision effectively reduces the tax expenditures associated with certain deductions for higher-income filers, including the mortgage interest deduction, the deduction for state and local taxes, and the charitable deduction. Although policymakers have not yet identified which specific tax expenditures they recommend changing or eliminating, they are actively discussing changes to this category of federal spending that occurs through the tax code. The home mortgage interest deduction will likely be part of this discussion.

Benefits and costs

Research shows links¹⁰ between homeownership and more stable and cohesive neighborhoods, stronger attachment to communities, greater civic participation, and lower rates of crime.¹¹

For many, the deduction for mortgage interest is associated with the American Dream of homeownership and any benefits that are linked to it. Yet empirical evidence suggests the mortgage interest deduction as currently structured may be ineffective at increasing homeownership rates.¹²

Fewer than half of all homeowners¹³—and about a quarter of tax filers¹⁴—claim the mortgage interest deduction. It is available only to homeowners who itemize deductions. For those who do claim the deduction, the benefit increases with the size of the mortgage—the bigger the mortgage, the greater the tax benefit. The benefit

also rises with a taxpayer's marginal tax rate, which, in part, explains why higher-income taxpayers—who likely would buy a house regardless of the tax treatment—receive a disproportionate share of the benefit.

As with many tax subsidies designed to encourage specific activities and achieve certain policy goals, the mortgage interest deduction has economic costs. It affects the allocation of capital across the economy: By effectively lowering the price of owner-occupied housing relative to other goods and services, this tax expenditure encourages investment in and consumption of housing over other types of investments, goods, and services.¹⁵ Finally, the deduction results in significant forgone revenue, not just at the federal level but also in states with tax codes that link to this federal tax expenditure.

The housing market collapse and the mortgage interest deduction

From 2007 to 2010, mortgage interest deduction claims and overall claim amounts declined significantly, the result of the collapse of the housing bubble, the drop in interest rates that followed—which made the deduction less valuable for new purchasers or those who refinanced into a lower-rate mortgage—and the Great Recession of 2007-2009 and its aftermath. These events affected states' claims differently.

The varying effects changed to some degree the geographic distribution of this deduction, suggesting that differences in economic conditions can affect how federal tax benefits are spread across states.

Before the onset of the housing crisis and the beginning of the Great Recession, the total mortgage interest deducted by tax filers hit its peak in 2007, resulting in \$543 billion in deductions and roughly \$85 billion in forgone revenue. Between 2007 and 2010, the total deduction amount fell 28 percent, and the number of claims declined by 12 percent.

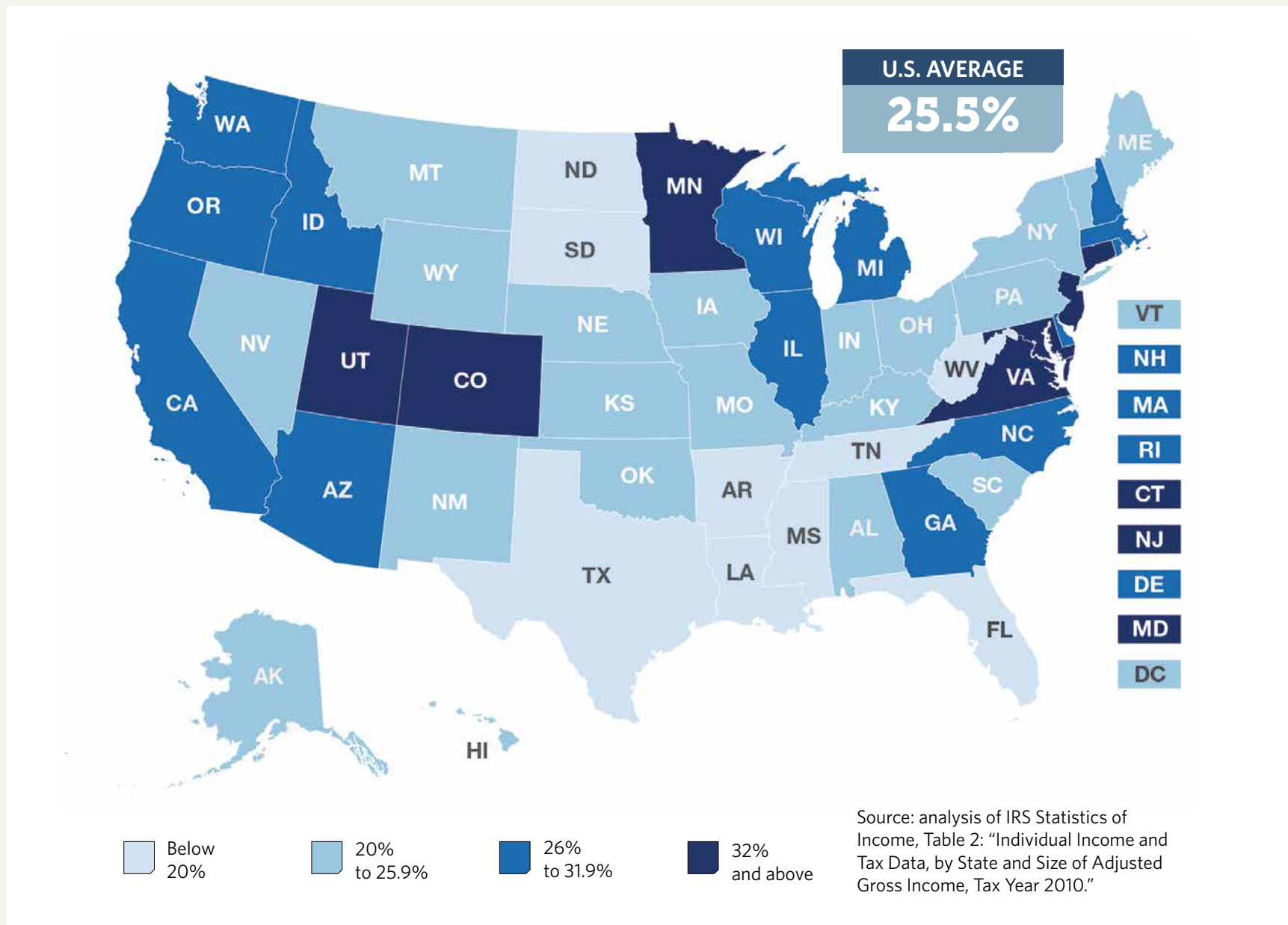
Nationally, the decrease in mortgage interest deduction claims lines up with the housing crisis and recession, but these events affected states to varying degrees. Although no region was particularly immune, the declines appear to have been most severe in the West and in the corridor stretching from the Southeast to the Great Lakes region, and less severe in the middle of the country west of the Great Lakes area.

Finding #1: Uneven Distribution Across States

MAP 1

Claim rates across states

Percentage of each state's tax filers who claim the mortgage interest deduction, 2010



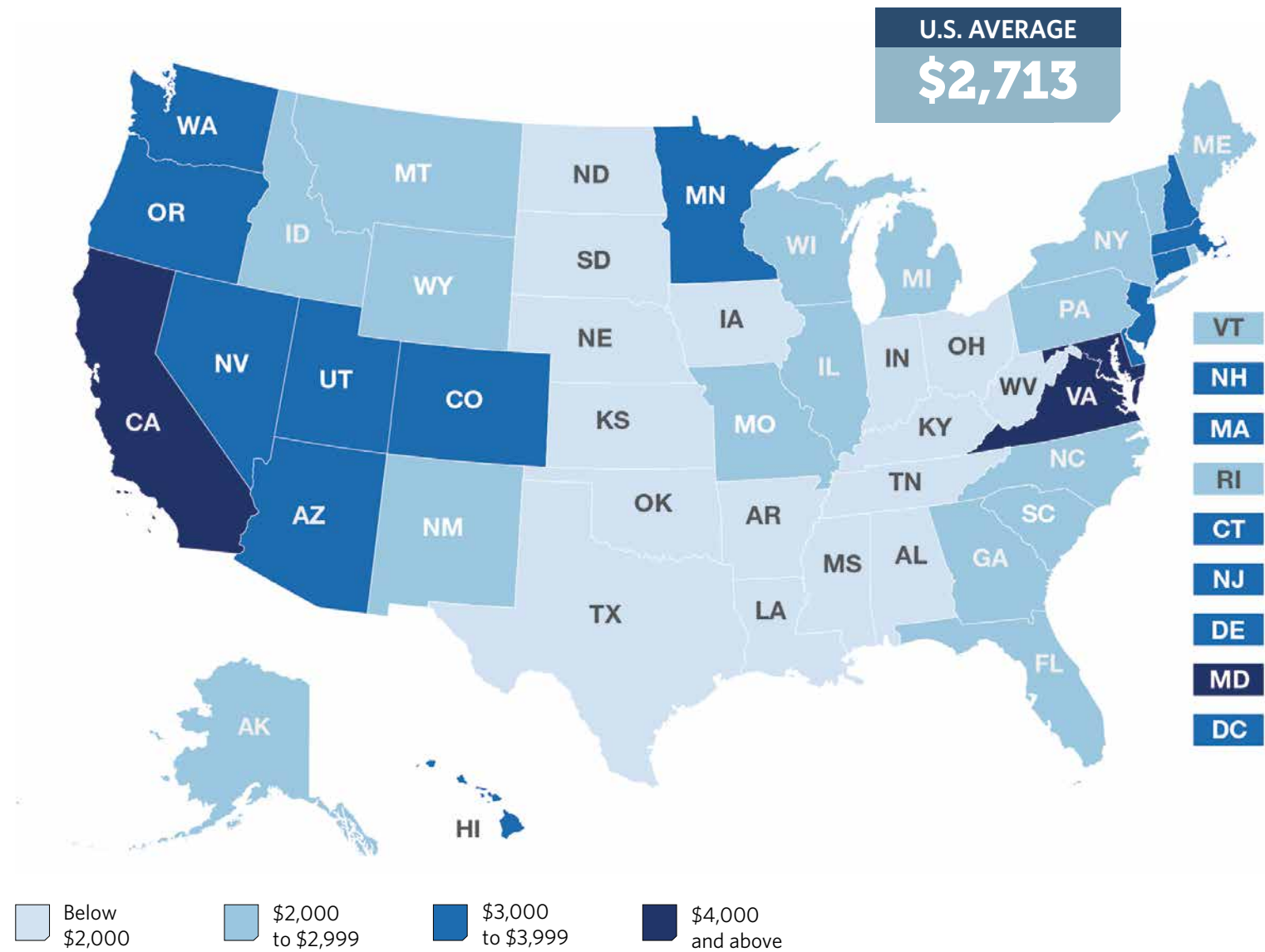
The percentage of tax filers deducting mortgage interest in 2010 ranged from a high of nearly 37 percent in Maryland to a low of 15 percent in West Virginia and North Dakota. States with the highest claim rates were concentrated along the East Coast and in parts of the West; those with the lowest claim rates were mostly in the South, particularly in the band from Texas to Mississippi and stretching up to West Virginia. (See Map 1.)

MAP 2

Average deduction amounts across states

Average mortgage interest deduction per tax filer, by state, 2010

The average mortgage interest deduction for all tax filers (not just those taking the deduction) in 2010 varied from a high of \$4,580 per tax filer in Maryland to a low of \$1,192 per tax filer in North Dakota.¹⁶ In general, states along the northern East Coast and in parts of the West had the highest average per-filer deduction amounts, and states in the South and Midwest had the lowest. (See Map 2.)



Note: The per-filer average is the average for all tax filers in an area, including those who do not claim the deduction.

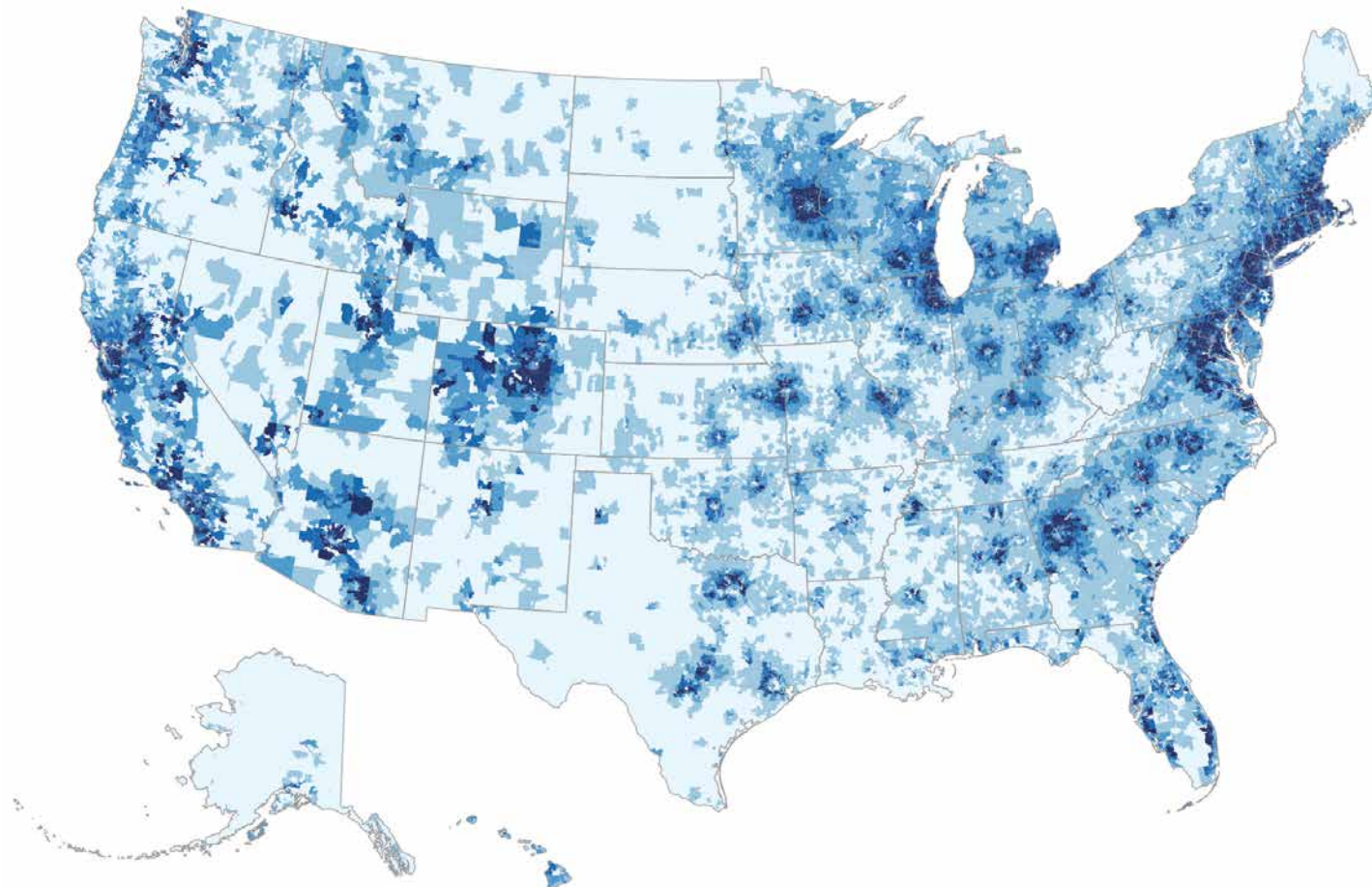
Source: analysis of IRS Statistics of Income, Table 2: "Individual Income and Tax Data, by State and Size of Adjusted Gross Income, Tax Year 2010."

Finding #2: Uneven Distribution Across Metropolitan Areas

MAP 3

Claim rates across ZIP codes

Percentage of each ZIP code's tax filers who claim the mortgage interest deduction, 2007



Below 10% 10% to 19.9% 20% to 29.9% 30% to 39.9% 40% and above

Note: Bottom category includes areas not covered by ZIP codes.

Source: analysis of IRS Statistics of Income, Individual Income Tax Statistics, ZIP Code Data, Tax Year 2007.

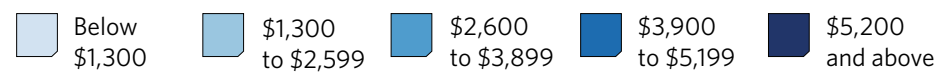
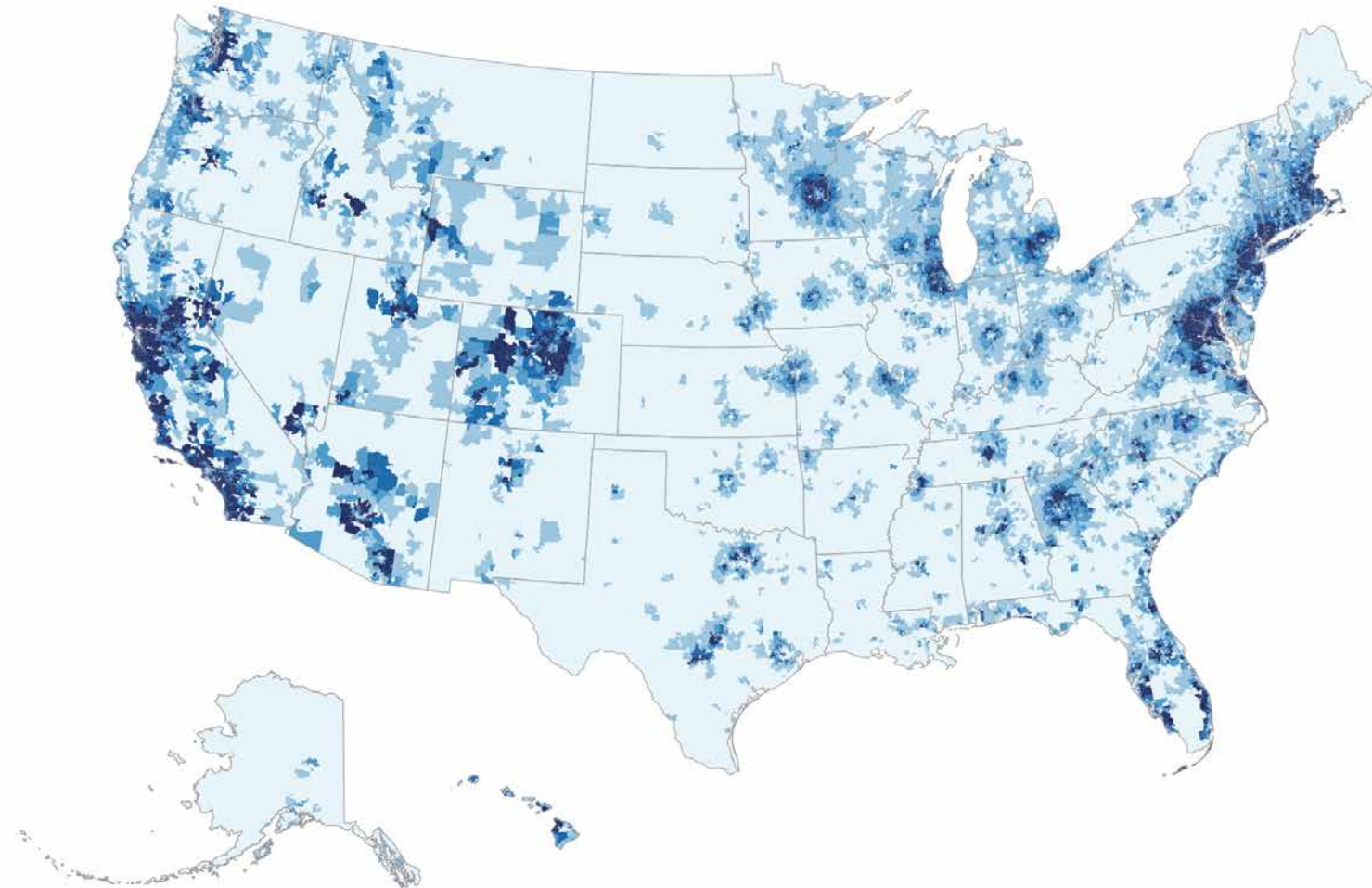
In 2007, tax filers in and around larger metropolitan areas (as measured by the number of tax filers in the area) generally claimed the mortgage interest deduction at higher rates than filers in less-populous areas. There were concentrations of high claim rates in and around major metropolitan areas throughout the country, especially along the Boston-Washington corridor. (See Map 3.)

MAP 4

Average deduction amounts across ZIP codes

Average mortgage interest deduction per tax filer, by ZIP code, 2007

In 2007, the average mortgage interest deduction for all tax filers (not just those taking the deduction) generally was higher in and around larger metropolitan areas, while less-populous areas tended to have lower average deductions. There were concentrations of high average deduction amounts in the Boston-Washington corridor, in and around metropolitan areas in California and Colorado, in certain metropolitan areas around the Great Lakes region, and in a handful of other major metropolitan areas in the rest of the country. (See Map 4.)



Note: The per-filer average is the average for all tax filers in an area, including those who do not claim the deduction. The bottom category includes areas not covered by ZIP codes.

Source: analysis of IRS Statistics of Income, Individual Income Tax Statistics, ZIP Code Data, Tax Year 2007.

Finding #3: Uneven Distribution Within States

The geographic concentration of the mortgage interest deduction among a relatively small number of metropolitan areas throughout the United States translates into an uneven distribution of the deduction *within* states.

This finding is confirmed by a closer look at the metropolitan-area claim rates and average deduction amounts in three representative states: North Carolina, Pennsylvania, and Texas.

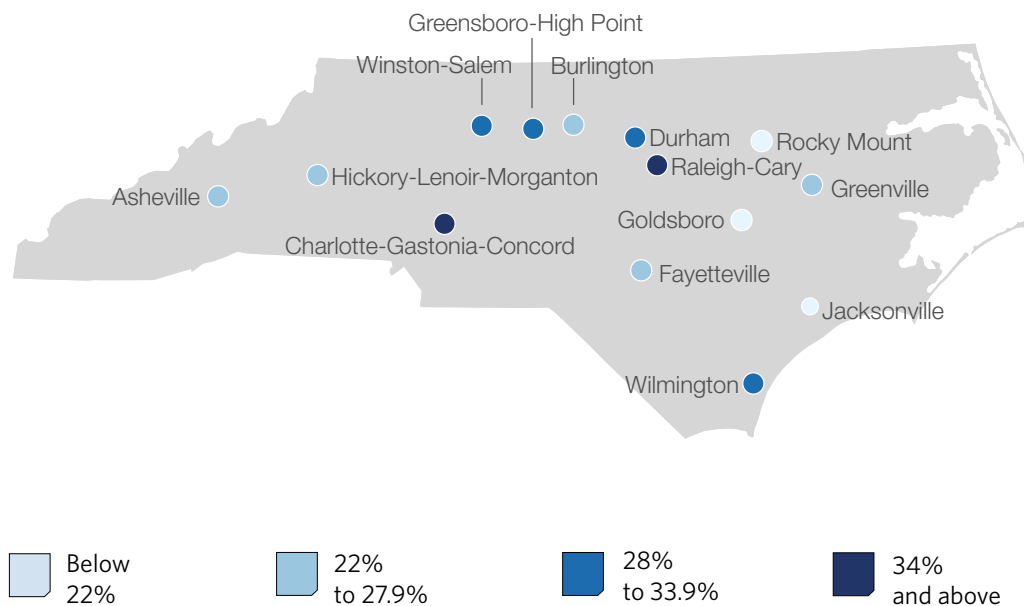
Across **North Carolina**, the deduction claim rates and average deduction amounts varied significantly. Both the rates and the amounts generally were highest in the larger metropolitan areas

(as measured by the number of tax filers), such as the Raleigh-Cary area, and lowest in the less-populous areas, such as Goldsboro.¹⁷ (See Maps 5 and 6.)

MAPS 5 | 6

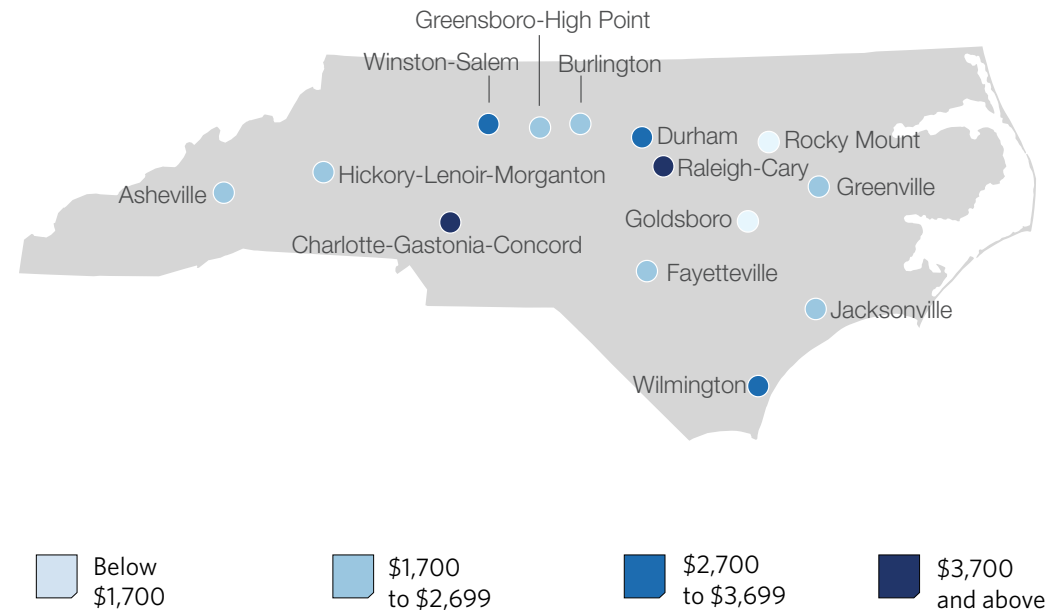
Distribution across North Carolina

Claim rates: Percentage of each metropolitan area's tax filers who claim the mortgage interest deduction, 2007



Source: analysis of IRS Statistics of Income, Individual Income Tax Statistics, ZIP Code Data, Tax Year 2007.

Deduction amounts: Average mortgage interest deduction per tax filer, by metropolitan area, 2007



Note: The per-filer average is the average for all tax filers in an area, including those who do not claim the deduction.

Source: analysis of IRS Statistics of Income, Individual Income Tax Statistics, ZIP Code Data, Tax Year 2007.

Pennsylvania's mortgage interest deduction claim rates and average deduction amounts ranged widely across its metropolitan areas. But

unlike North Carolina, the distribution did not line up according to the number of tax filers in each metropolitan area. Some of the state's larger areas, such

as the Pittsburgh area, had relatively low claim rates and average deduction amounts. Some of the moderately sized areas, such as the York-Hanover area,

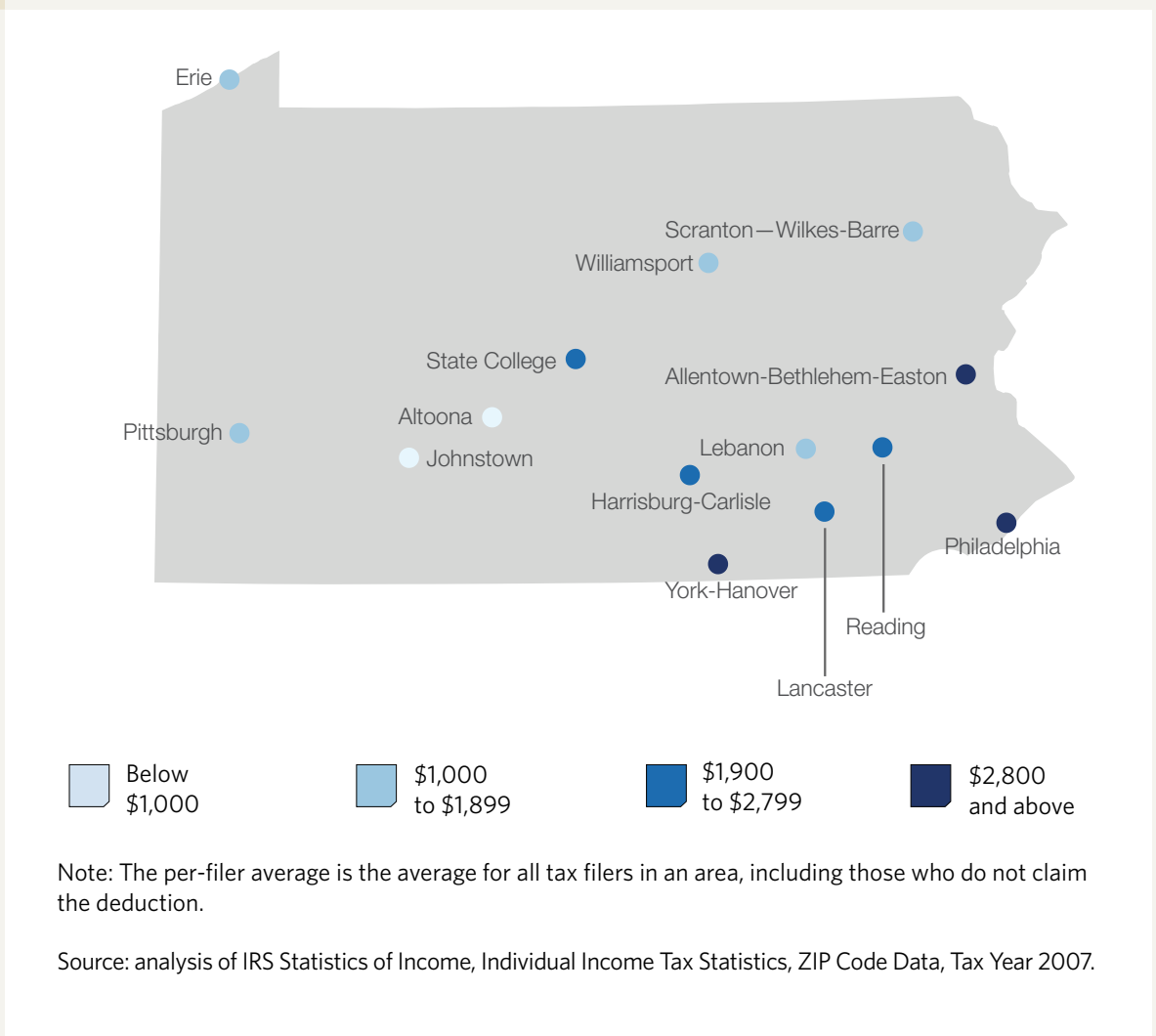
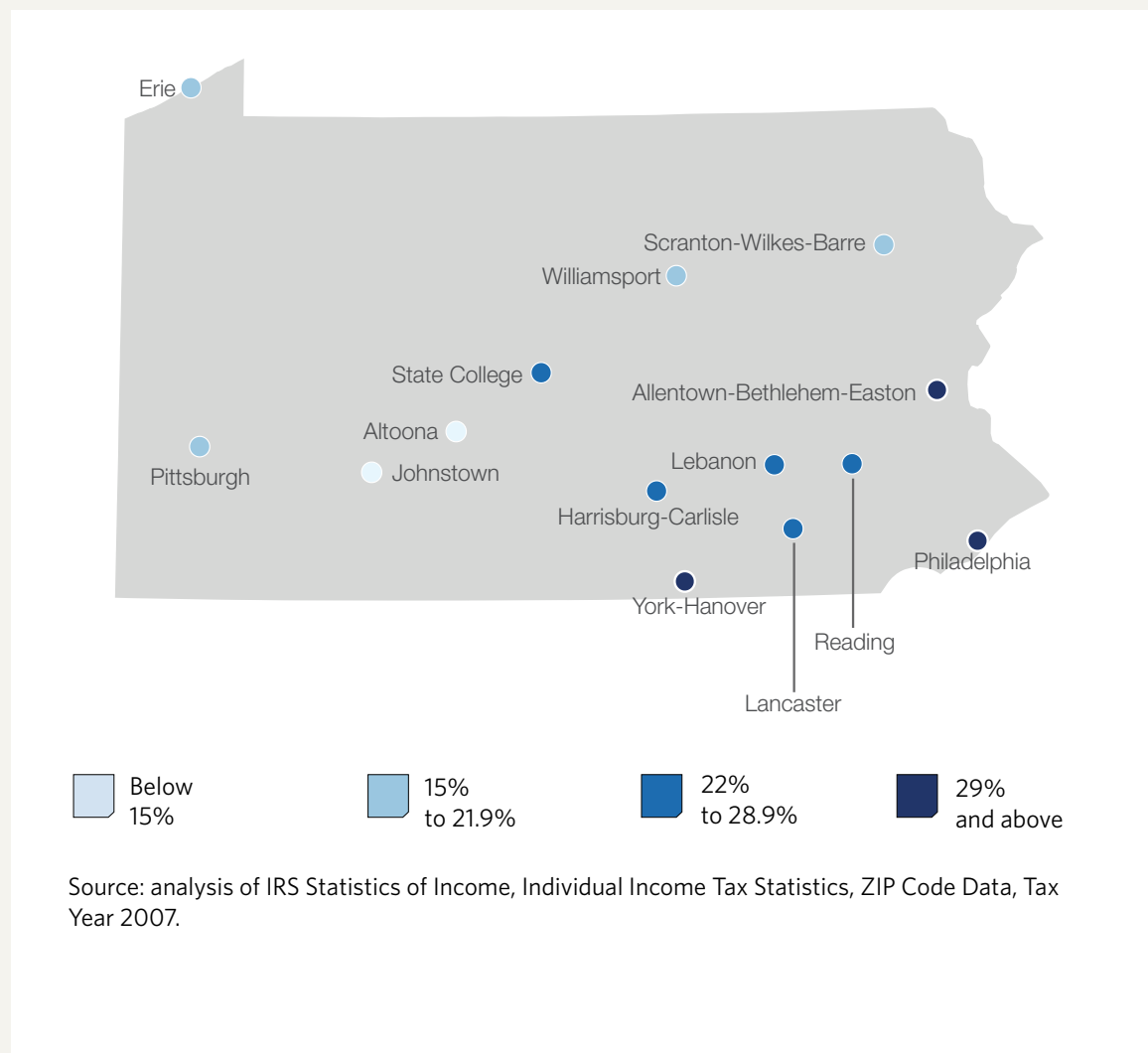
had relatively high claim rates and average deduction amounts. (See Maps 7 and 8.)

MAPS 7 | 8

Distribution across Pennsylvania

Claim rates: Percentage of each metropolitan area's tax filers who claim the mortgage interest deduction, 2007

Deduction amounts: Average mortgage interest deduction per tax filer, by metropolitan area, 2007



Texas had the greatest differences between the top and bottom claim rates and average deduction amounts, compared with North Carolina and Pennsylvania. The highest claim rate, in

the Austin-Round Rock area, was nearly four times the lowest rate, in Odessa, and the highest average deduction amount, also in the Austin area, was more than six times the lowest amount,

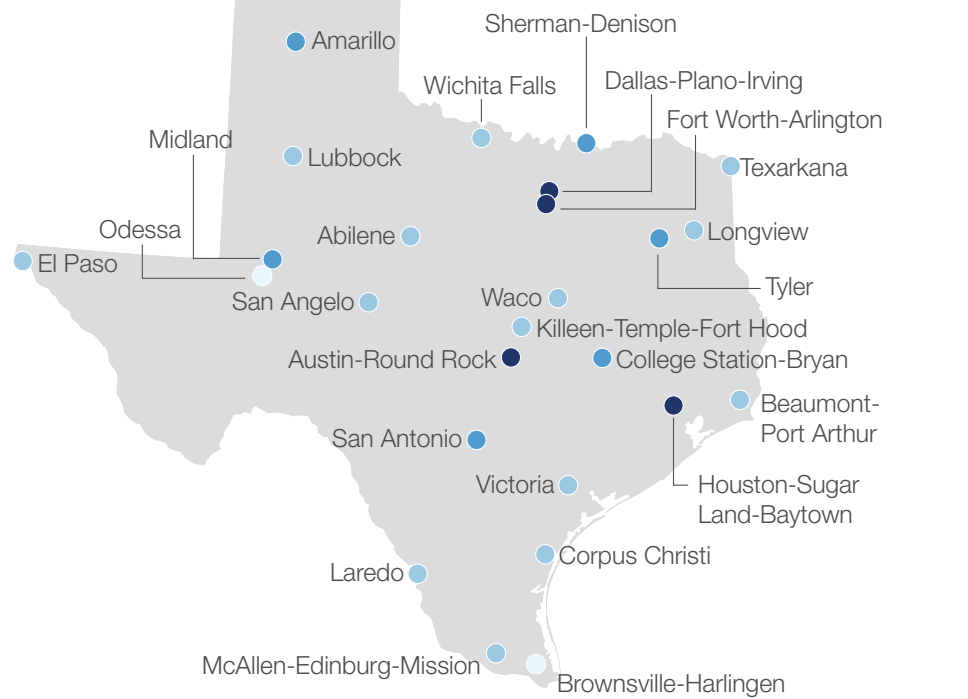
in Odessa. As in North Carolina, Texas' largest metropolitan areas, such as Dallas-Plano-Irving, had the highest claim rates and average deduction amounts, and smaller metropolitan

areas, such as San Angelo, generally had lower claim rates and amounts. (See Maps 9 and 10.)

MAPS 9 | 10

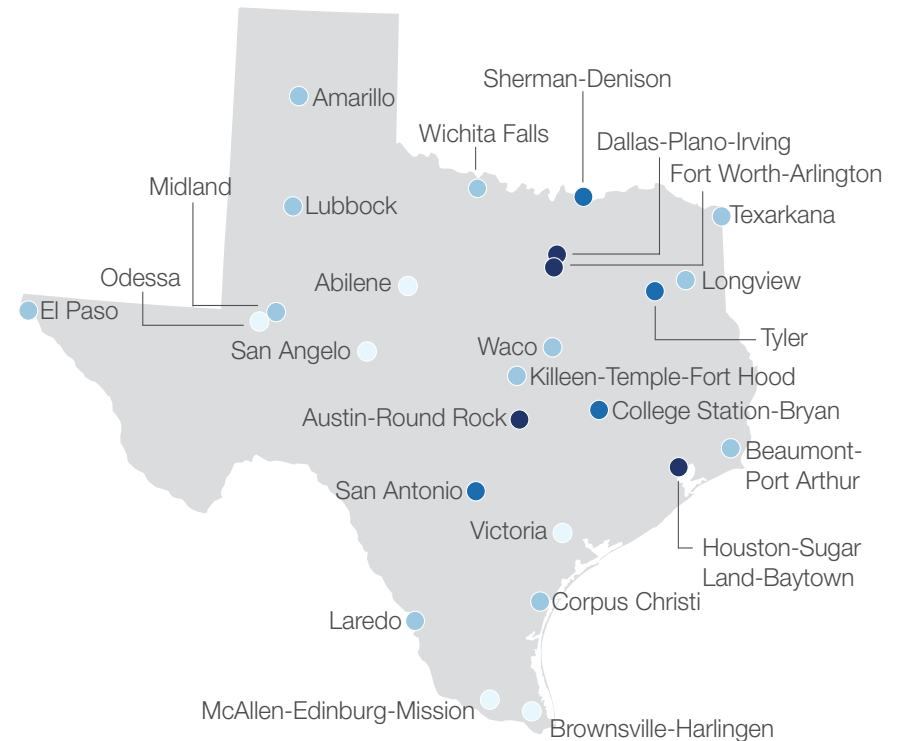
Distribution across Texas

Claim rates: Percentage of each metropolitan area's tax filers who claim the mortgage interest deduction, 2007



Source: analysis of IRS Statistics of Income, Individual Income Tax Statistics, ZIP Code Data, Tax Year 2007.

Deduction amounts: Average mortgage interest deduction per tax filer, by metropolitan area, 2007



Note: The per-filer average is the average for all tax filers in an area, including those who do not claim the deduction.

Source: analysis of IRS Statistics of Income, Individual Income Tax Statistics, ZIP Code Data, Tax Year 2007.

Methodology

This analysis uses Internal Revenue Service data from tax year 2010 on the number of tax filers, the number of mortgage interest deduction claims, the amount of interest deducted, and federal income taxes paid at the state level. It also uses the IRS' only release of comprehensive data on mortgage interest deduction claims, including the number of claims, at the ZIP code level. These data, for tax year 2007, allow for an examination of the within-state distribution of this federal deduction. This report does not analyze the many factors that could influence the geographic distribution of the deduction as currently structured, such as differences in income, housing costs, housing turnover rates, rental-vs.-homeownership rates across geographic areas, and others. (See Appendix II in the report for the full methodology.)

Endnotes

¹ Credits, exclusions, deferrals, and preferential rates are other types of tax expenditures. For a full list of federal income tax expenditures, see Pew's Tax Expenditure Database, pewstates.org/research/reports/tax-expenditure-database-85899429743.

² Office of Management and Budget, *Budget of the United States Government, Fiscal Year 2013, Analytical Perspectives*, Table 17-1, (Washington: U.S. Government Printing Office, 2013), whitehouse.gov/sites/default/files/omb/budget/fy2013/assets/receipts.pdf. Summing tax expenditures often provides a reasonably good estimate for the total cost of groups of tax expenditures, though it does not capture potential interactions among tax expenditures or behavioral responses if any single one is modified or repealed.

³ Under current law, tax filers can deduct interest paid on a mortgage up to \$1 million, including interest paid on second homes. They can also deduct interest paid on home equity loans up to \$100,000. These limits are halved for married filers who file separate returns.

⁴ The deduction estimate is for tax year 2011, the latest year for which the data are available. Internal Revenue Service, Statistics of Income, "Individual Income and Tax Data, by State and Size of Adjusted Gross Income, Tax Year 2011," *SOI Tax Stats-Historic Table 2*, accessed April 29, 2013, irs.gov/uac/SOI-Tax-Stats---Historic-Table-2. The forgone revenue estimate is for fiscal 2011. Office of Management and Budget, *Budget of the United States Government, Fiscal Year 2013*, whitehouse.gov/sites/default/files/omb/budget/fy2013/assets/spec.pdf. The Joint Committee on Taxation estimated the fiscal 2011 forgone revenue from the mortgage interest deduction to be \$78 billion. Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2011-2015*, JCS-1-12, Table 1 (Washington, Jan. 17, 2012), jct.gov/publications.html?func=startdown&id=4386. OMB's fiscal

2014 *Supplemental Materials* (Table 16-1) estimates the mortgage interest deduction would result in \$93 billion in forgone revenues in fiscal 2013 (Washington: U.S. Government Printing Office, 2013), whitehouse.gov/omb/budget/Supplemental. The JCT's estimate is \$70 billion for that year. Joint Committee on Taxation, *Estimates Of Federal Tax Expenditures For Fiscal Years 2012-2017*, JCS-1-13, Table 1 (Washington, D.C., Feb. 1, 2013), www.jct.gov/publications.html?func=startdown&id=4503.

⁵ According to U.S. Treasury estimates reported in the president's budget, the two larger tax expenditures in 2011 were the exclusion of employer-provided health insurance (\$163 billion) and the accelerated depreciation of machinery and equipment (\$119 billion). Office of Management and Budget, *Budget of the U.S. Government, Fiscal Year 2013*. The Joint Committee on Taxation estimated that in 2011 the deduction for mortgage interest ranked third behind the exclusion of employer-provided health insurance (\$109 billion) and reduced rates of tax on dividends and long-term capital gains (\$90 billion). Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2011-2015*.

⁶ Joint Committee on Taxation, *Estimate of Federal Tax Expenditures For Fiscal Years 2012-2017*, jct.gov/publications.html?func=startdown&id=4503; Office of Management and Budget, *Budget of the U.S. Government, Fiscal Year 2013*, whitehouse.gov/omb/budget/Supplemental; National Commission on Fiscal Responsibility and Reform, *The Moment of Truth*, December 2010, fiscalcommission.gov/sites/fiscalcommission.gov/files/documents/TheMomentofTruth12_1_2010.pdf; The Debt Reduction Task Force, *Restoring America's Future*, November 2010, bipartisanpolicy.org/sites/default/files/BPC%20FINAL%20REPORT%20FOR%20PRINTER%2002%2028%2011.pdf; The President's Advisory Panel on Federal Tax Reform, *Simple, Fair, and Pro-Growth: Proposals to Fix America's Tax*

System, November 2005, govinfo.library.unt.edu/taxreformpanel.

⁷ This report uses the most recently available data at the time of analysis. The analysis does not explore the many factors that could influence the current geographic distribution of this tax expenditure, such as differences in income, housing costs, housing turnover rates, rental-vs.-homeownership rates, and others.

⁸ Robert Carroll, John F. O'Hare, and Phillip L. Swagel, *Costs and Benefits of Housing Tax Subsidies*, The Pew Fiscal Analysis Initiative and Subsidyscope, June 2011, pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Economic_Mobility/Pew_Housing_Report.pdf.

⁹ The "Pease" limitation calculation is based on a household's income, not the amount of a household's total itemized deductions. See Thomas L. Hungerford, *Deficit Reduction: The Economic and Tax Revenue Effects of Personal Exemption Phaseout (PEP) and Limitation on Itemized Deductions (Pease)*, Congressional Research Service, Feb. 1, 2013, fas.org/sgp/crs/misc/R41796.pdf.

¹⁰ It is not clear, however, what the direction of causation is.

¹¹ Mark R. Lindblad, Kim R. Manturuk, and Roberto G. Quercia, "Sense of Community and Informal Social Control Among Lower Income Households: The Role of Homeownership and Collective Efficacy in Reducing Subjective Neighborhood Crime and Disorder," *American Journal of Community Psychology* 51, no. 1-2 (March 1, 2013); Kim Manturuk, Mark Lindblad, and Roberto G. Quercia, "Homeownership and Civic Engagement in Low-Income Urban Neighborhoods: A Longitudinal Analysis," *Urban Affairs Review* 48, no. 5 (May 7, 2012); William M. Rohe, Shannon Van Zandt, and George McCarthy, "The Social Benefits and Costs of Homeownership: A

Critical Assessment of the Research," in *Low Income Homeownership: Examining the Unexamined Goal* by Nicolas Paul Retsinas and Eric S. Belsky (Washington: Brookings Institution Press, 2002); Edward Glaeser and Denise DiPasquale, "Incentives and Social Capital: Are Homeowners Better Citizens?" *Journal of Urban Economics* 45, no. 2 (1999); Brian J. McCabe, "Are Homeowners Better Citizens? Homeownership and Community Participation in the United States," *Social Forces* (Jan. 7, 2013).

¹² Edward Glaeser and Jesse Shapiro, "The Benefits of the Home Mortgage Interest Deduction," *National Bureau of Economic Research: Tax Policy and the Economy* 17, (2003). Andrew Hanson, "Size of Home, Home Ownership, and the Mortgage Interest Deduction," *Journal of Housing Economics* 21, no. 3 (2012).

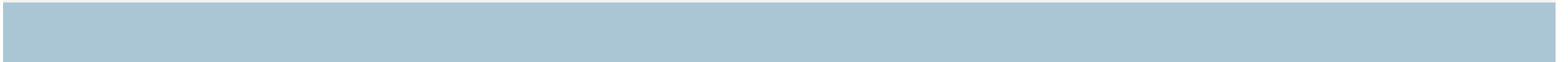
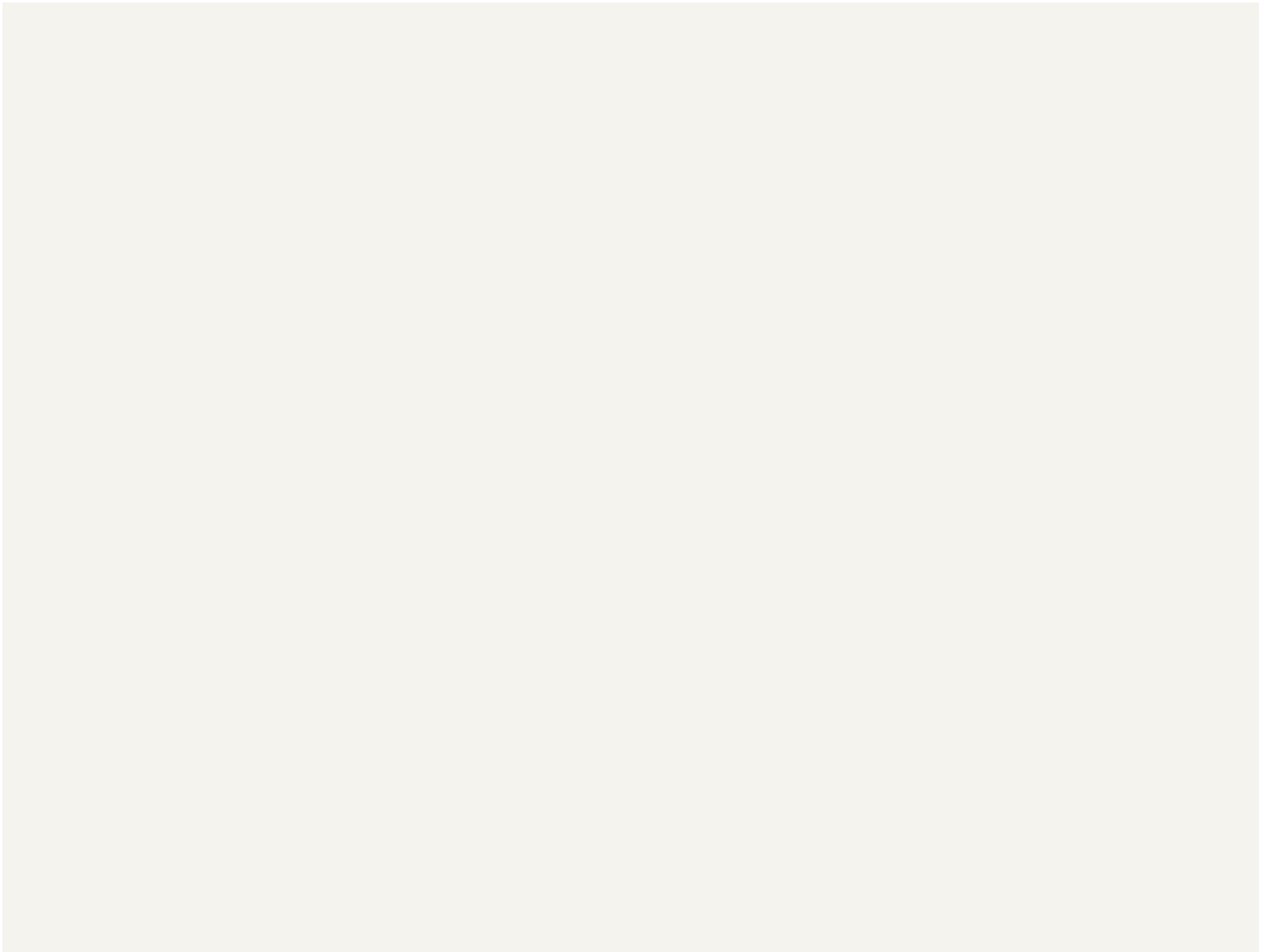
¹³ Carroll, O'Hare, and Swagel, *Costs and Benefits of Housing Tax Subsidies*.

¹⁴ Internal Revenue Service, Statistics of Income, "Individual Income and Tax Data, by State and Size of Adjusted Gross Income, Tax Year 2011," *SOI Tax Stats-Historic Table 2*, accessed April 29, 2013, irs.gov/uac/SOI-Tax-Stats---Historic-Table-2.

¹⁵ Carroll, O'Hare, and Swagel, *Costs and Benefits of Housing Tax Subsidies*.

¹⁶ Variation in the average deduction among filers claiming the deduction—the *per claimant* average—shows a similar picture of the uneven distribution of the mortgage interest deduction. For purposes of examining the geographic distribution, however, the average deduction per *filer*, not claimant, is a particularly useful metric because it enables a comparison of the aggregate impact of the deduction on each geographic area.

¹⁷ Areas are ranked by number of tax filers.



The Geographic Distribution of the Mortgage Interest Deduction



Objectives of the study

Tax filers across the United States deducted more than \$390 billion in mortgage interest from their incomes in 2010.¹ This resulted in roughly \$80 billion in forgone federal income tax revenue, making the mortgage interest deduction the second-largest federal tax expenditure that year.² Previous work by The Pew Charitable Trusts examined the distribution of the deduction across income groups, finding that most of its tax benefits accrue to middle- and upper-income households.³ This analysis examines another key aspect of the deduction that receives little attention: its geographic distribution.

Using Internal Revenue Service data on the number of tax filers (that is, tax returns), the number of mortgage interest deduction claims, the amount of interest deducted, and the federal income tax paid, this report analyzes the distribution of such claims across states in 2010. This is the most recent tax year for which state data on this tax expenditure were available at the time

of analysis. The report also uses ZIP code data from the IRS for 2007, the most recent year for which complete data at this level are available, to analyze the distribution of these claims *within* states.⁴

The geographic distribution of this tax expenditure skews heavily toward certain states, particularly along parts of the East Coast and in parts of the West. The distribution of claims for the deduction appears even more skewed at the metropolitan-area level, with tax filers in larger areas generally claiming the deduction at much higher rates and greater average amounts than filers in medium- and small-size areas. These findings are important for policymakers to understand as they consider changes to the mortgage interest deduction.

This report also looks at the geographic impact under two theoretical scenarios in which the mortgage interest deduction would be replaced by a new deduction not tied to homeownership and available to itemizers and non-

itemizers alike. The scenarios are used solely to demonstrate that changes to the deduction could substantially alter the distribution of federal tax deductions across geographic areas; they are not based on actual policy proposals currently under discussion. The scenarios show that depending on how changes to the mortgage interest deduction were structured, federal taxes could increase in some areas and decrease in others. These results could, in turn, affect economic activity both across and within states.

This report makes no recommendations; its purpose, rather, is to demonstrate that federal tax policy and changes to it could have varying results in the states.

The geographic distribution

In general, states with the most tax filers tend to have relatively high numbers of mortgage interest deduction claims and relatively large aggregate amounts of dollars deducted. California had the most tax filers in the country in 2010,

TABLE 1

States With the Most Tax Filers vs. States With the Most Mortgage Interest Deducted, 2010

States with the most federal tax filers (in millions)	States with the most mortgage interest deducted (billions of dollars)
California: 16.7	California: \$71.9
Texas: 11.0	New York: \$22.7
Florida: 9.6	Florida: \$20.9
New York: 9.3	Texas: \$19.9
Pennsylvania: 6.1	Illinois: \$16.6
Illinois: 6.0	New Jersey: \$15.7
Ohio: 5.4	Virginia: \$15.6
Michigan: 4.6	Pennsylvania: \$13.4
Georgia: 4.6	Maryland: \$12.8
New Jersey: 4.3	Washington: \$12.1

Note: See separate Data Appendix Tables 1 and 2 for detail on all states.

Source: IRS Statistics of Income, Table 2: "Individual Income and Tax Data, by State and Size of Adjusted Gross Income, Tax Year 2010."

at 16.7 million, as well as the highest number of claims, at 4.6 million. North Dakota, with the fourth-smallest number of filers (330,000), had the lowest number of claims (fewer than 50,000).⁵

California also had the highest amount of mortgage interest deducted—nearly \$72 billion in 2010, which was more than triple the amount claimed in any other state. (See Table 1.) North Dakota accounted for the least amount of interest deducted, about \$394 million.

New York, Florida, and Texas—all top-five states in terms of the number of tax filers—were also at the top of the list for total deductions in dollars claimed. By contrast, among the 10 states with the greatest number of tax filers, Ohio, Michigan, and Georgia did *not* make the top-10 list of states with the largest amount of dollars claimed. The coastal states of Virginia, Maryland, and Washington, all with lower numbers of filers, took their place in the top-10 list for dollars claimed under the mortgage interest deduction.

The fact that the ordering of states in terms of the total amount of mortgage interest deducted does not completely line up according to each state’s tax filer population suggests that the deduction is not evenly distributed across the states—and that there could be other factors in the geographic distribution of this deduction. Although this analysis does not address the many factors that could influence the geographic distribution of the mortgage interest deduction as currently structured, such as differences in income, housing costs, housing turnover rates, and rental-vs.-homeownership rates across areas, it shows that by various measures the distribution of this tax expenditure is skewed toward certain geographic areas.

Measuring the geographic distribution of the mortgage interest deduction

There are various ways to measure how mortgage interest deduction claims are distributed across areas. This analysis focuses on two:

- The percentage of all tax filers within an area who claim the deduction—the claim rate.
- The average amount of the deduction per filer for each area—calculated by dividing the total amount of deductions claimed in a given area by the area’s total number of tax filers, including those who do not claim the deduction.

Analyses of the mortgage interest deduction often focus on the average deduction amount per *claimant*—that is, the average deduction among filers actually claiming the deduction. (Those figures are reported in the separate Data Appendix Table 2.) For purposes of examining the geographic distribution, however, the average deduction per *filer*, not claimant, is a particularly useful metric because it enables a comparison of the aggregate impact of the deduction on each geographic area. Therefore, this analysis focuses on the per-filer measure.

TABLE 2

Percentage of State’s Tax Filers Who Claim the Mortgage Interest Deduction in Selected States, 2010

States with the highest percentage of tax filers claiming the deduction	States with the lowest percentage of tax filers claiming the deduction
Maryland: 36.8%	West Virginia: 15.0%
Connecticut: 34.3%	North Dakota: 15.0%
Virginia: 33.2%	South Dakota: 15.5%
Colorado: 32.8%	Mississippi: 17.2%
Minnesota: 32.7%	Louisiana: 17.8%

Notes: U.S. average: 25.5%. See separate Data Appendix Table 1 for detail on all states.

Source: analysis of IRS Statistics of Income, Table 2: “Individual Income and Tax Data, by State and Size of Adjusted Gross Income, Tax Year 2010.”

The distribution of the mortgage interest deduction at the state level

Nationally, just over one-quarter of tax filers (25.5 percent) claimed the mortgage interest deduction in 2010. That figure, however, ranged from a high of 36.8 percent of Maryland filers to a low of 15 percent in West Virginia. (See Table 2.)

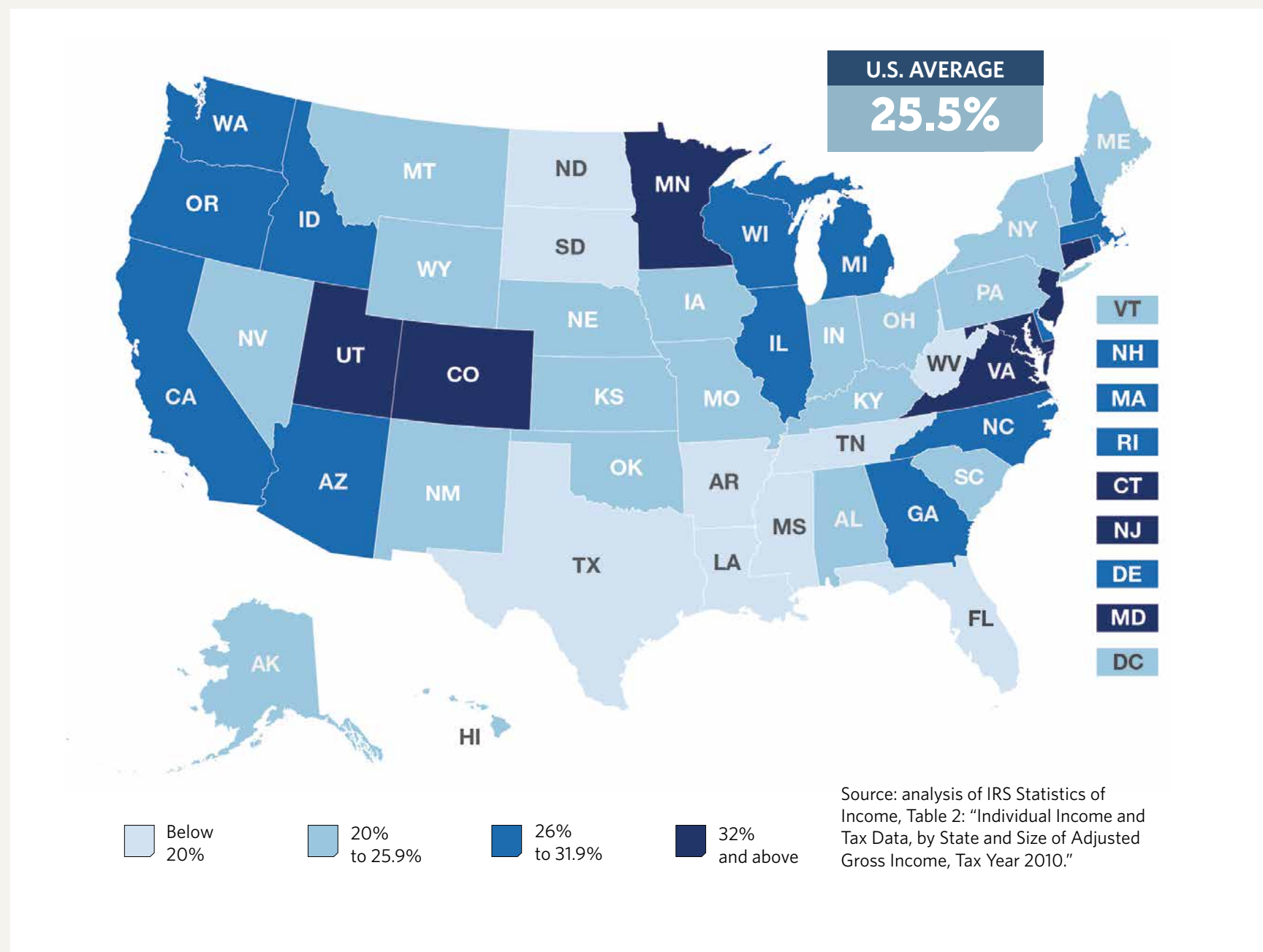
In all, 23 states had claim rates above the national average, and 27 states and the District of Columbia had rates below it. States with the highest rates were concentrated along parts of the East Coast and in parts of the West, and also included Minnesota. (See separate Data Appendix Table 1 for detail on all states.) States with the lowest rates were mostly in the South, particularly in the band from Texas to Mississippi and stretching up to West Virginia. (See Map 1.)

In addition to having the highest claim rate, Maryland had the largest average deduction per filer in 2010, at \$4,580. That was nearly four times the lowest average deduction of \$1,192, in North Dakota, and nearly 70 percent more than the national average deduction of \$2,713. (See Table 3.)

MAP 1

Claim rates across states

Percentage of each state's tax filers who claim the mortgage interest deduction, 2010



In all, 18 states and the District of Columbia had an average deduction per filer that was higher than the national average, and 32 states had a lower average. (See separate Data Appendix Table 2 for detail on all states.)

Like Maryland, states with the largest average mortgage interest deduction per filer were significantly above the national average. High average deductions per filer in 2010 were largely concentrated along the East Coast and in parts of the West. Low average deductions were generally concentrated among states in the South and Midwest. (See Map 2.)

Alternative measures of the geographic distribution of the mortgage interest deduction show similar, though not identical, concentrations of these claims. For instance, one way to assess differences across areas is to compare the average deduction amount for tax filers claiming the deduction. At \$15,755, the average deduction per claimant in California was more than double the

lowest average of \$7,177 in Iowa, and nearly 50 percent more than the national average of \$10,640. (See separate Data Appendix Table 2 for detail on all states.)

Other states on the West Coast and in the Southwest, as well as East Coast states, also had high per-claimant averages. In all, 14 states and the District of Columbia had an average deduction per claimant higher than the national average; 36 states had a lower average per claimant. Like California, those states at the top of the distribution substantially exceeded the national average.

Comparing each state's share of the national total number of mortgage interest deduction claimants with its share of the total number of tax filers is another way to assess the distribution of this tax expenditure. Maryland had the greatest differential: Its share of total claimants (2.8 percent) was 44 percent higher than its share of all tax filers (1.9 percent). In all, 23 states accounted for a higher share of claimants compared with

their share of all U.S. tax filers in 2010. The states with the largest differentials were mostly on the Northeast coast and in parts of the West. By contrast, West Virginia's share of all claimants, at 0.3 percent, was 41 percent lower than its share of filers, at 0.5 percent. (See separate Data Appendix Table 1 for detail on all states.)

Another way to measure the geographic distribution of the deduction is to compare each state's share of total mortgage interest dollars deducted with its share of total federal income taxes paid. By this measure, the distribution of the mortgage interest deduction was skewed primarily toward states on the West Coast and in the Southwest. For instance, Utah's share of total mortgage interest deducted in 2010 (about 1 percent) was 68 percent greater than its share of total taxes paid (about 0.6 percent). By contrast, even though New York and Texas each accounted for a relatively large dollar amount of claims, their shares of total dollars claimed were

TABLE 3

Average Mortgage Interest Deduction per Tax Filer in Selected States, 2010

States with the highest average deductions per filer	States with the lowest average deductions per filer
Maryland: \$4,580	North Dakota: \$1,192
California: \$4,311	West Virginia: \$1,220
Virginia: \$4,179	Mississippi: \$1,314
Colorado: \$3,850	South Dakota: \$1,334
Washington: \$3,811	Arkansas: \$1,456

Notes: The per-filer average is the average for all tax filers in an area, including those who do not claim the deduction. U.S. average: \$2,713. See separate Data Appendix Table 2 for detail on all states.

Source: analysis of IRS Statistics of Income, Table 2: "Individual Income and Tax Data, by State and Size of Adjusted Gross Income, Tax Year 2010."

MAP 2

Average deduction amounts across states

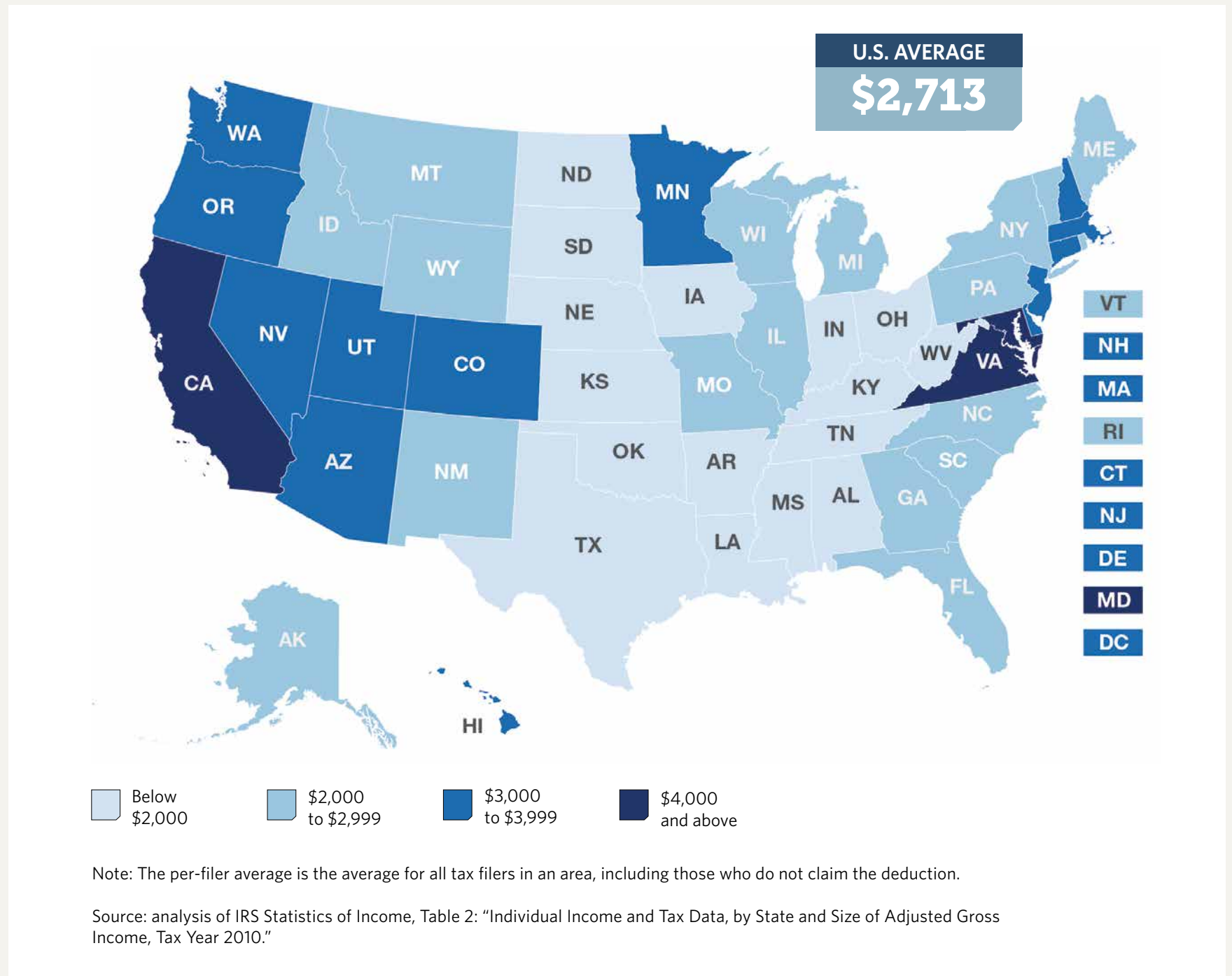
Average mortgage interest deduction per tax filer, by state, 2010

much lower than their share of total federal personal income taxes paid.

In all, 24 states accounted for a higher share of mortgage interest deduction dollars claimed relative to their share of taxes paid, and 26 states and the District of Columbia accounted for a lower share of total dollars claimed compared with their share of all federal personal income taxes paid. (See separate Data Appendix Table 2 for detail on all states.)

The uneven distribution across states

By various measures, the state distribution of the mortgage interest deduction is skewed. Although the distribution varies according to which of the measures is used, all show clear concentrations in certain regions. In particular, claim rates and average deduction amounts tend to be highest along the East Coast and in parts of the West, and lowest in the South and Midwest.



The changing value of the mortgage interest deduction and the housing crisis

Before the onset of the housing crisis and the beginning of the Great Recession in December 2007, the total mortgage interest deducted by tax filers hit its peak that year, resulting in \$543 billion in deductions and roughly \$85 billion in forgone revenue.⁶ Between 2007 and 2010, the total amount deducted fell 28 percent, and the number of claims declined by 12 percent.

The recession and the collapse of the housing bubble largely drove the decline in deduction dollars claimed and the number of filers claiming the deduction. Nationally, home prices began falling near the end of 2007, and they had dropped by more than 16 percent by the first quarter of 2010.⁷ Over the same period, average interest rates on a 30-year, fixed-rate mortgage fell to 4.69 percent in 2010 from 6.34 percent in 2007, making the deduction less valuable for new purchasers or those who refinanced into a lower-rate mortgage.⁸ Besides price and interest rate declines, the number of monthly foreclosures remained above 100,000 from 2008 through 2010, peaking at more than 200,000 in April 2009.⁹

In addition to the turmoil in housing markets, from 2007 to 2010 the national unemployment rate more than doubled, to 9.3 percent in December 2010 from 4.6 percent in January 2007.¹⁰ Although unemployment rates are not the official measure of a recession, they represent how workers are faring in the economy. Higher unemployment rates link to mortgage interest deduction claims in at least two ways. First, if workers become unemployed, then they earn less, which might mean they cannot afford to pay as much for housing. Second, becoming unemployed can increase the chances of losing a home to foreclosure.

Nationally, the decrease in mortgage interest deduction claims lines up with the housing crisis and recession, but these events affected states to varying degrees. No region was immune, but the declines appear to have been most severe in the West and in the corridor stretching from the Southeast to the Great Lakes region, and less severe in the middle of the country west of the Great Lakes area. (See Map 3 and Map 4 for the percentage change in number of

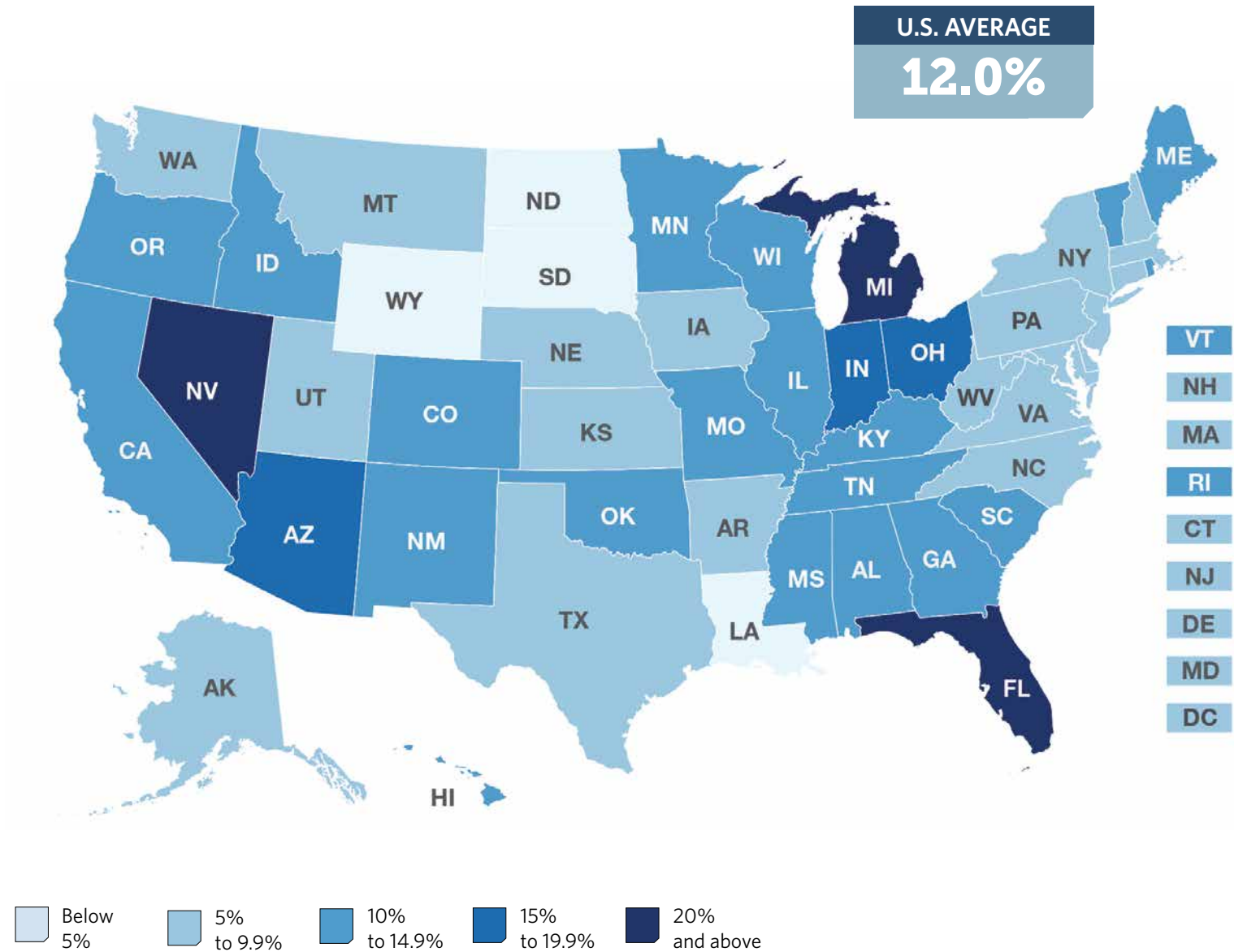
MAP 3

The housing market collapse and the mortgage interest deduction

Number of Claims: Percentage decline in total number of mortgage interest deduction claims, by state, 2007-2010

claimants and the percentage change in deduction dollars claimed from 2007 to 2010.)

States with the largest increases in unemployment, the highest foreclosure rates, and the largest declines in home prices experienced some of the largest declines in the number of claimants and dollars claimed.¹¹ Nevada had the largest drop in home prices, and its unemployment rate tripled. The state also had by far the largest decline in total dollars claimed, 49.3 percent, and the second-largest drop in number of claims, 24.4 percent. (See separate Data

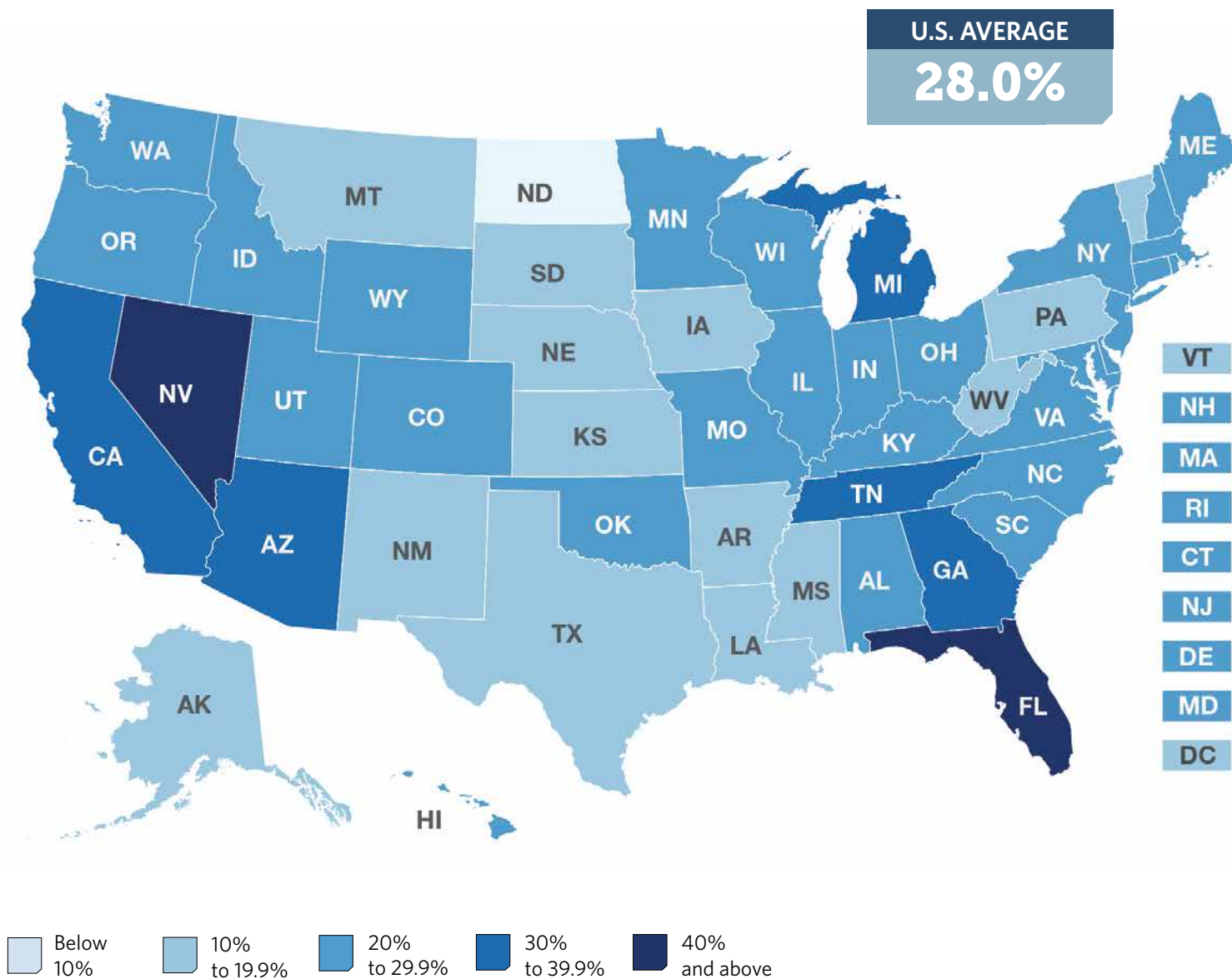


Source: analysis of IRS Statistics of Income, Table 2: "Individual Income and Tax Data, by State and Size of Adjusted Gross Income," Tax Years 2007 and 2010.

MAP 4

The housing market collapse and the mortgage interest deduction

Dollars Deducted: Percentage decline in total amount of mortgage interest dollars deducted, by state, 2007-2010



Appendix Table 3 for detail on all states.)

By contrast, home prices rose in North Dakota between 2007 and 2010, and the unemployment rate increased just slightly, primarily because of the state’s energy boomlet. These trends help explain its relatively modest declines in the dollars claimed (7.3 percent) and number of claims (1.2 percent)—even against a backdrop of the general recession and falling interest rates.

Source: analysis of IRS Statistics of Income, Table 2: “Individual Income and Tax Data, by State and Size of Adjusted Gross Income,” Tax Years 2007 and 2010.

The distribution of the mortgage interest deduction at the metropolitan level

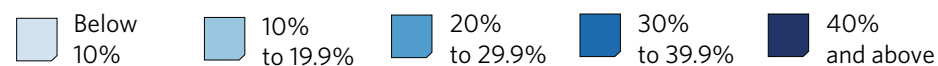
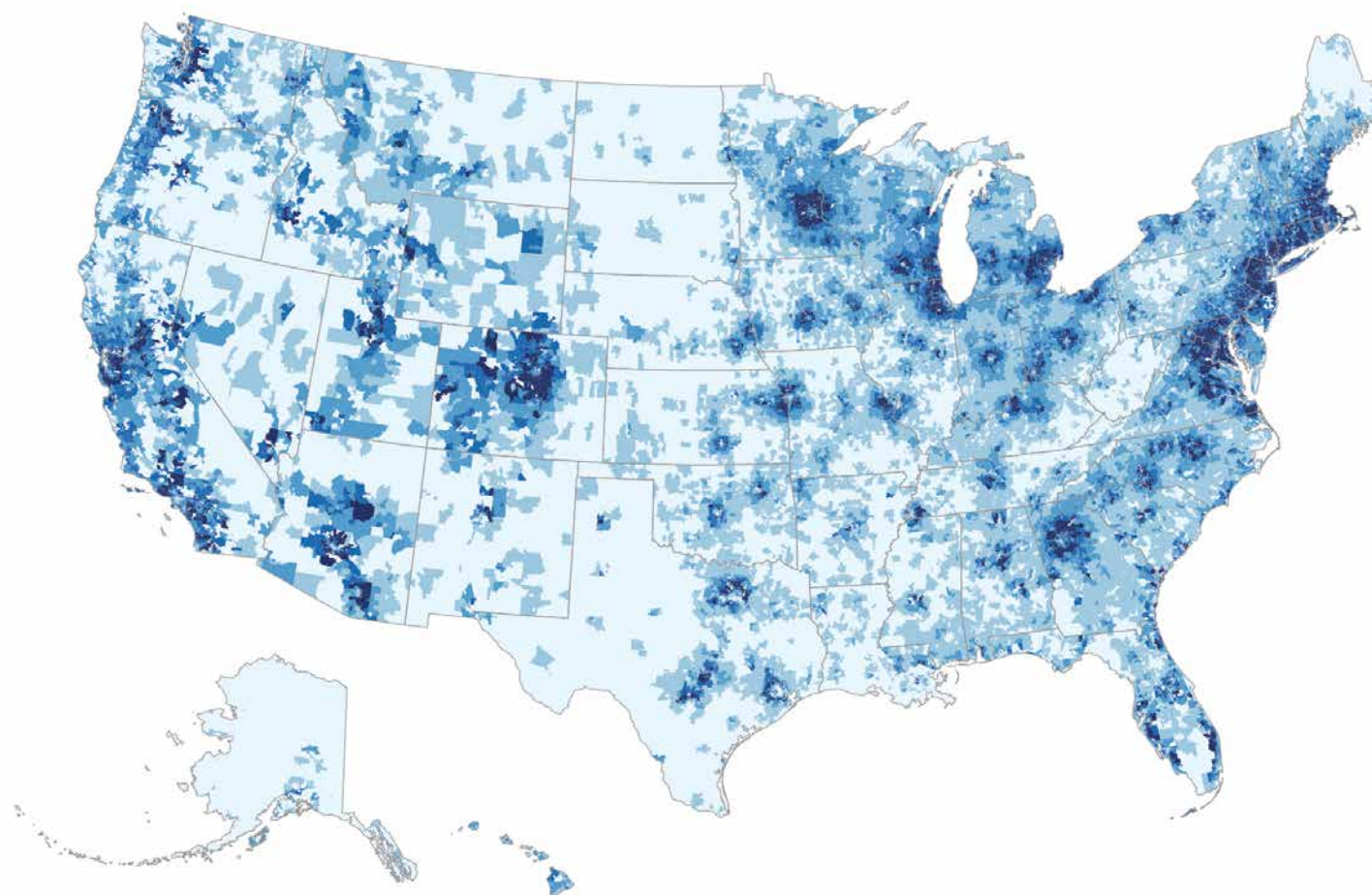
Because mortgage interest deduction claims are partly driven by the local housing market, it is worth investigating differences in claims within states. The IRS provided the only release of comprehensive data on this tax expenditure at the ZIP code level for tax year 2007, offering a unique, albeit pre-recession, snapshot of the geographic distribution of the deduction at the sub-state level.¹² This permits an analysis of differences in claim rates and average deduction amounts among metropolitan areas across the country, and it provides a picture of the distribution of the deduction *within* states.

The analysis includes all 381 metropolitan statistical areas or metropolitan divisions as defined by the U.S. Census Bureau—hereafter referenced as metropolitan areas.¹³ The data come from the ZIP code files compiled by the IRS, and they are aggregated to the metropolitan level using geographic information system software, which manages and analyzes geographic data.¹⁴

MAP 5

Claim rates across ZIP codes

Percentage of each ZIP code's tax filers who claim the mortgage interest deduction, 2007



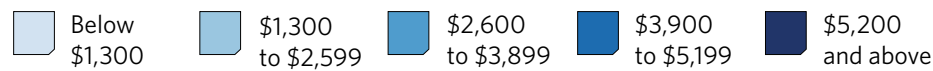
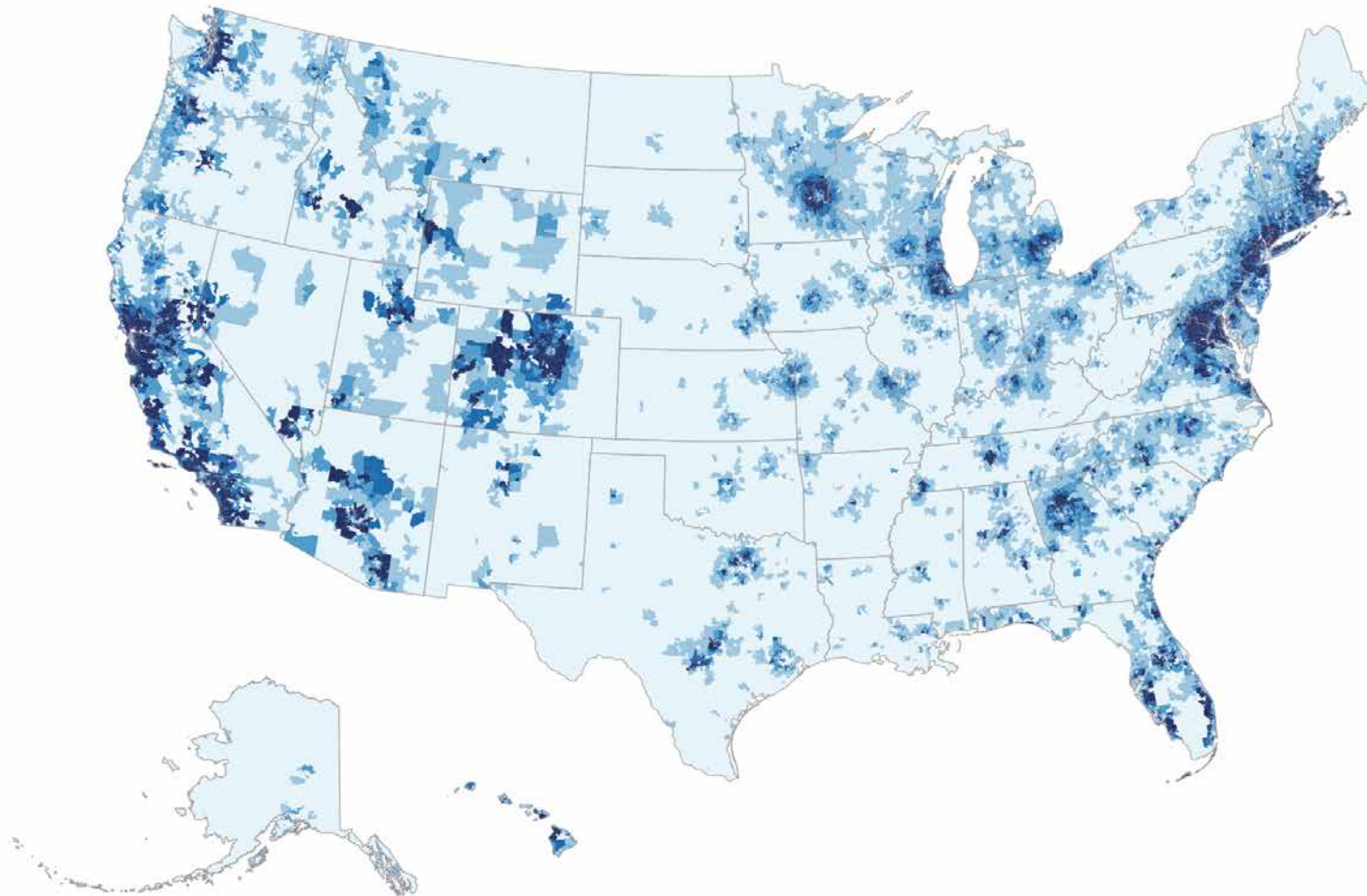
Note: Bottom category includes land areas not covered by ZIP codes.

Source: analysis of IRS Statistics of Income, Individual Income Tax Statistics, ZIP Code Data, Tax Year 2007.

MAP 6

Average deduction amounts across ZIP codes

Average mortgage interest deduction per tax filer, by ZIP code, 2007



Notes: The per-filer average is the average for all tax filers in an area, including those who do not claim the deduction. The bottom category includes land areas not covered by ZIP codes.

Source: analysis of IRS Statistics of Income, Individual Income Tax Statistics, ZIP Code Data, Tax Year 2007.

There are substantially greater differences between the top and bottom claim rates and average deduction amounts at the metropolitan-area level than at the state level. For instance, in terms of the percent of tax filers claiming the mortgage interest deduction, there is a difference of 21.8 percentage points between the highest and lowest states (36.8 percent in Maryland and 15 percent in West Virginia). At the metropolitan-area level, however, the difference is a much larger 33.1 percentage points—40.6 percent in the Bethesda-Gaithersburg-Frederick area in Maryland and 7.5 percent in Odessa, TX.

Similarly, the difference between the highest and lowest average per filer among states is \$3,388 (\$4,580 in Maryland and \$1,192 in North Dakota) while at the metropolitan-area level, the difference is \$7,191—between the average deduction of \$7,659 in the San Jose-Sunnyvale-Santa Clara area in California and the average deduction of \$468 in Odessa. (See separate Data Appendix Tables 4 and 5 for detail on all metropolitan areas.)

Less than half (161 of 381) of the metropolitan areas had claim rates above the national average rate of 27 percent in 2007. In general, areas with relatively large numbers of tax filers had above-average claim rates, and areas with fewer filers had below-average claim rates. The Bethesda-Gaithersburg-Frederick metropolitan area, just outside Washington, had the largest percentage of filers claiming the deduction, at 40.6 percent. The Odessa area had the lowest, at 7.5 percent. (See Table 4.)

Notably, some of the largest metropolitan areas (as measured by the number of tax filers), including the New York-White Plains, NY-Wayne, NJ, area and the Los Angeles-Long Beach-Glendale area in California, had below-average claim rates, while some smaller areas, such as Boulder, CO, and Bend, OR, had above-average claim rates. Metropolitan areas along the Boston-Washington corridor had some of the highest claim rates, as did the areas of Minneapolis-St. Paul, suburban Chicago,

suburban Detroit, Atlanta, Denver, and others in the West. (See Map 5.)

In 87 metropolitan areas—about 23 percent of the total—the average deduction per filer exceeded the national average of \$3,508 in 2007. As with claim rates, deduction amounts tended to be higher in larger metropolitan areas and lower in the smaller areas. The highest average deductions were concentrated in a few metropolitan areas, notably in California, along the Boston-Washington corridor, and in certain areas in the Great Lakes region and the West. (See Map 6.)

The metropolitan areas with lowest average deductions per filer were concentrated in the Midwest, the South, and in Texas. The \$468 average in the Odessa area in Texas was about one-sixteenth the size of the average of \$7,659 in the San Jose-Sunnyvale-Santa Clara area in California. (See Table 5.)

TABLE 4

Percentage of Area's Tax Filers Who Claim the Mortgage Interest Deduction in Selected Metropolitan Areas, 2007

Metropolitan areas with the highest percentages of tax filers claiming the deduction	Metropolitan areas with the lowest percentages of tax filers claiming the deduction
Bethesda-Gaithersburg-Frederick, MD: 40.6%	Odessa, TX: 7.5%
Minneapolis-St. Paul-Bloomington, MN-WI: 40.4%	Brownsville-Harlingen, TX: 8.8%
Lake County-Kenosha County, IL-WI: 39.8%	Johnstown, PA: 9.9%
Washington-Arlington-Alexandria, DC-VA-MD-WV: 39.8%	Wheeling, WV-OH: 10.1%
Warren-Troy-Farmington Hills, MI: 37.6%	San Angelo, TX: 10.4%

Notes: U.S. average: 27.0%. See separate Data Appendix Table 4 for details on all metropolitan areas.

TABLE 5

Average Mortgage Interest Deduction per Tax Filer in Selected Metropolitan Areas, 2007

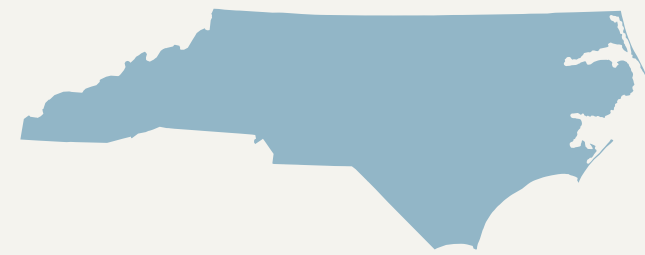
Metropolitan areas with the highest average deductions per filer	Metropolitan areas with the lowest average deductions per filer
San Jose-Sunnyvale-Santa Clara, CA: \$7,659	Odessa, TX: \$468
Oakland-Fremont-Hayward, CA: \$7,366	Johnstown, PA: \$656
Oxnard-Thousand Oaks-Ventura, CA: \$7,267	Brownsville-Harlingen, TX: \$680
Santa Ana-Anaheim-Irvine, CA: \$6,901	Danville, IL: \$701
Bethesda-Gaithersburg-Frederick, MD: \$6,775	Wheeling, WV-OH: \$735

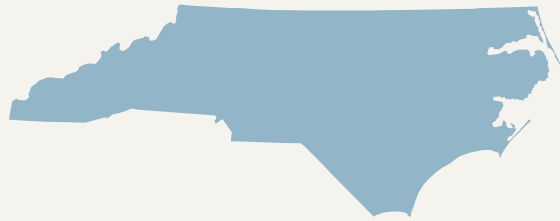
Notes: The per-filer average is the average for all tax filers in an area, including those who do not claim the deduction. U.S. average: \$3,508. See separate Data Appendix Table 5 for detail on all metropolitan areas.

Source: analysis of IRS Statistics of Income, Individual Income Tax Statistics, ZIP Code Data, Tax Year 2007.

A closer look at three states

A close examination within state boundaries suggests substantial variation within states in the percentage of each metropolitan area's tax filers who claimed the mortgage interest deduction and in the average deduction amounts. In this section, we examine the distribution of the federal deduction within three states—North Carolina, Pennsylvania, and Texas—chosen in part because of their size and geographic representation, and because they had relatively stable housing markets during the recent downturn. The 2007 distributions in those states are therefore likely to be generally representative of later years.¹⁵





North Carolina

In North Carolina, the percentage of each metropolitan area’s filers who claimed the deduction in 2007—the claim rate—was generally highest in the largest metropolitan areas and lowest in the smallest areas (as measured by the tax-filer population). The claim rates in the two largest metropolitan areas, Raleigh and Charlotte, were 37.3 percent and 36 percent, respectively, compared with a rate of 20.2 percent in Goldsboro, the smallest. (See Table 6.)

With some exceptions, tax filers in the larger metropolitan areas of the state also generally had higher average deductions than filers in smaller areas. The average deduction in the Charlotte metropolitan area was \$3,912 per filer, about two and a half times Goldsboro’s average of \$1,567. (Maps 7 and 8 show the distribution of claim rates and average deduction amounts within North Carolina.)

TABLE 6

North Carolina: Percentage of Each Metropolitan Area’s Tax Filers Who Claim the Mortgage Interest Deduction and Average Deduction per Tax Filer, 2007

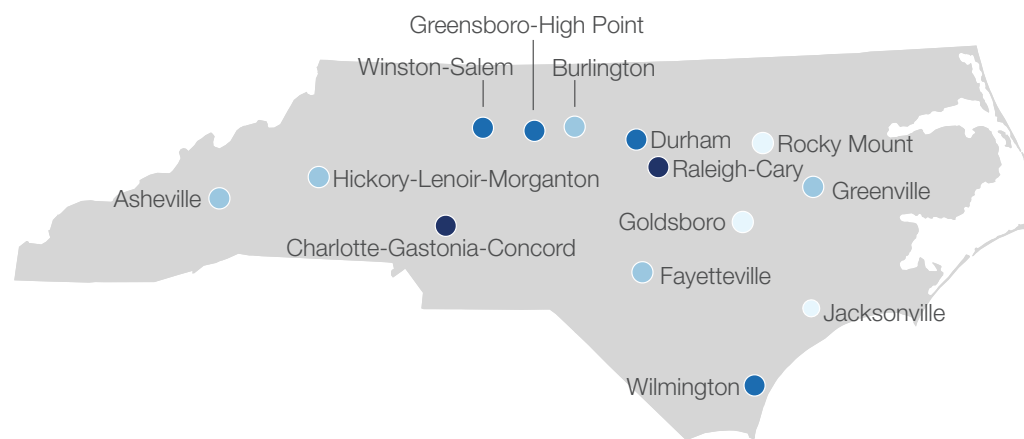
Metropolitan area	Percentage claiming the deduction	Average deduction per filer
Charlotte-Gastonia-Concord, NC-SC	36.0	\$3,912
Raleigh-Cary	37.3	\$4,008
Greensboro-High Point	28.7	\$2,633
Durham	32.2	\$3,265
Winston-Salem	30.4	\$2,727
Asheville	25.4	\$2,536
Hickory-Lenoir-Morganton	22.9	\$1,926
Wilmington	31.1	\$3,526
Fayetteville	23.6	\$1,945
Greenville	24.8	\$2,092
Rocky Mount	21.2	\$1,606
Jacksonville	20.8	\$1,942
Burlington	25.9	\$2,248
Goldsboro	20.2	\$1,567

Note: The per-filer average is the average for all tax filers in an area, including those who do not claim the deduction. Areas are ordered largest to smallest by number of tax filers.

Source: analysis of IRS Statistics of Income, Individual Income Tax Statistics, ZIP Code Data, Tax Year 2007.

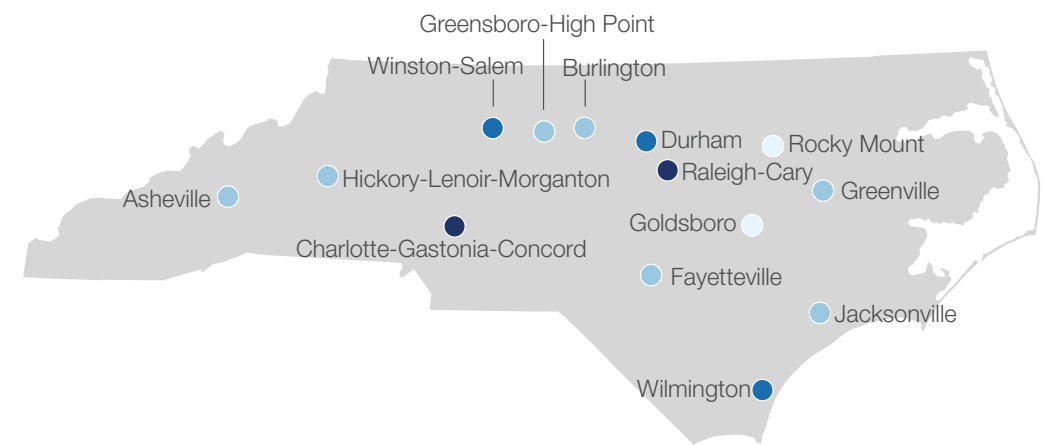
Distribution across North Carolina

Claim rates: Percentage of each metropolitan area's tax filers who claim the mortgage interest deduction, 2007



Source: analysis of IRS Statistics of Income, Individual Income Tax Statistics, ZIP Code Data, Tax Year 2007.

Deduction amounts: Average mortgage interest deduction per tax filer, by metropolitan area, 2007



Note: The per-filer average is the average for all tax filers in an area, including those who do not claim the deduction.

Source: analysis of IRS Statistics of Income, Individual Income Tax Statistics, ZIP Code Data, Tax Year 2007.



Pennsylvania

Compared with North Carolina, Pennsylvania had greater ratios between the highest and lowest claim rates and average deduction amounts. In 2007, the claim rate in the York-Hanover metropolitan area, at 31 percent, was just over three times the 9.9 percent rate in the Johnstown area. The highest average deduction, \$3,302 in the Philadelphia metropolitan area, was about five times the lowest—\$656, in the Johnstown area. (See Table 7.)

In contrast to North Carolina, Pennsylvania’s distributions of claim rates and average deduction amounts were not as closely related to the size of metropolitan areas. Specifically, some of Pennsylvania’s larger areas, most notably the Pittsburgh area, had relatively low claim rates and average deduction amounts, and some moderately sized areas, such as the York and Reading areas, had relatively high claim rates and average deduction amounts. (See Maps 9 and 10 for the distribution of claim rates and average amounts within Pennsylvania.)

TABLE 7

Pennsylvania: Percentage of Each Metropolitan Area’s Tax Filers Who Claim the Mortgage Interest Deduction and Average Deduction per Tax Filer, 2007

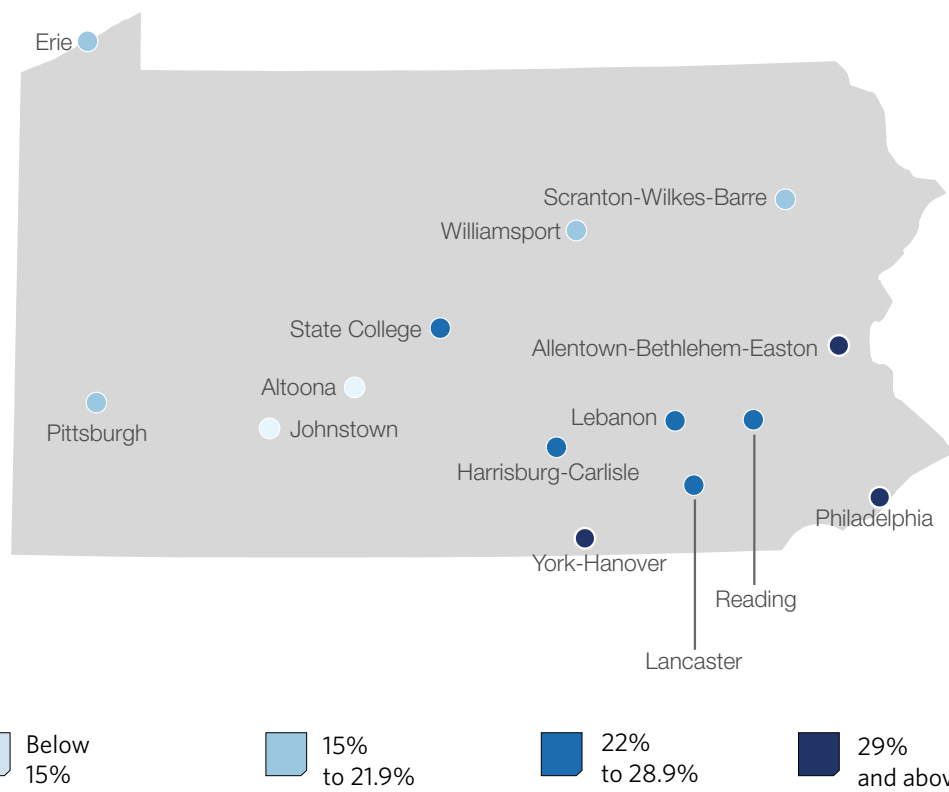
Metropolitan area	Percentage claiming the deduction	Average deduction per filer
Philadelphia	30.0	\$3,302
Pittsburgh	21.2	\$1,684
Allentown-Bethlehem-Easton, PA-NJ	29.9	\$2,976
Scranton-Wilkes-Barre	17.0	\$1,313
Harrisburg-Carlisle	26.6	\$2,170
Lancaster	26.8	\$2,284
Reading	27.5	\$2,392
York-Hanover	31.0	\$2,815
Erie	18.0	\$1,259
Lebanon	23.0	\$1,848
Johnstown	9.9	\$656
Altoona	13.2	\$980
State College	24.1	\$2,148
Williamsport	18.6	\$1,274

Note: The per-filer average is the average for all tax filers in an area, including those who do not claim the deduction. Areas are ordered largest to smallest by number of tax filers.

Source: analysis of IRS Statistics of Income, Individual Income Tax Statistics, ZIP Code Data, Tax Year 2007.

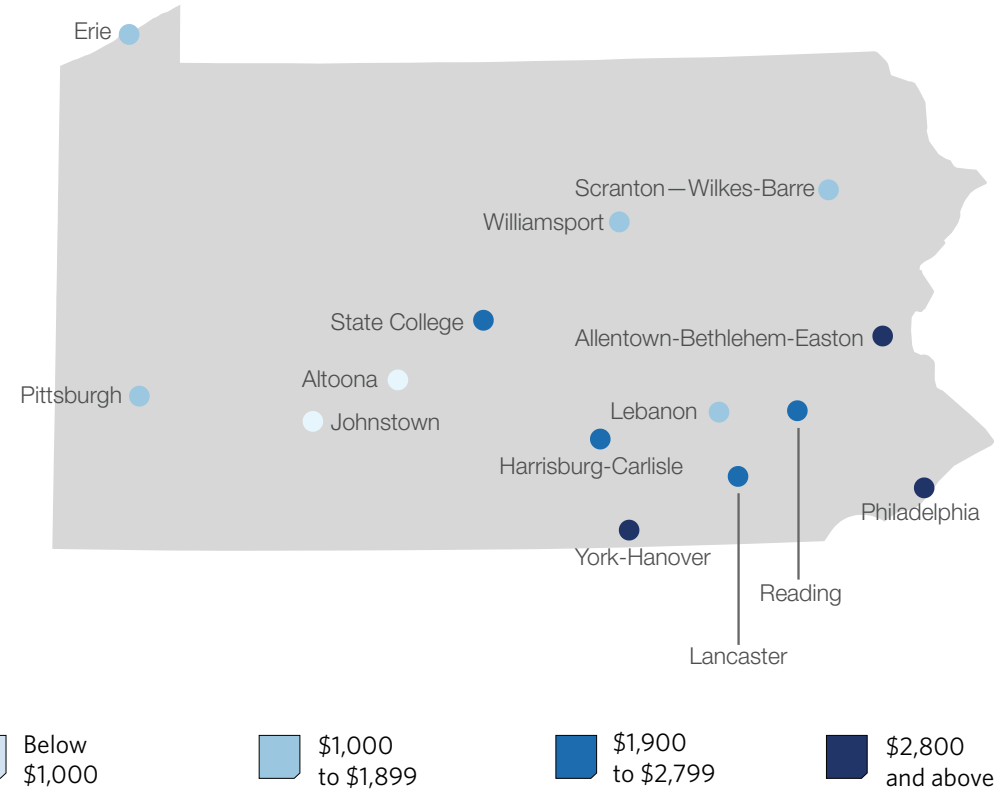
Distribution across Pennsylvania

Claim rates: Percentage of each metropolitan area's tax filers who claim the mortgage interest deduction, 2007



Source: analysis of IRS Statistics of Income, Individual Income Tax Statistics, ZIP Code Data, Tax Year 2007.

Deduction amounts: Average mortgage interest deduction per tax filer, by metropolitan area, 2007



Note: The per-filer average is the average for all tax filers in an area, including those who do not claim the deduction.

Source: analysis of IRS Statistics of Income, Individual Income Tax Statistics, ZIP Code Data, Tax Year 2007.



Texas

As with North Carolina, Texas' largest metropolitan areas had some of the state's highest mortgage interest deduction claim rates and per-filer average deduction amounts in 2007, while many of the state's smallest areas had some of the lowest claim rates and deduction amounts. (See Maps 11 and 12 for the distribution of claim rates and average amounts within Texas.) Of the three states, Texas had the greatest ratios between the top and bottom claim rates and average deduction amounts. The state's highest claim rate, 28.1 percent in the Austin-Round Rock area, was nearly four times the lowest rate of 7.5 percent in the Odessa area. (See Table 8.)

The ratio between the highest and lowest average deduction amounts in the state was even more dramatic than the ratio between the highest and lowest claim rates. The average deduction amount per filer in the Austin-Round Rock area, at \$2,945, was about six times the \$468 average deduction amount in the Odessa area, a factor similar to the ratio between the highest and lowest deductions among Pennsylvania's metropolitan areas.

Note: The per-filer average is the average for all tax filers in an area, including those who do not claim the deduction. Areas are ordered largest to smallest by number of tax filers.

Source: analysis of IRS Statistics of Income, Individual Income Tax Statistics, ZIP Code Data, Tax Year 2007.

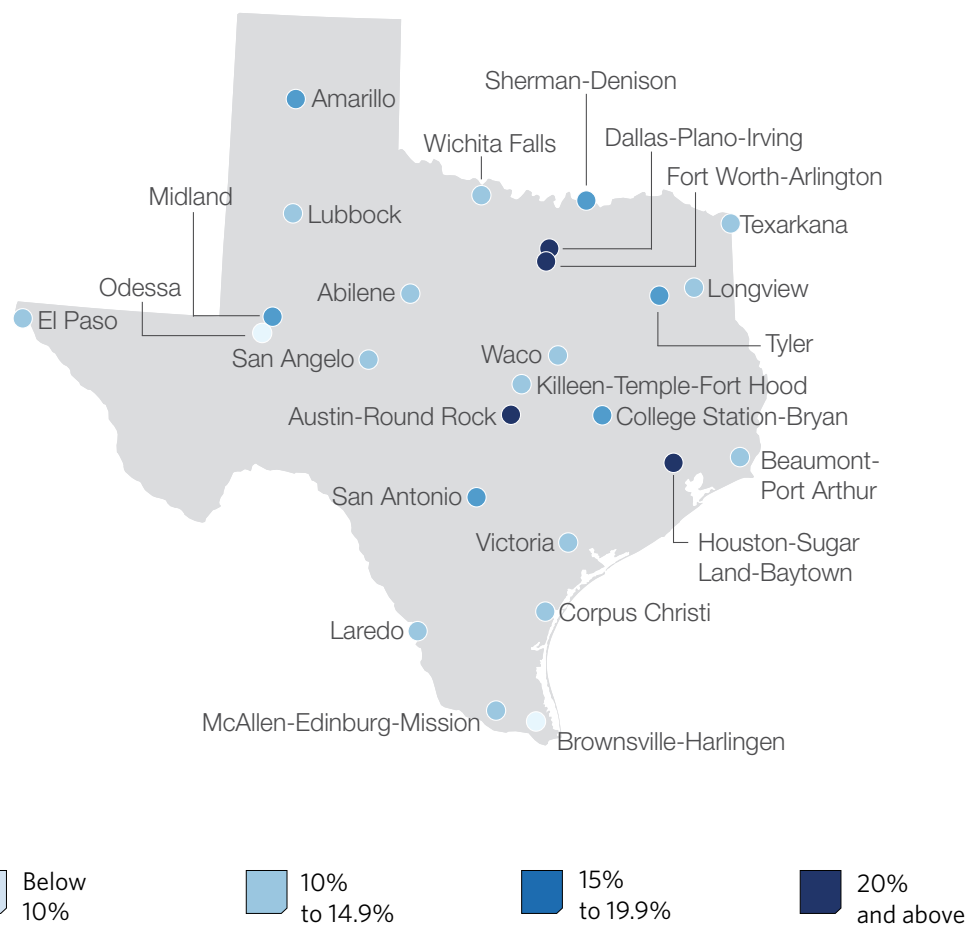
TABLE 8

Texas: Percentage of Each Metropolitan Area's Tax Filers Who Claim the Mortgage Interest Deduction and Average Deduction per Tax Filer, 2007

Metropolitan area	Percentage claiming the deduction	Average deduction per filer
Houston-Sugar Land-Baytown	23.1	\$2,142
Dallas-Plano-Irving	25.5	\$2,657
San Antonio	19.3	\$1,752
Fort Worth-Arlington	25.5	\$2,316
Austin-Round Rock	28.1	\$2,945
El Paso	12.8	\$968
McAllen-Edinburg-Mission	10.4	\$788
Corpus Christi	13.5	\$1,077
Beaumont-Port Arthur	12.6	\$871
Brownsville-Harlingen	8.8	\$680
Killeen-Temple-Fort Hood	14.7	\$1,179
Lubbock	14.5	\$1,120
Amarillo	15.9	\$1,206
Waco	12.7	\$1,031
Laredo	11.4	\$1,021
Tyler	17.4	\$1,487
College Station-Bryan	15.8	\$1,328
Longview	13.1	\$932
Abilene	10.8	\$768
Wichita Falls	11.9	\$843
Midland	15.4	\$1,236
Texarkana, TX-Texarkana, AR	11.8	\$900
Odessa	7.5	\$468
Sherman-Denison	15.7	\$1,303
San Angelo	10.4	\$760
Victoria	10.5	\$748

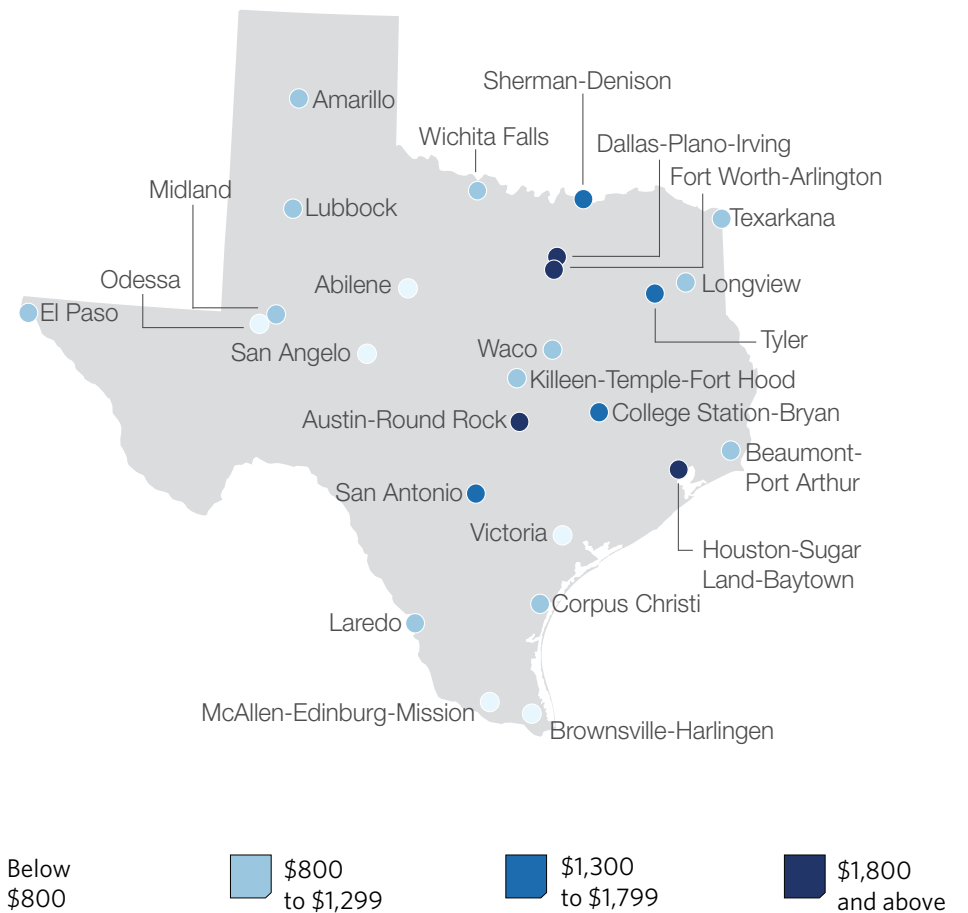
Distribution across Texas

Claim rates: Percentage of each metropolitan area's tax filers who claim the mortgage interest deduction, 2007



Source: analysis of IRS Statistics of Income, Individual Income Tax Statistics, ZIP Code Data, Tax Year 2007.

Deduction amounts: Average mortgage interest deduction per tax filer, by metropolitan area, 2007



Note: The per-filer average is the average for all tax filers in an area, including those who do not claim the deduction.

Source: analysis of IRS Statistics of Income, Individual Income Tax Statistics, ZIP Code Data, Tax Year 2007.

The uneven distribution across metropolitan areas

The examination of the geographic distribution of claims across metropolitan areas in 2007 shows that both the claim rates and average deduction amounts tend to be highest in and around major metropolitan areas, especially along the Boston–Washington corridor and in certain areas of the Great Lakes region and parts of the West. Areas with a large number of tax filers tend to have higher claim rates and average deduction amounts, but that is not always the case.

The concentration of high claim rates and deduction amounts in and around a relatively small number of major metropolitan areas throughout the country translated into uneven distributions within states. The ratios between the top and bottom claim rates and average deduction amounts were much starker in some states than in others.

Analysis of theoretical changes to the mortgage interest deduction

Two scenarios

The previous section of this report highlights the skewed distribution of the federal mortgage interest deduction across geographic areas, showing how, as a group, tax filers in some areas claim the deduction at higher amounts and at higher rates relative to filers in other areas. This section explores how changing current policy could affect the distribution of federal tax deductions both across and within states.

The section presents two theoretical scenarios and discusses what they would mean for tax filers in a given geographic area. Because the data used in this analysis are aggregated by the IRS at the ZIP code level and do not provide individual tax return information, the scenarios are limited to those in which any new or alternate deduction is distributed equally

to all tax filers within a geographic area.

Importantly, these scenarios do not reflect specific policy proposals under consideration. This exercise is designed solely to demonstrate at a theoretical level that changing the mortgage interest deduction will have ramifications across states and within states.

Under each theoretical scenario, the deduction would be replaced by one not tied to homeownership and available to all tax filers, regardless of whether they itemize their deductions. The total dollar amount of new deductions reported on all tax returns nationwide under each scenario would be equal to the total dollar amount of mortgage interest deductions reported under current policy.¹⁶

Under the “population-based” scenario, the total amount of dollars currently claimed as a tax deduction would be divided equally across all tax filers in the country. Under the “income-based” scenario, the total would be allocated proportionately to each geographic area based on the share of federal income

taxes paid by filers in that area, then distributed evenly to all filers within that geographic area.

Each scenario is assessed according to a “net benefit” or “net loss” measure. For each group of tax filers, the net benefit (or loss) is the difference between the size of the average deduction under the theoretical scenario and the size of the average deduction under the current federal policy.

It is important to note that net benefit or net loss refers to deduction amounts and not to the impact those deductions have on tax liability. For instance, if a group of tax filers deducted an average of \$3,500 under the current mortgage interest deduction, and would deduct \$4,000 under the population-based scenario, the net benefit of the scenario would be \$500. With a higher average deduction under the population-based option, these filers would be expected to pay lower federal taxes than under the current structure of this tax expenditure. Exactly how much lower the average tax bill would depend on each filer’s marginal tax rate.¹⁷ (See Appendix II

for more detail on the methodology behind the two theoretical scenarios.)

The purpose of the theoretical scenarios is to demonstrate that modifying or eliminating the federal mortgage interest deduction could change the geographic distribution of federal tax expenditures. Furthermore, the different results under these scenarios demonstrate that the impacts on an area would depend on how modifications are structured. It is these variations under each scenario, as well as the differences between the two scenarios, that matter for this analysis—not the dollar amounts, since these scenarios do not represent actual policy options.

Theoretical impacts of the two scenarios

The population-based scenario would have resulted in a net benefit for 32 states in 2010. These are the states in which tax filers as a group would have claimed higher deductions if the mortgage interest deduction were to have been replaced with an equal-size deduction for all filers. Eighteen states and the District of

Columbia would have experienced a net loss under the population-based scenario, meaning filers in these areas would have deducted less under this scenario than with the current mortgage interest deduction. There is a wide range in the net benefit and net loss amounts, with filers in some states experiencing modest effects and those in other states experiencing much more substantial ones. (See separate Data Appendix Table 2 for detail on all states.)

The income-based scenario would have had a net benefit for 26 states and the District of Columbia, meaning that, on average, tax filers in these states would have claimed higher deductions if the mortgage interest deduction had been replaced with a deduction sized proportionally to the share of federal income taxes paid in 2010. Twenty-four states would have experienced a net loss under the income-based scenario. As with the population-based scenario, the net benefit and net loss amounts vary widely across the states. (See separate Data Appendix Table 2 for detail on all states.)

The net benefit and net loss measures for each state show substantial differences between the population-based and income-based deduction policies. Although both policies would replace the mortgage interest deduction with a new deduction available to all tax filers with aggregate deduction amounts kept constant, the way it is structured matters.

States in which tax filers as a group would have had the highest average net benefit under the population-based scenario in 2010 are those that accounted for a relatively low share of all mortgage interest deduction dollars claimed compared with their share of all federal income taxes paid, relatively low average deduction amounts, or a combination of both. Generally, states where filers would have had the highest net benefit under the income-based scenario are those where the share of taxes paid was substantially higher than the share of dollars claimed under the current mortgage interest deduction.

Theoretical impacts at the metropolitan level

Across states, the results of the theoretical scenarios vary substantially, but there is further variation at the substate level. Under the population-based scenario, tax filers in 294 of the 381 metropolitan areas would have experienced a net benefit in 2007, meaning they would have deducted more had the mortgage interest deduction been replaced with a population-based deduction. Tax filers in the other 87 areas would have experienced a net loss under the population-based scenario. Under the income-based scenario, tax filers in 248 metropolitan areas would have had a net benefit, and filers in the other 133 areas would have had a net loss. (See separate Data Appendix Table 5 for detail on all metropolitan areas.)

Generally, under the population-based scenario, metropolitan areas with mortgage interest deduction claim rates and average deduction amounts well below the national average would have experienced the largest net benefits. This includes many of the smallest metropolitan

areas, as well as a few larger ones within states that had overall claim rates and average deduction amounts below the national averages. The areas that would have had the greatest net losses under the population-based policy were generally those with claim rates and average deduction amounts well above the national averages, including many of the largest areas.

Under the income-based scenario, the areas with the highest net benefits varied by size, claim rate, and average deduction amounts. They included a handful of very large metropolitan areas with average claim rates and deduction amounts that nevertheless paid a proportionally much higher share of federal income taxes compared with their share of the total deduction dollars claimed. They also included areas with claim rates and average deduction amounts well below the national average.

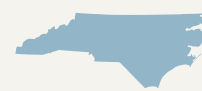
Under the income-based scenario, the areas that would have experienced the highest net losses generally had

claim rates and average deductions substantially higher than the national averages. Some of the largest areas fell within this group, but so did a number of smaller areas in states with above-average claim rates or deduction amounts.

Theoretical impacts within states

Examining the results of the two scenarios within states demonstrates that not all areas within a state would necessarily experience the same impact from a change to the mortgage interest deduction. Tax filers on average could experience a net benefit in some areas of the state and a net loss in others. Even in metropolitan areas that would experience the same impact—a net benefit or a net loss—the magnitude of benefits or losses would vary substantially. The results from the three states we focused on underscore this finding.

North Carolina



In North Carolina, tax filers in 11 of the 14 metropolitan areas would have experienced a net benefit under the population-based scenario in 2007, meaning, on average, they deducted less under the current mortgage interest deduction than they would have under one based on population. The areas with the lowest claim rates and lowest average deduction amounts, which were also among the state's smallest areas, would have had the most substantial net benefits. Areas with midsize claim rates and midsize average deduction amounts would have experienced moderate net benefits. The three areas that would have had a net loss under the population-based scenario had some of the highest claim rates and highest average deduction amounts, and included two of the largest areas. (See separate Data Appendix Table 6 for detail on all metropolitan areas within North Carolina.)

Under the income-based scenario, tax filers in 10 of the 14 metropolitan areas would have experienced a net loss. These include all three areas that would have had net losses under the population-based scenario, but it also includes seven that would have experienced a net benefit under that scenario—demonstrating that the impacts of any actual policy change would depend on the details of that change. The areas with the greatest losses included some with relatively high average deduction amounts and relatively high claim rates, as well as some smaller areas with below-average claim rates and deduction amounts that nonetheless paid a smaller share of taxes than they claimed in mortgage interest deductions.

Pennsylvania



In all 14 metropolitan areas in Pennsylvania, tax filers on average would have had a net benefit if the mortgage interest deduction were replaced by a

population-based deduction in 2007, although the net benefit amounts varied widely. Areas with the highest net benefit under the population-based scenario were generally the smallest in the state, though some larger areas also would have had a substantial net benefit. (See separate Data Appendix Table 7 for detail on all metropolitan areas within Pennsylvania.)

Under the income-based scenario, all but two metropolitan areas in Pennsylvania would have had a net benefit, although the amounts varied substantially. As in North Carolina, the average net result differs considerably, depending on the scenario.

Texas



Areas across Texas universally would have had a net benefit under either theoretical scenario in

2007. But the degree varies substantially across the state and differs depending on the scenario.

In general, under the population-based scenario, tax filers in the metropolitan

areas with the lowest mortgage interest deduction claim rates and average deduction amounts would have experienced the highest average net benefit. Conversely, those with the highest claim rates and average deduction amounts would have seen the smallest average net benefit. Many of the largest areas would have experienced a much smaller net benefit than smaller areas, with the smaller ones being among those having the highest net benefits nationally. (See separate Data Appendix Table 8 for detail on all metropolitan areas within Texas.)

Under the income-based scenario, the metropolitan areas with the largest net benefits included some of the state's largest areas as well as some of its smaller areas. As in Pennsylvania and North Carolina, the net results on a metropolitan area vary widely depending on the scenario, suggesting that any impact from altering the mortgage interest deduction would depend on the details of that change.

Conclusion

Although the mortgage interest deduction is one of the largest federal tax expenditures, about a quarter of tax filers claim the deduction.¹⁸ By various measures, the distribution of this tax expenditure is uneven, both across states and within states. At the state level, the highest claim rates and average deduction amounts tend to be concentrated along the East Coast and in parts of the West. States in the Midwest and South tend to have some of the lowest claim rates and average deduction amounts.

At the metropolitan level, claim rates and average deduction amounts tend to be highest in larger areas, especially those along coastal California, along the Boston–Washington corridor, and in a few other areas. The concentration of high claim rates and deduction amounts in and around a relatively small number of major metropolitan areas throughout the country translated into uneven distributions within states. The ratios between the top and bottom claim rates

and average deduction amounts were much greater in some states.

This paper's analysis will help policymakers more fully understand the state implications of changes to the mortgage interest deduction. This is underscored by the two theoretical scenarios presented in the paper: They demonstrate that changing the deduction would likely alter how federal deductions are spread across states and within states, and hence how federal income tax liabilities are geographically distributed.

The numbers and the mix of states experiencing a net benefit or loss under the two scenarios examined differ substantially, as do the average net benefit or loss amounts. This is also the case when the scenarios are applied at the metropolitan-area level. These findings suggest that the geographic impact of a change to the federal mortgage interest deduction would depend a great deal on how it is structured.

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Appendix I: Literature on the distribution of mortgage interest deduction benefits

Other research quantifies the distribution of mortgage interest deduction benefits across geographic areas. There are also studies that examine the benefit across income distribution, including research by James Poterba¹⁹ and James Follain, David Ling, and Gary McGill.²⁰

Joseph Gyourko and Todd Sinai examine the spatial distribution of the full range of tax benefits for owner-occupied housing, including the exclusion of imputed rent, the mortgage interest deduction, and the deduction for

property taxes, and estimate the resulting change in the user cost of housing using census tract-level data.²¹ They find the net tax benefits for owner-occupied housing are concentrated in California and in the New York–Boston corridor, and the majority of cities have a small or negative net benefit.

Peter Brady, Julie-Anne Cronin, and Scott Houser use 1995 tax data to show that substantial regional differences in using the mortgage interest deduction are related to differences in income, the level of home prices, the rate and

form of state and local taxation, and demographic differences that affect homeownership and the amount of mortgage debt.²² They find that the largest contributor to regional variation is differences in home prices, and that state and local income and property taxes also play a substantial role. Their analysis focuses on census regions, such as New England and the mid-Atlantic, and may miss important differences at smaller levels of geography.

Joseph Gyourko and Todd Sinai examine how the spatial distribution of housing

tax benefits changed between 1980 and 2000.²³ As with their earlier work, they apply census-tract data to estimate the net benefit to owner-occupied housing with a user-cost model. They show that tax benefits have remained concentrated in California and cities on the East Coast. They also point out that geographic concentration of the tax benefits is increasing over time. Finally, Martin Sullivan also uses IRS data on the mortgage interest deduction dollars claimed to show the unequal geographic distribution at the state level.²⁴

Appendix II: Methodology

Data

This report uses IRS data from tax year 2010, the most recent year for which data were available at the time of analysis on the number of tax filers, the number of mortgage interest deduction claims, the amount of interest deducted, and federal income taxes paid at the state level. It also uses the IRS's only release of comprehensive data on mortgage interest deduction claims, including the number of claims, at the ZIP code level. These data, for tax year 2007, allow for an examination of the within-state distribution of this federal deduction. This study does not analyze the many factors that could influence the deduction's geographic distribution, such as differences in income, housing

costs, housing turnover rates, rental vs. homeownership rates across geographic areas, and others.

Theoretical scenarios

The analysis uses two theoretical scenarios to illustrate that modifying or eliminating the mortgage interest deduction would have varying impacts on different geographic areas and thus alter the distribution of this tax expenditure. Under either scenario, the deduction would be eliminated and replaced by a new deduction not tied to any specific tax filer behavior, similar to the current standard deduction. Unlike the standard deduction, however, the new deduction would be available to both itemizers and non-itemizers.

The population-based scenario

Under the population-based scenario, the mortgage interest deduction would be replaced by a new deduction of equal size for all tax filers. The net benefit measure of this theoretical scenario compares the average mortgage interest deduction per filer in each group to the average mortgage interest deduction of all tax filers. In equation form, the population-based net benefit is:

$$NB_{Population-based} = \frac{\sum_{i=1}^N MID_i}{\sum_{i=1}^N TF_i} - \frac{MID_i}{TF_i}$$

where MID is the total dollars of mortgage interest deducted, and TF is the number of tax filers for a given geographic area, *i*.

Calculating the net benefit this way is equivalent to asking if tax filers as a group in a given area would have a larger average deduction with the current mortgage interest deduction or with a population-based deduction equal to the average mortgage interest deduction per filer nationwide. A negative net benefit—a net loss—suggests filers in the area would have lower federal tax liability under the current structure of this tax expenditure. A positive net benefit suggests they would have lower tax liability under the population-based scenario.

The income-based scenario

Under the second theoretical scenario, the mortgage interest deduction would be replaced by a new deduction

sized proportionally to the share of federal income taxes paid by tax filers within a given geographic area. This income-based scenario would essentially allocate the dollars claimed under the current structure of this tax expenditure to each geographic area based on the share of federal income taxes paid by tax filers in that area, and then distributed evenly to all tax filers within that geographic area.

The net benefit measure for the income-based scenario compares the average mortgage interest deduction for a given group of tax filers to an income-based deduction based on the share of taxes paid by each group,

$$NB_{Income-based} = T_i \frac{\sum_{i=1}^N MID_i}{TF_i} - \frac{MID_i}{TF_i}$$

where MID and TF are defined as in

the previous equation, and T is the share of all federal income taxes paid in each area.

The income-based net benefit measure is equivalent to asking if a group of tax filers would have a larger deduction with the current structure of the mortgage interest deduction or with a deduction sized proportionally to the share of federal income taxes the group pays. A negative net benefit—a net loss— suggests the filers would have lower federal tax liability under the current mortgage interest deduction, and a positive net benefit suggests they would have lower federal tax liability under the income-based scenario.

Under both scenarios, the total dollar amount of new deductions reported on all tax returns nationwide would be equal to the total dollar amount of

mortgage interest deductions reported under current policy. Redistributing the same total dollar amount of deductions in the form of a deduction available to both itemizers and non-itemizers would result in lower aggregate taxable income because of interactions between the current mortgage interest deduction and standard deduction. It would also result in a change in the number and the marginal tax rates of tax filers taking deductions. For these reasons, the scenarios are not revenue-neutral.

Neither calculation takes into account differences in marginal tax rates that apply to the dollars deducted, for two reasons. First, the data do not allow a separate determination of taxable income for those who claim the mortgage interest deduction, so any marginal tax rate calculation

would necessarily be for all filers in the area and not just for filers claiming the deduction. Second, the variation in average taxable income (the determinant of marginal tax rates) at the ZIP code level is inconsequential relative to the variation across income groups.²⁵ Since they do not account for marginal tax rates, the calculations capture only the variation in deduction benefits that comes from differences in factors such as home prices, the share of home purchases financed with debt, and propensity to claim the deduction—and not from differences in marginal tax rates.

It is important to note that the net benefit (or net loss) measures refer to changes in deduction amounts and do not account for other aspects of the mortgage interest deduction, including

capitalization, location choice effects, and tax filer behavior. For instance, assuming the deduction benefit is incorporated (or “capitalized”) into home prices, homeowners who do not claim the deduction nevertheless benefit indirectly from its existence through higher home property values.

The mortgage interest deduction also may play a role in residential choice across states and metropolitan areas by offsetting some of the “location distortion” from the federal income tax.²⁶ Federal income taxes distort residential choice because they are based on a tax filer’s nominal income, and thus do not take into account that the purchasing power of a given level of income differs across geographic

areas. As a result, the “real” amount of federal income taxes paid by filers with identical incomes and filing statuses—that is, the nominal income tax adjusted for local price levels—differs across locations. Because home prices differ across locations, the mortgage interest deduction reduces tax liability in a way that is tied to local price levels and thereby reduces the location distortion caused by the federal income tax code. The net benefit calculations presented here do not address such indirect effects of the mortgage interest deduction.

The calculations also do not consider tax filer behavior related to the current structure of this tax expenditure, or potential behavioral

changes, such as paying down mortgage debt, if the interest deduction were to be replaced with a deduction unrelated to mortgage lending.²⁷

Additionally, the calculations do not account for the fact that some tax filers might have federal taxable income so low that the new deduction would reduce their taxable income to zero. Since a deduction cannot reduce taxable income below zero, these filers would not benefit from the full amount of the new deduction if it exceeded their taxable income prior to applying the new deduction. As such, the net benefits reported would overestimate the impact of the scenario for these filers.²⁸

Similarly, the calculations do not account for any limits on deductions for higher-income tax filers. The net benefits reported would thus underestimate net benefits (or overestimate net losses) from the scenario for certain higher-income filers.

Finally, the calculations do not account for changes in tax filers’ state income tax liability that might result from changes to the federal mortgage interest deduction in those states that link their income tax codes to the federal code.

Endnotes

¹ Internal Revenue Service, Statistics of Income, Table 2: "Individual Income and Tax Data, by State And Size of Adjusted Gross Income, Tax Year 2007" and "Tax Year 2010," *SOI Tax Stats—Historic Table 2*, accessed Feb. 25, 2013, irs.gov/uac/SOI-Tax-Stats---Historic-Table-2. The estimate is for tax year 2010, the latest year for which state data were available at the time of analysis. Under current law, tax filers can deduct interest paid on a mortgage up to \$1 million, including interest paid on second homes. In addition, tax filers can deduct interest paid on home equity loans up to \$100,000. These limits are halved for married tax filers who file separate returns.

² Office of Management and Budget (OMB), *Budget of the United States Government, Fiscal Year 2012, Analytical Perspectives*, Table 17-1 (Washington: U.S. Government Printing Office, 2011), whitehouse.gov/sites/default/files/omb/budget/fy2012/assets/spec.pdf. The estimate is for fiscal 2010. The Joint Committee on Taxation (JCT) estimated the fiscal 2010 forgone revenue from the mortgage interest deduction to be \$91 billion. (Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2010-2014*, JCS-3-10, Table 1 (Washington, Dec. 21, 2010), jct.gov/publications.html?func=startdown&id=3718.) OMB's fiscal 2014 *Supplemental Materials* (Table 16-1) estimates the deduction would result in \$93 billion in forgone revenues in fiscal 2013 (Washington: U.S. Government

Printing Office, 2013), whitehouse.gov/omb/budget/Supplemental. The JCT's estimate is \$70 billion for the year. Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2012-2017*, JCS-1-13, Table 1 (Washington, Feb. 1, 2013), jct.gov/publications.html?func=startdown&id=4503). Other tax expenditures related to housing in the federal tax code include the deduction for property taxes and exclusion of most capital gains from a home sale, and exclude "imputed rent" from income. Under a pure income tax, "imputed rent," or the value that a homeowner would be willing to pay in rent to live in his or her home if someone else owned it, would be counted as income and taxed accordingly. This paper does not address these tax expenditures.

³ The skewed distribution of the mortgage interest deduction across income groups is the result of both the progressivity in income tax rates and the standard deduction. Progressivity in the tax code makes a deduction from taxable income more valuable as marginal income tax rates rise with income, so that the deduction results in a larger subsidy for a filer with a higher marginal tax rate. The option of a standard deduction means that the mortgage interest deduction will not have any value for filers whose itemized deductions (including mortgage interest paid) do not exceed the value of the standard deduction.

⁴ This analysis does not explore the many factors that could influence the geographic distribution of the mortgage interest deduction, such as geographic differences in income, housing costs, housing turnover rates, rental-vs.-homeownership rates, and others. This analysis also does not consider state policies related to this tax expenditure.

⁵ All state-level data in this report are aggregated by the Internal Revenue Service using tax returns. Metropolitan-level data in this report are aggregated by the authors using ZIP code-level data from the IRS.

⁶ Office of Management and Budget, *Budget of the United States Government, Fiscal Year 2009, Analytical Perspectives*, Table 19-1 (Washington: U.S. Government Printing Office, 2008), gpo.gov/fdsys/pkg/BUDGET-2009-PER/pdf/BUDGET-2009-PER-8-3.pdf.

⁷ Although home prices continued to fall throughout 2011, the rate of decline leveled off during that time. See Federal Housing Finance Agency, "Purchase Only Index, U.S. Summary Through 2012Q3," *Housing Price Indexes*, accessed January 25, 2013, fhfa.gov/Default.aspx?Page=87.

⁸ Freddie Mac, "Monthly Data for 30-Year Fixed-Rate Mortgages," *Primary Mortgage Market Survey*, accessed Jan. 25, 2013, freddiemac.com/pmms/pmms_archives.html.

⁹ RealtyTrac.com, *U.S. Foreclosure Starts*, accessed June 21, 2012.

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¹² Using data on actual IRS claims allows avoiding assumptions about the relationship between home values and income distributions, relative income distributions of owners and renters, the relationship between owner leverage and age, and market interest rates across areas upon which previous work relies.

¹³ Metropolitan statistical areas (MSAs) differ from combined statistical areas (CSAs), which include multiple MSAs. For example, Denver in the sample includes Aurora and Broomfield as well as Denver; the Denver CSA combines the Denver MSA with the Boulder and Greeley MSAs. Some of the largest MSAs, such as New York, Los Angeles, and Chicago, are broken up into metropolitan divisions. For example, the New York metropolitan area is divided into four metropolitan divisions: Edison, NJ; New York-White Plains-Wayne, NY-NJ; Nassau-Suffolk Counties; and Newark-Union, NJ-PA.

¹⁴ Metropolitan aggregates combine all the ZIP codes in the metropolitan area to create a total. Each area consists of counties encompassing and surrounding the primary city. Aggregating the IRS data to metropolitan areas is done using ArcGIS software and corresponding ZIP codes in the IRS data. ZIP codes can be aggregated only if they are recognized by ArcGIS. Because the software does not recognize all ZIP codes in the IRS data, about 89 percent of mortgage interest deduction claims are matched. Unmatched ZIP codes are typically the result of post office box ZIP codes that take up no physical location, self-reported ZIP codes in the IRS data, and ZIP codes that are newer than the ArcGIS file. Aggregation is not an issue at the state level, as the IRS includes state identifiers.

¹⁵ Comprehensive data on mortgage interest deduction claims at the ZIP code level after tax year 2007 have not been made publicly

available. The within-state distribution of claims may have changed since then even for states with relatively stable housing markets.

¹⁶ Because of interactions between the current mortgage interest deduction and the current standard deduction, redistributing the same total dollar amount of currently reported mortgage interest deduction claims in the form of a new deduction available both to itemizers and non-itemizers would result in lower aggregate taxable income. It also would result in a change in the number and the marginal tax rates of tax filers claiming deductions. The data used in this analysis do not include individual tax-filer information from which any change in tax liability—or tax revenues—could be calculated. For these reasons, the scenarios are not revenue-neutral.

¹⁷ In rare circumstances, an increase in the average federal deduction amount for a given area could result in higher average federal income tax liability. This could be the case if filers with high marginal tax rates ended up with tax increases that in aggregate outweighed the aggregate reductions in tax liability for filers with low marginal tax rates, even though total deductions increased in the area.

¹⁸ Internal Revenue Service, Statistics of Income, Table 2: "Individual Income and Tax Data, by State and Size of Adjusted Gross Income, Tax Year 2011," *SOI Tax Stats-Historic Table 2*, accessed April 29, 2013, [\[Stats---Historic-Table-2\]\(#\).](http://irs.gov/uac/SOI-Tax-</p></div><div data-bbox=)

¹⁹ James M. Poterba, "Taxation and Housing: Old Questions, New Answers," *American Economic Review* 82(2) (May 1, 1992): 237-242.

²⁰ James R. Follain, David C. Ling, and Gary A. McGill, "The Preferential Income Tax Treatment of Owner-occupied Housing: Who Really Benefits?" *Fannie Mae Housing Policy Debate* 4(1) (1993): 1-24.

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²³ Joseph Gyourko and Todd Sinai, "The (Un) Changing Geographical Distribution of Housing Tax Benefits: 1980-2000," *Tax Policy and the Economy* 18 (2004): 175-208.

²⁴ Martin Sullivan, "Mortgage Deduction Heavily Favors Blue States," *Tax Notes* 130 (Jan. 24, 2011): 364-367.

²⁵ The average marginal tax rate for nearly all ZIP codes is 15 percent or 25 percent.

²⁶ David Albouy and Andrew Hanson, "Federal Taxes, Geographic Incidence, and Location and Housing Consumption Inefficiency," (unpublished manuscript, 2011).

²⁷ See James Poterba and Todd Sinai, "Revenue Costs and Incentive Effects of the Mortgage Interest Deduction for Owner-Occupied Housing," *National Tax Journal* 64(2) (2011): 531-564, for a discussion about the effects of changing the mortgage interest deduction that incorporates behavioral change.

²⁸ This issue would likely apply to a small fraction of tax filers. For example, only filers with adjusted gross income less than \$5,000 had an average taxable income below the maximum benefit (\$1,482 in ND) in tax year 2009, the latest year for which such data are available. This group represented less than 0.5 percent of tax filers that year.

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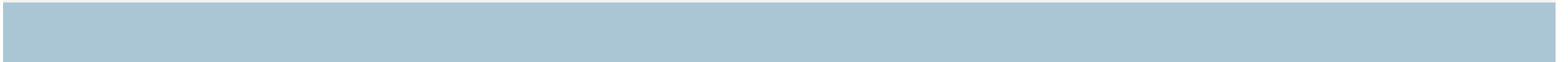
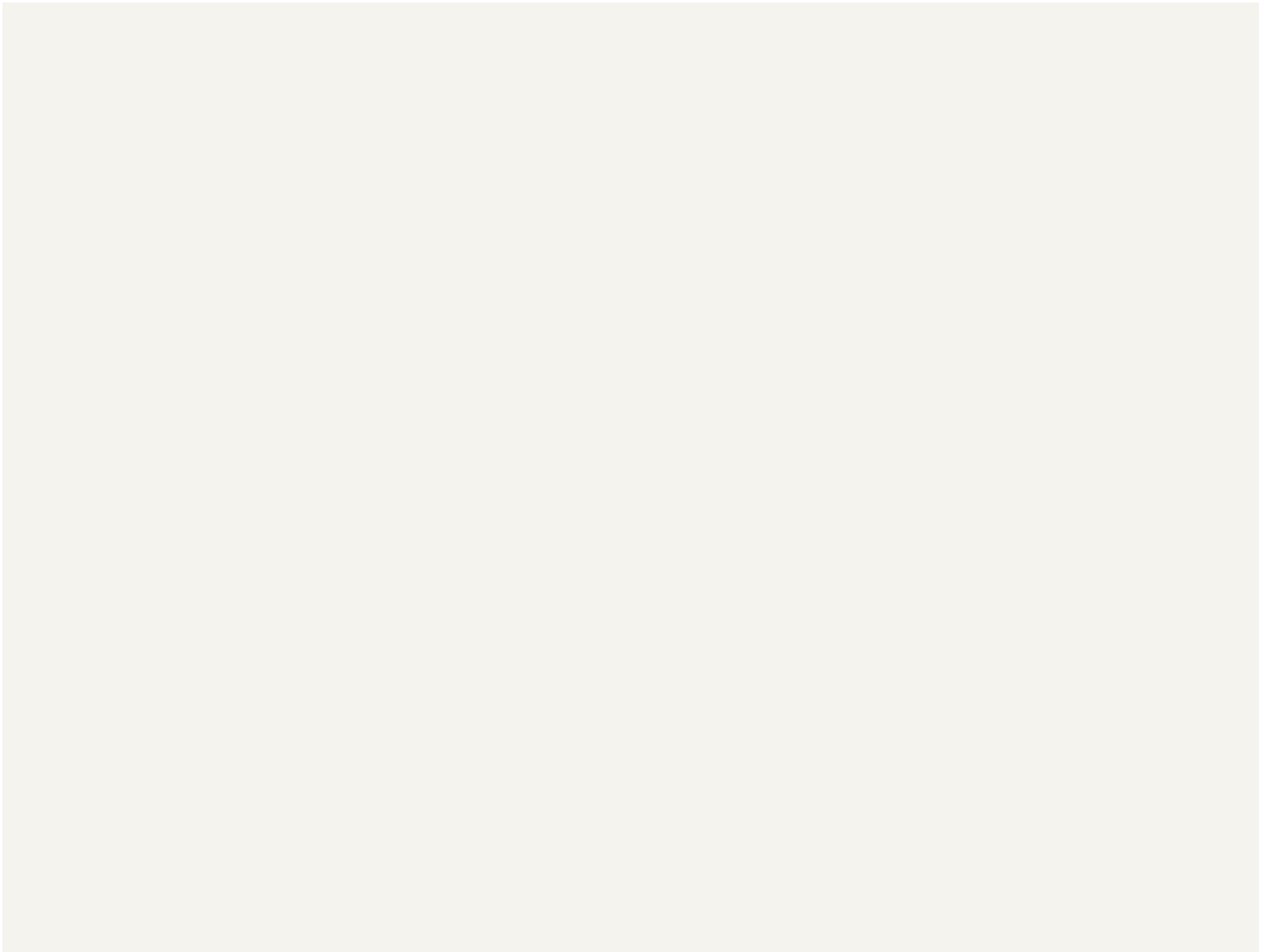
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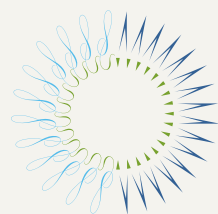
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