

## **Regional Differences in the Utilization of the Mortgage Interest Deduction**

by

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OTA Paper 88      August 2001

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The authors wish to thank Gerald Auten, Donald Bruce, John Eiler, David Joulfaian, Donald Kiefer, Andrew Lyon, James Nunns, Andrew Reschovsky, David Rousslang, Paul Smith and conference participants at the 1999 AEA conference and the 1999 NTA conference for their helpful suggestions and comments. All remaining errors and omissions are the authors'.

## Abstract

The value of federal income-tax deductions, such as the home mortgage interest deduction (MID), varies across geographic regions. Taxpayers in regions with relatively high incomes, state and local income taxes, and housing costs are more likely to utilize deductions; that is, they are more likely to itemize, more likely to have a larger deduction conditional on itemizing, and more likely to get a larger tax benefit from their deductions. To the extent utilization of the MID varies across regions, any income-tax change that alters the MID may have effects that vary spatially. This paper uses 1995 tax data to investigate the extent to which the current mortgage deduction is utilized, and how the utilization differs across regions.

We show that there are substantial regional differences in utilization of the MID. For example, only 21 percent of taxpayers itemize in the West South Central division, while 38 percent itemize in the New England and Middle Atlantic divisions. Conditional on claiming a MID, the average size of the MID ranges from \$5,700 in the West North Central division to \$10,000 in the Pacific division, and the average tax savings associated with the MID range from \$1,100 in the East South Central division to \$2,100 in the Pacific division. Differences in utilization are related to differences in income, the level of house prices, the rate and form of state and local taxation, and demographic differences that affect homeownership and the amount of mortgage debt. About 40 percent of the explained regional variation in itemization is due to regional differences in house prices, and another 20 percent is due to differences in state and local income and property taxes. About two-thirds of the explained regional variation in the average size of the MID is due to regional differences in housing prices and state and local income and property taxes.

## **I. Introduction**

It has been noted (Clotfelter and Feenberg, 1990) that the value of federal income-tax deductions, such as the home mortgage interest deduction (MID), varies across geographic regions. Taxpayers in regions with relatively high incomes, state and local income taxes, and housing costs are more likely to utilize deductions; that is, they are more likely to itemize, more likely to have a larger deduction conditional on itemizing, and more likely to get a larger tax benefit from their deductions. Quantifying and determining the causes of regional variation in utilization of the MID is valuable for two reasons. First, to the extent that utilization of the MID varies spatially, any effects on housing markets and individual tax liabilities of an income tax change that alters the MID would vary spatially. Second, if utilization of the MID is higher in regions with higher housing costs, regional variation in utilization may mitigate horizontal inequities that arise from regional variation in the cost of living. This paper measures the extent to which utilization of the MID varies across regions and investigates the extent to which regional differences in income, state and local taxation, housing prices, and other factors lead to these regional differences.

The MID allows taxpayers to deduct qualified interest paid on up to \$1 million in acquisition debt secured by the taxpayer's principal residence and one other residence.<sup>1</sup> Taxpayers may also deduct interest on up to \$100,000 in home equity debt. The total of the acquisition and home equity debt on which the MID is taken cannot exceed the fair market value of the home. The MID will create an estimated revenue loss of \$66 billion in fiscal year 2002

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<sup>1</sup> Acquisition debt is debt incurred in acquiring, constructing, or substantially improving a qualified residence. Refinanced debt qualifies as acquisition debt to the extent it does not exceed the amount of refinanced indebtedness. Debt incurred before October 13, 1987 is treated as acquisition debt and is not subject to the \$1 million cap.

(Budget of the United States Government, 2002). It is the third most expensive tax expenditure under current law, exceeded only by the exclusions for employer contributions for medical insurance premiums and medical care (\$92 billion) and the net exclusion of employer pension plan contributions and earnings (\$98 billion).<sup>2</sup>

Regional differences in the utilization of the MID likely would lead to different regional responses to any income tax change affecting the MID. Much of the recent literature on the MID focuses on changes arising from a tax reform that would limit or eliminate the deduction (See Capozza, Green, and Hendershott, 1996; Green and Reschovsky, 1997; and Bruce and Holtz-Eakin, 1999). However, none of these studies explicitly examines utilization of the deduction at either a national or regional level. For example, Capozza, Green, and Hendershott (1996) estimate that implementation of the Arme-y-Shelby flat tax, which would have eliminated the MID and other itemized deductions, would cause large declines in house prices and that the magnitude of price declines would vary by region. However, as noted by Holtz-Eakin in a comment on the paper, in arriving at these estimates, the authors assume all homeowners itemize deductions. This assumption not only overstates any effect of eliminating the MID but also ignores any regional differences in utilization of the MID.<sup>3</sup>

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<sup>2</sup> The MID is not the only tax preference for owner-occupied housing. The capital gains exclusions on home sales and the deductibility of state and local property tax on owner occupied homes accounted for another \$45 billion of federal tax expenditures in fiscal year 2002. Note that mortgage interest and property tax deductions are considered preferences because imputed rents are excluded from income. Under a Haig-Simons definition of income, imputed rent would be included in income and mortgage interest and property taxes would be deductible as costs of earning the imputed rent. The principal tax benefits of homeownership are the exclusion of imputed rents and the light taxation of capital gains (see Follain and Ling, 1991).

<sup>3</sup> Tabulations from the 1995 American Housing Survey (AHS) show that approximately 60 percent of homeowners have mortgage debt. Tax simulations using these data indicate that approximately 60 percent of those with mortgage debt itemize deductions (or 36 percent of homeowners).

The effect on regional housing markets of any changes to the MID also would depend on the causes of regional variation in MID utilization. If regional patterns of MID utilization are primarily accounted for by differences in taxpayer-specific factors, such as income, filing status, and number of dependents, elimination of the MID would induce changes in demand for housing that would be similar for demographically similar taxpayers, regardless of region. Thus, the demand for, say, high-end housing would decline similarly in all regions and the effect of the tax law change on the demand for housing would vary spatially only because of regional differences in taxpayer-specific factors. Conversely, if region-specific factors, such as the price of housing or the level of state and local taxes, are the primary determinants of the regional pattern of MID utilization, elimination of the MID would induce changes in the demand for housing that differ by region even for taxpayers with similar characteristics. In this case, the demand for, say, high-end housing would decline more in some regions than in others.

Regional equity and the efficiency of the federal tax system also could be influenced by regional differences in utilization of the MID. Horizontal equity requires that equals be taxed equally. With a progressive income tax, taxpayers with higher nominal incomes face higher average tax rates. However, because the cost of living varies across regions, nominal income may not be the proper metric to measure well being; that is, \$50,000 of income in Des Moines may make one better off than \$50,000 of income in Manhattan. On the most simplistic level, individuals in high cost of living regions are taxed at too high a rate, all else equal. The MID would tend to mitigate this to the extent utilization is positively related to housing prices. Of course, there are other factors that mitigate concerns about inter-regional equity. In particular,

people are free to move between regions, and in the long run people are likely to be equally well off in all regions.<sup>4</sup> However, even if the assumption of a long-run regional equilibrium eliminates concerns about equity, individuals in high cost of living areas would still face higher marginal rates than their counterparts in other regions.

Earlier studies have attempted to look at regional differences in the propensity to itemize and the value of deductions. Izraeli and Kellman (1990) use aggregated state level data and find that average state income and housing prices are not correlated with the proportion of state residents who itemize. This is not surprising because average income is unlikely to control adequately for all the aspects of the income distribution that affect itemization. Clotfelter and Feenberg (1990) find that the federal tax subsidy for charitable giving varies regionally because of regional differences in both rates of itemization and the value of other itemized deductions. However, they do not find that the level of charitable giving varies across regions. They speculate that the federal subsidy to other deductible expenses, including the MID, would vary regionally.

This paper uses tax data from the 1995 Statistics of Income (SOI) cross-section sample of individual income tax returns to investigate the extent to which the current mortgage interest deduction is utilized and how the utilization differs across regions. We show that there are substantial regional differences in itemization, in the amount of mortgage interest claimed as a deduction, and in the tax value of the MID. Differences in the utilization of the home mortgage interest deduction by taxpayers are related to differences in income, the rate and form of state and

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<sup>4</sup> Roback (1982) models such a long-run regional equilibrium in which wages and rents adjust to make people indifferent among regions.

local taxation, the level of house prices, and demographic differences that affect homeownership and the amount of mortgage debt. About 40 percent of the explained regional variation in itemization is due to regional differences in house prices, and another 20 percent is due to differences in state and local income and property taxes. About two-thirds of the explained regional variation in the average size of the MID is due to regional differences in housing prices and state and local income and property taxes. This result suggests that a change in the tax treatment of mortgage interest would induce changes in the demand for housing that would vary spatially, even for taxpayers with similar characteristics.

The paper is arranged as follows. Section II looks at the factors we expect to be related to itemization status and the size and value of the MID conditional on itemizing, and shows why utilization of the MID is likely to vary across regions. Section III uses descriptive statistics from the tax data to show how utilization of the MID varies across income and region. Section IV more formally analyzes which taxpayer-specific and regional variables are related to utilization. Section V concludes.

## **II. Factors Causing Regional Differences in Utilization**

The utilization of the MID by a taxpayer likely is related to the interaction of income, filing status, the level of local housing prices, and the level of other itemized deductions such as state and local income and property taxes, the value of medical expenses, and charitable contributions. In addition, because an individual must own a home to utilize the mortgage interest and property tax deductions, demographic factors that influence homeownership could affect utilization of the MID. Because incomes, housing prices, state and local taxes, and

homeownership rates vary across regions, we would expect to see regional differences in utilization of the MID.

### *II A. Regional variation in itemization*

The first aspect of MID utilization examined in this paper is the likelihood of itemizing. Of the 118.2 million returns filed in 1995, only 34.0 million tax filers (or 29 percent) itemized. Itemizing deductions benefits taxpayers only when total itemized deductions exceed the standard deduction (equal to \$6,550 for joint filers and \$3,900 for single filers in 1995).<sup>5</sup> As a result, only taxpayers with relatively high levels of itemized deductions opt to itemize, and only those who itemize can take advantage of the MID. The most frequently claimed itemized deductions are for state and local taxes paid (claimed by 33.5 million taxpayers in tax year 1995, or 99 percent of itemizers), charitable contributions (30.5 million claimants in 1995, or 90 percent of itemizers), and home mortgage interest (28.4 million claimants in 1995, or 83 percent of itemizers). All else equal, we would expect that single filers would be more likely to itemize given that they face a lower standard deduction. However, single filers tend to have lower incomes than joint filers, and are less likely to own homes conditional on income.

We expect taxpayers who live in regions with high state and local income and property taxes to be more likely to itemize because they are more likely to have total itemized deductions

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<sup>5</sup> In certain circumstances, taxpayers with total federal itemized deductions less than the federal standard deduction may still itemize. Married couples may choose to file separately if only one member has high itemized deductions; however, both are required to itemize. Other taxpayers may itemize to minimize their liability under the Alternative Minimum Tax (AMT) since some itemized deductions are not preferences on the AMT. In rare cases, taxpayers may lower their total tax bill (federal plus state) by itemizing on their federal return. In such cases, state law requires itemizing on the federal return in order to itemize for state tax purposes, and the tax benefit from itemizing on the state return outweighs the tax loss from itemizing on the federal return.



in excess of the standard deduction. We also expect taxpayers that live in states where mortgage interest is deductible for state income taxes to be more likely to itemize because this additional deductibility would lower the price of mortgage debt and could make them more likely to have mortgage debt.

We expect taxpayers in areas with high home prices to be more likely to itemize for two reasons. First, mortgage debt secured by a house is likely to increase in line with the purchase price of a house. Second, because interest is deductible only on debt that does not exceed the fair market value of the home, taxpayers in areas that have experienced house price appreciation will be able to attain additional tax-preferred mortgage debt subsequent to the purchase of the house.<sup>6</sup> Likely tempering the effect of housing prices on itemization, however, is the effect of housing prices on homeownership, as residents in high house price areas may find it more difficult to accumulate funds for a given percentage down payment on a house.

Controlling for variation in state and local tax rates and housing prices, we would expect that the probability of itemizing would increase with income because deductible expenses are likely to be positively related to income. We expect that mortgage debt is positively related to income both because housing is a normal good and because high-income homeowners are better able to take advantage of arbitrage opportunities presented by deductible mortgage interest (see Capozza, Green and Hendershott, 1996).

Demographic factors that influence homeownership also could be related to the probability that an individual itemizes. Homeownership rates differ across regions. Coulson

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<sup>6</sup> Using data from the 1995 American Housing Survey (AHS), the correlation coefficient between house value and principal mortgage is 0.54 for all homeowners and 0.66 for homeowners with mortgages.

(1998) shows that homeownership is influenced not only by income and house prices but also by demographic characteristics such as age, marital status, presence of children, ethnicity and whether one is an immigrant. In particular, Coulson finds that differences in house prices and the presence of immigrants largely explain the difference in regional homeownership rates. Beyond its effect on homeownership, age may have a particularly important effect on the level of mortgage interest. Although homeownership increases with age, loan-to-value ratios decline sharply with age across all income categories (see Capozza, Green, and Hendershott, 1996); therefore, younger taxpayers are less likely to own homes, but are more likely to have mortgage debt, conditional on owning their home. Age also may affect the level of other deductions such as medical expenses.

More formally expressing the factors that determine itemization, the likelihood of itemizing is expressed in the following equations:

$$\begin{aligned}
 I &= 1 && \text{if } I^* > D_f && (2.1) \\
 I &= 0 && \text{otherwise}
 \end{aligned}$$

where  $I$  is an indicator variable for itemization and  $D_f$  is the standard deduction with  $f$  denoting filing status. We observe itemized deductions,  $I^*$ , only if they are higher than the allowable standard deduction.

$$I^* = f(Y, X, T, H) \tag{2.2}$$

where  $Y$  is income,  $X$  is a vector of taxpayer specific demographic variables,  $T$  is a vector of state tax variables (which vary by state, not by individual), and  $H$  is a measure of state housing prices.

### *II B. Regional variation in the size of the MID*

Conditional on itemizing, we expect the amount of mortgage interest deducted will depend on many of the same factors that affect the decision to itemize. In particular, housing prices, income, and demographic variables that are correlated with homeownership should affect the level of the MID for those that itemize. The relationship between these variables and the level of mortgage interest deducted are summarized in the following equation:

$$(MID | I = 1) = g(Y, Z, T, H) \tag{2.3}$$

where  $Y$  is income,  $Z$  is a vector of demographic variables,  $T$  is a vector of state tax variables, and  $H$  is a measure of state housing prices. Clearly, house prices influence the level of itemized deductions only for homeowners; therefore, any structural model of itemization would need to include a model of the homeownership decision. Because of the limitations of the tax data, we are not able to separate the direct effects of these variables on itemization from the indirect effects of these variables on itemization through their influence on homeownership. Hence, equations 2.2 and 2.3 should be viewed as reduced form representations.

### *II C. Regional variation in the tax benefit from the MID*

The final aspect of MID utilization is the tax benefit of the deduction to those who claim it. The tax saving attributed to any deduction is usually the deduction multiplied by the taxpayer's marginal tax rate. Thus, tax savings generally increase with the size of the MID, and, holding the size of the MID constant, taxpayers facing higher marginal rates receive larger tax

savings.<sup>7</sup> However, a complicating factor in determining tax savings for an individual is the amount of other itemized deductions. If, in the absence of the MID, a taxpayer would be better off taking the standard deduction, the tax savings would be less than the deduction multiplied by the taxpayer's marginal rate.<sup>8</sup> Therefore, in addition to the size of the deduction and the taxpayer's marginal rate, the amount of non-MID deductions affects the value of the MID.

Follain and Ling (1991) develop a concept they call "wasted" deductions to quantify the effect of other deductions on the value of the MID. They define wasted deductions as the amount of MID needed to make total itemized deductions equal to the standard deduction. In the next section we examine how the tax benefit attributable to the MID varies across regions and income classes, and the extent to which wasted deductions affect the tax benefit. We expect the value of the MID to be higher for individuals in states with high state and local income and property taxes.

### **III. Establishing the Facts -- Descriptive Statistics from Tax Data**

To examine the utilization of the MID, we use the 1995 Statistics of Income (SOI) cross-section sample of individual income tax returns. The sample has two components. The first is a 1-in-5,000 random sample of all individual income tax returns. This portion of the sample is also

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<sup>7</sup> For example, \$3,000 in deductible mortgage interest will lower the taxes of a filing unit in the 15 percent bracket by \$450 (that is,  $\$3,000 \cdot .15$ ). The same \$3,000 in deductible mortgage interest lowers the taxes of a unit in the 28 percent bracket by \$840. Some high-income taxpayers, however, may face reduced marginal benefits from a given level of mortgage interest expense due to the limitation on itemized deductions. A taxpayer whose AGI exceeds a threshold amount is required to reduce the amount of their allowable itemized deductions (including the MID, but not including deductions for medical expenses, investment interest, or casualty, theft or wagering losses) by 3 percent of the excess of their AGI over the threshold amount. The reduction is never more than 80 percent of the allowable deductions subject to the limitation. The threshold amount of AGI in 1995 was \$114,700.

<sup>8</sup> For example, consider a married joint-filer in 1995 in the 28 percent bracket with \$3,000 of deductible mortgage interest and \$5,000 of other deductions. In the absence of the MID, the taxpayer would take the standard deduction of \$6,500. Thus, \$1,500 of his mortgage interest deduction is wasted and his tax saving due to the MID is \$420 ( $\$1,500 \cdot .28$ ), not \$840 ( $\$3,000 \cdot .28$ ).

known as the Continuous Work History Sample (CWHS). Inclusion in the CWHS is based on the last four digits of the primary taxpayer's social security number. In addition, there is a larger stratified random sample that oversamples "interesting" returns. The criteria for defining strata include amount of income, type of income, presence of special Forms or Schedules, and potential usefulness of the return for tax policy modeling. All returns in the two components of the sample are assigned weights equal to the inverse of their sampling probability, in order to represent the universe of individual income tax returns filed for 1995.

For this analysis we have selected all joint, single, and head-of-household returns filed by non-dependents. We dropped all married filing separate and widower returns, and all returns filed by dependents. The sample consists of 108,000 observations representing 105.3 million tax returns. Slightly less than half of the tax returns represented in the sample (49.0 million) are joint returns, but these filers account for 70 percent of itemizers. Because both the distribution of income and propensity to itemize differ between joint filers and single and head of household filers, the following tables are presented with three different variations: all filers, joint filers, and single and head-of-household filers. We aggregate the data to the level of the nine Census divisions.<sup>9,10</sup>

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<sup>9</sup> New England includes Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut; Middle Atlantic includes New York, New Jersey, and Pennsylvania; East North Central includes Ohio, Indiana, Illinois, Michigan, and Wisconsin; North Central includes Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas; South Atlantic includes Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, and Florida; East South Central includes Kentucky, Tennessee, Alabama, and Mississippi. South Central: Arkansas, Louisiana, Oklahoma, and Texas; Mountain includes Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, and Nevada; Pacific includes Washington, Oregon, California, Alaska, and Hawaii.

<sup>10</sup> The cross section sample is a stratified random sample and, of importance to our study, is not stratified to be geographically representative. Tabulations using both the March 1996 Current Population Survey and the 1990 Census showed regional differences similar to those in the cross section file for income distribution, as well as age, presence of dependents/children, and marital/filing status (these tabulations are available from the authors). The

Tables 1a-1c present tax return counts and income distributions based on fixed income classes.<sup>11</sup> Of the 105 million non-dependent tax returns, 26 million have incomes under \$15,000 and 1.5 million have incomes over \$200,000. The median income for the sample is \$28,310.

Not surprisingly, the income distribution of joint filers differs substantially from the income distribution of single and head-of-household filers. Over 75 percent of taxpayers with incomes under \$30,000 are either single or head-of-household filers. Conversely, nearly 90 percent of taxpayers with incomes over \$75,000 are joint filers. Although 52 percent of all filers have incomes under \$30,000, 26 percent of joint filers and 75 percent of single and head-of-household filers are in this income category. At the other end of the income distribution, 12 percent of all taxpayers have incomes over \$75,000, with 22 percent of joint filers, but only 3 percent of single and head-of-household filers, in this category.

Regional differences in income distribution are apparent in these tabulations.<sup>12</sup> For example, 45 percent of all taxpayers in New England have incomes under \$30,000 and 14 percent have incomes over \$75,000. In the East South Central division, 60 percent of taxpayers have incomes under \$30,000 and 8 percent have incomes over \$75,000. In general, the southern divisions (South Atlantic, East South Central, and West South Central) have lower distributions of income, whereas the northeastern divisions (New England and Mid-Atlantic) have higher

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similarity of the cross section and these regionally representative samples suggest the tax data provide a reasonable sample with which to analyze the regional distribution of widely-used tax preferences like the MID.

<sup>11</sup> Income is “total income” (1040 definition) plus: tax exempt interest, nontaxable pension and social security benefits, and deferred wages (including 401k contributions) of the primary and/or spouse.

<sup>12</sup> Note that the divisions vary in population. The largest census divisions are the South Atlantic, Pacific and East North Central, each with more than 16 million returns. New England, the East South Central and Mountain divisions are among the smallest with less than 7 million returns each.

distributions of income. These regional differences are also apparent when joint filers and single and head of household filers are tabulated separately.

The percentage of taxpayers who itemize is presented by income category and census division in Tables 2a-2c. Looking across the bottom line in table 2a, it is evident that there is substantial variation in itemization across regions, ranging from 21 percent in the West South Central division to 38 percent in the New England and Middle Atlantic divisions. As expected, the higher income regions have a higher percentage of taxpayers who itemize. However, even within income categories, there is significant regional variation. For example, in the \$40,000 to \$49,999 income category, over 50 percent of taxpayers itemize in the Mountain and Pacific divisions, compared to only 27 percent who itemize in the West South Central division. Controlling for income, regional variation in house prices and state and local taxation, listed in the memo item, appear to be correlated to itemization.<sup>13</sup> For example, the New England and Middle Atlantic divisions have high itemization rates controlling for income, and have high house prices and state and local taxes. In contrast, the East South Central and West South Central divisions have low itemization rates controlling for income, and have low house prices and state and local tax rates. The relationship between itemization and these factors is examined more formally in the next section.

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<sup>13</sup> Average house prices by state are taken from the 1-in-100 unweighted (state) sample of the 1990 Census and inflated to 1995 levels using the Freddie Mac state-specific repeat sales index. To calculate the state average tax rates, we divide state income and property tax collections from the Census Bureau's 1995 State Government Tax Collections Annual Survey (U.S. Bureau of the Census, 1998) by total state personal income from the Statistical Abstract of the United States, Table (U.S. Bureau of the Census, 1999b). Data on itemization of mortgage interest in state individual income tax system are from *Significant Features of Fiscal Federalism* (Advisory Commission on Intergovernmental Relations, 1995). State-level homeownership rates are from "Housing Vacancy Survey Annual Statistics: 1995," Table 13 (U.S. Bureau of the Census, 1999a).

As shown in Tables 2b and 2c, the regional differences in itemization rates are present when looking at joint and other filers separately. However, joint filers are much more likely to itemize, with 47 percent of joint filers itemizing compared to only 18 percent of single and head of household filers. Most of this difference appears to be due to differences in income distribution between the two groups: controlling for income, itemization rates are very similar.

We next focus on the size of the MID for those taxpayers who itemize. On average, the MID accounts for about 39 percent of itemized deductions. Regionally, this measure ranges from 31 percent of itemized deductions in the Middle Atlantic to 47 percent of itemized deductions in the Pacific division.<sup>14</sup> Tables 3a-3c show the mean level of MID by income class and census division for those that claim a MID. For all divisions, the average MID is \$7,300. The Pacific division has the highest average MID at \$10,000, and the West North Central division has the lowest average MID at \$5,700. Once again regional differences exist even after controlling for income. For example, for individuals with incomes between \$50,000 to \$75,000, the average MID ranges from \$5,200 in the East North Central division to \$8,900 in the Pacific region. In general, controlling for income, average MIDs are relatively low in the central divisions (East North Central, West North Central, East South Central, and West South Central) and relatively high in the Pacific division. Comparing Tables 3b and 3c, joint filers tend to have MIDs that are about \$2,000 higher on average than single and head-of-household filers. Also, about 90 percent of joint itemizers claim a MID compared to 70 percent of single and head-of-household itemizers.

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<sup>14</sup> The mortgage interest deduction as a percent of total deductions by region are as follows: All, 38.9; New England, 38.0; Middle Atlantic, 30.5; East North Central, 36.8; West North Central, 34.8; South Atlantic, 40.7; East South Central, 38.4; West South Central, 38.5; Mountain, 43.3; Pacific, 46.6.



Interestingly, the size of the MID does not seem to be strictly related to measures of house prices. For example, the South Atlantic division has higher average mortgage interest deductions than the higher-priced Mid-Atlantic division in all income categories. This may be due to the fact that, because state and local taxes are lower in the South Atlantic division, only those with relatively large mortgage deductions would choose to itemize at all. Again, we will more formally address this question in the next section.

We also expect the tax savings from the MID to vary across regions. Three main factors determine the tax savings that the MID provides for a taxpayer. First, tax savings increase with the size of the MID. Second, given the size of the MID, tax savings increase with the taxpayer's marginal income-tax rate. Third, because the taxpayer has the option of taking the standard deduction, the amount of other itemized deductions also affects the tax savings. Calculating an average effective tax-subsidy rate – that is, the tax savings divided by MID deductions taken – summarizes how marginal tax rates and the amount of other deductions interact to affect the tax savings provided by the MID.

We use Treasury's Individual Tax Model (ITM) to estimate the tax savings from the MID. The ITM uses the SOI cross-section data and an extensive set of computer programs to simulate individual income tax liabilities and proposed changes in these liabilities.<sup>15</sup> Tax savings due to the MID are calculated by comparing taxes due under 1995 tax law with taxes due without the MID. Importantly, these are static calculations. We are attempting simply to measure the tax

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<sup>15</sup> For proposed changes, it optimizes for taxpayers. For example, if a taxpayer who is itemizing under current law would be better off taking a standard deduction under proposed law, the ITM switches the taxpayer's itemization status. See Cilke (1994) for a discussion of the ITM model.

benefit attributable to the MID as currently used without accounting for how households would change their housing consumption or portfolios if the MID were eliminated.

The estimated tax savings and subsidy rate for those taxpayers who claim the MID also are presented in Tables 3a-3c. On average, the MID is worth about \$1,500 in tax savings. As would be expected given the size of the mortgage deduction, the average tax savings attributable to the MID is highest in the Pacific division, averaging \$2,100. The average tax savings is lowest in the East South Central division, at \$1,100. The average effective tax-subsidy rate ranges from 18 percent in the East South Central Division to 23 percent in the New England and Middle Atlantic divisions. The subsidy rate varies substantially with income, ranging from 11 percent for those with incomes under \$50,000 to 36 percent for those with incomes over \$200,000. Regional differences in tax subsidy rates remain even after controlling for income. For taxpayers with incomes between \$50,000 and \$75,000, subsidy rates range from 15 percent in the West South Central to 20 percent in New England and the Middle Atlantic. Similar regional differences are observed when looking at joint and other returns separately. The regional variation in average subsidy rates, even controlling for income and filing status, points to the importance of other deductions, such as local income and property taxes, in determining the value of the MID.

Tables 4a-4c further investigate the role of other deductions in determining the tax savings attributed to the MID by calculating so-called “wasted” deductions (Follain and Ling, 1991). We calculate wasted deductions as:

$$\text{Wasted deductions} = \max(\text{standard deduction} - \text{non-MID itemized deductions}, 0)$$

By this definition, approximately half of taxpayers with a MID have wasted deductions, and these wasted deductions represent about 14 percent of all MID claimed.

The amount of wasted deductions varies substantially by income. For taxpayers with a MID and income under \$30,000, 75 percent have wasted deductions, and these wasted deductions account for 33 percent of MID claimed. For taxpayers with a MID and income over \$200,000, only 8 percent have wasted deductions, and these wasted deductions account for 2 percent of MID claimed. Controlling for income, joint filers with a MID are more likely to have wasted deductions than single or head of household filers because joint filers are allowed a higher standard deduction.

Since wasted deductions are determined by the size of deductions other than the MID, they also vary markedly by region. As expected, wasted deductions are lower in regions with high state and local income and property taxes. For example, the Mid Atlantic division has one of the highest average state income and property tax rates (3.4 and 4.5 percent respectively). As a result, only about 25 percent of taxpayers with a MID in the Middle Atlantic division have wasted deductions, and the wasted deductions represent about 8 percent of MID claimed. On the other hand, in the two south central divisions, which have very low state income and property tax rates, about 60 percent of taxpayers with MID have wasted deductions, and these wasted deductions account for about 25 percent of MID claimed. Indeed, in the West South Central division, fully one-third of those with income over \$200,000 have wasted deductions.

Limits on itemized deductions also affect the calculation of tax savings for a small number of taxpayers. In 1995, taxpayers were required to reduce allowable itemized deductions by 3 cents for every dollar of AGI over \$114,700, up to a maximum reduction of 80 percent of

allowable deductions.<sup>16</sup> Note that these limits affect the calculation of tax savings only to the extent that limited itemized deductions exceeded the amount of allowable non-MID deductions.<sup>17</sup> Only 0.3 percent of all taxpayers had their calculated tax savings affected by limits on itemized deductions, including about 6 percent of taxpayers with income over \$200,000 who claimed a MID. However, because the effects of limits on itemized deductions on tax savings depend on both AGI and the amount of non-MID deductions, there is also considerable regional variation in the effects of these limits. In the West South Central division, 20 percent of taxpayers with income over \$200,000 and claiming a MID had their tax savings affected by itemized deduction limits, compared to less than 2 percent of similar taxpayers in the Middle Atlantic division.

Because age distributions are not radically different across regions, age is unlikely to play a large role in explaining regional variation in utilization. However, age is likely to be an important factor in explaining an individual taxpayer's propensity to utilize the MID. In addition, looking at how MID utilization varies with age may offer insight on a related issue: cross-sectional data do not measure the proportion of taxpayers that have used a deduction at some point in their life. For example, a taxpayer may claim a MID deduction when she first purchases a house but she would be less likely to use the deduction as the mortgage amortizes.<sup>18</sup> However, while mortgage debt may decline with age, the probability of homeownership

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<sup>16</sup> Allowable deductions are all itemized deductions less medical expenses, investment interest expenses, and casualty, theft or wagering losses.

<sup>17</sup> That is to say, when calculating the effect of itemized deductions limits, the MID is "stacked last." The tax savings calculation is affected only to the extent that all other allowable deductions are limited and at least some of the MID is limited.

<sup>18</sup> Capozza, Green, and Hendershott (1996) argue that younger taxpayers are more likely to utilize the deduction and support this argument by showing that average loan-to-value ratios decline with age.

generally increases with age, and income follows a more hump-shaped life-cycle path. This makes it likely that utilization increases with age, at least over some range.

Tables 5a-5c report the percent itemizing and the mean level of the MID by age of the primary taxpayer and income class.<sup>19</sup> While life-cycle and cohort effects are indistinguishable in a cross-section, both the probability that a taxpayer itemizes and the size of the MID conditional on itemizing peaks in the 40 to 55 age category.

#### **IV. Estimation results**

The tabulations presented in the previous section indicate that there is substantial regional variation in utilization of the MID and suggest that this variation is related to regional variation in income, housing prices, and deductible state taxes. To further explore the factors that lead to regional differences in utilization of the MID, we estimate an empirical model of itemization and the level of mortgage interest claimed by itemizers.

We use a standard probit model to estimate the probability that a taxpayer itemizes. Estimating the level of the MID is less straightforward. Observations with no MID may actually have no mortgage interest (as is the case with itemizers who have no MID), or they may have mortgage interest, but not itemize. Because we observe only the MID for itemizers, we need to account for selection in our estimation of the level of the MID.<sup>20</sup> To correct for selection bias,

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<sup>19</sup> Age of the primary taxpayer (the first taxpayer listed on the tax return) is obtained from a match with Social Security data.

<sup>20</sup> Note that this is not a matter of truncation. Because there are other itemized deductions, we may observe itemizers that have less mortgage interest than some unobserved non-itemizers. Because of this, a Tobit model, with both non-itemizers and itemizers with no MID coded as zeros, would be inappropriate.

we use the two-equation maximum-likelihood correction procedure first proposed by Heckman (1979).<sup>21</sup>

Preliminary estimates using the full SOI cross-section showed differences between weighted and unweighted regressions.<sup>22</sup> However, computational constraints did not allow us to estimate the maximum-likelihood Heckman model on the weighted sample. Instead we estimated the model using only the CWHS component of the cross section, which is a simple random sample of tax returns with over 20,000 observations.<sup>23</sup> Descriptive statistics from both samples are included in the appendix. Because married and unmarried taxpayers have similar itemization behavior conditional on income, and because variation across region and income in the size of the MID is similar for both groups, we use the full sample to estimate our model and control for filing status using dummy variables.<sup>24</sup>

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<sup>21</sup> This method of selection adjustment relies on very stringent functional form assumptions. For discussions, see for example Goldberger (1983) and Stolzenberg and Relles (1990). Our results appear to be robust to our choice of functional form, however, as coefficient estimates using the Heckman model are similar to both OLS and Tobit regressions (both using only itemizers). Results from these regressions are available from the authors.

<sup>22</sup> In particular, we estimated probit models of itemization status and ordinary least squares (OLS) models of the size of the MID. In both sets of regressions, coefficient estimates differed between weighted and unweighted regressions. This is not surprising as the criterion for the sample stratum were based on many factors, not all of which we control for in our regression.

<sup>23</sup> Results from probit regressions for itemization status and OLS estimates for size of the MID using the CWHS are very similar to the results using the weighted cross section. Results from these regressions are available from the authors.

<sup>24</sup> We also estimated the model separately for married and unmarried taxpayers. Results from these regressions are available from the authors. Results were qualitatively similar for both subsets. Footnotes 27 and 30 note specific coefficient estimates that differed.

#### *IV A. Probability of itemizing*

The first step is to estimate the probability of itemizing. The dependent variable is equal to one if the taxpayer itemizes and zero otherwise. We estimate the probability of itemizing with a probit that includes income, house prices, state taxes, and demographic variables as explanatory variables. Because itemization is a nonlinear function of income, we use a cubic income term in our probit. For our measure of house prices, we use the state-level average housing prices from the 1990 Census inflated to 1995 levels using the Freddie Mac state-specific repeat sales index. The state tax variables include the state average individual income tax rate (total state level individual income tax revenue divided by total state level personal income), the average property tax rate (total state level property tax revenue divided by total state level personal income), and an indicator of whether the state allows mortgage interest expenses to be deducted. The SOI data have very little demographic detail on taxpayers. We include filing status both because married-joint and head-of-household filers face a higher standard deduction than singles and because married couples are more likely to own homes.<sup>25</sup> We also control for the number of dependent exemptions and include a quadratic in age. Finally, because Coulson (1998) finds that homeownership is not completely explained by income, marital status, number of children, and house prices, we use the state-level homeownership rate as a proxy for other characteristics that influence homeownership, but which we cannot observe in the tax data.<sup>26</sup> Descriptive statistics for the variables used in the estimation are shown in Appendix Table 1.

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<sup>25</sup> According to data from the 1995 national AHS, 78 percent of married couples are homeowners compared to 48 percent of singles.

<sup>26</sup> In particular, Coulson (1997) finds ethnicity and immigrant status influence state homeownership rates. In addition there is unexplained variation.

The results of the probit estimation are shown in the first column of Table 6. All variables have the expected sign and are statistically significant. The results indicate that the probability of itemization increases with income, average state housing prices, and state income and property tax rates. To assess the economic significance of the coefficients, we simulate the probability of itemizing by fixing all the continuous variables at their means and setting all dummy variables to zero with the exception of joint filing status and the presence of a state MID. The simulated probability of itemizing is 39.5 percent. Keeping all other variables fixed, we then change a variable of interest to assess its marginal effect.

The probability of itemizing increases with income, and the rate of increase accelerates between \$0 and \$60,000 of income and decelerates thereafter. Evaluated at the mean, a 10 percent increase in income (from \$44,402 to \$48,842) is associated with a 12.3 percent (4.9 percentage point) increase in the estimated probability of itemization. The predicted probability of itemizing increases fairly steadily for taxpayers with incomes between \$25,000 and \$75,000, rising from 20.2 percent to 70.9 percent. The predicted probability of itemization hits 90 percent around \$105,000 of income and increases slowly thereafter.

Residents of states with higher average housing prices are also more likely to itemize, controlling for demographics, income and deductible state taxes. A 10 percent increase in average housing prices (from \$120,000 to \$132,000) is associated with a 4.6 percent (1.8 percentage point) increase in the estimated probability of itemizing. Using the range of observed census-division level average house prices, predicted itemization rates range from 33.0 percent (average house price of \$76,000) to 48.5 percent (average house price of \$178,000), a range of 39 percent around the mean predicted level of itemization.



Residents of states with high levels of income and property taxation are more likely to itemize. The simulations show that increasing the average state income tax rate by 10 percent (from 2.37 percent to 2.60 percent) increases the probability of itemizing by 1.6 percent (0.6 percentage points). Although this is a fairly modest elasticity, the range of observed state income-tax rates is large. Using minimum and maximum census-division level measures of state income taxes, predicted itemization rates range from 35.2 percent (average state income-tax rate of 0.7) to 42.2 percent (average state income-tax of 3.4 percent), a range of about 18 percent around the mean predicted level of itemization.

Increasing the average state property tax rate by 10 percent (from 3.53 to 3.88 percent) increases the probability of itemizing by 0.9 percent (0.4 percentage points). Again, using the range of observed census-division level average property-tax rates, predicted itemization rates range from 37.9 percent (property-tax rate of 1.9 percent) to 40.7 percent (property-tax rate of 4.7 percent), a range of over 7 percent around the mean predicted level of itemization.

Residents of states that allow deduction of mortgage interest are more likely to itemize. The simulated probability of itemizing falls by 12 percent (4.6 percentage points) if a state does not have a state MID. Note that of the 17 states that do not allow a mortgage interest deduction, 7 also have no income tax. To some extent, this variable may be capturing some of the effect of states not having an income tax.<sup>27</sup>

Demographic variables also have the expected correlations with itemization. Itemization increases with age but at a decreasing rate – the probability a taxpayer itemizes peaks at 54 and

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<sup>27</sup> The model does control for average income tax rates, so individuals in states with no MID will have an average state income tax rate of zero. However, any additional effect not captured by the rate may be captured by the no state MID dummy.

declines thereafter. Controlling for other factors that effect the level of itemized deductions, such as income, house prices, and state income and property tax rates, joint filers and head-of-household filers are less likely to itemize than single filers because they face a higher standard deduction.<sup>28</sup> Tax filing units with more dependents are more likely to itemize, but the likelihood of itemizing decreases with more than three dependents. Finally, state homeownership rates are positively correlated with itemization. A 10 percent increase in the state homeownership rate (from 65 percent to 71.5 percent) is associated with a 7.2 percent (2.9 percentage point) increase in itemization. Using the range of observed census-division level homeownership rates, predicted itemization rates range from 36.2 percent (average homeownership rate of 57 percent) to 41.8 percent (average homeownership rate of 70 percent), a range of 14 percent around the mean predicted level of itemization.

#### *IV B. Level of MID claimed*

The level of MID is observed only for those taxpayers who itemize. To correct for selection bias, we use the two-equation maximum-likelihood correction procedure first proposed by Heckman (1979). To further identify the model, we exclude state homeownership rates from the equation that estimates the level of the deduction. Note that the homeownership rate is meant to proxy for unobserved characteristics that vary by region and affect homeownership. We expect that these characteristics affect whether one owns a home, but not the amount of mortgage

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<sup>28</sup> We also estimated the itemization probits separately for married and unmarried taxpayers. The results indicate that house prices and state tax rates have larger positive effects on the probability of itemizing for joint filers than for single and head-of-household filers. This is expected given the larger standard deduction faced by joint filers. The separate regression results also indicate that income has a smaller effect on itemization for joint filers than for the

interest. The results of the probit equation on itemization are discussed above. The results of the equation estimating the level of the deduction are shown in the second column of Table 6.

Again, all of the estimated coefficients have the expected signs. The amount of mortgage interest deducted increases, but at a decreasing rate, with income. Evaluated at the mean, a 10 percent increase in income (from \$44,402 to \$48,842) leads to a 1.5 percent increase in the predicted size of the MID (from \$7,271 to \$7,379). Near the mean level of income, a \$1,000 increase in income is associated with a \$24 increase in MID. The MID also increases with housing prices. A 10 percent increase in average state housing prices (from \$120,000 to \$132,000) is associated with a 5.1 percent increase in the predicted size of the MID (from \$7,271 to \$7,379).

Higher state and local income and property taxes are associated with a lower MID, conditional on itemizing. This is because higher state and local taxes increase non-MID deductions and thus lower the level of mortgage interest that is necessary to generate total deductions that exceed the standard deduction. A 10 percent increase in average state income-tax rates (from 2.37 to 2.60 percent) is associated with a 2.2 percent decline in the predicted size of the MID (from \$7,271 to \$7,109). A 10 percent increase in property taxes (from 3.53 to 3.88 percent) is associated with a 3.6 percent decline in the predicted size of the MID (from \$7,271 to \$7,008). Itemizers in states that allow mortgage interest to be deducted from state income taxes have federal MID's that are, on average, \$578 higher than those in states without a MID.

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unmarried taxpayers and that state homeownership rates are positively correlated with itemization for married taxpayers and negatively for unmarried taxpayers.

The demographic variables also show the expected correlations with the size of the MID claimed. Setting all other variables at their mean, the predicted size of the MID peaks at age 24 and declines at a slightly increasing rate thereafter.<sup>29</sup> At the mean age (43.8 years) the MID declines about \$60 with an additional year of age. Both joint and head-of-household filers who itemize tend to have a higher level of MID than do single-filers.<sup>30</sup> Having one dependent increases the MID by \$815 on average; however, an additional dependent increases the MID by only about \$260 over the first dependent.

#### *IV C. Sources of regional variation*

It is clear from the regression results that state level measures of house prices and state and local income and property taxes are significant determinants of the utilization of the MID. A related question is how important are these variables in explaining the observed pattern of regional variance in utilization. To help answer this question, we perform a set of simulations that use the models estimated above to explore the contribution that regional variation in house prices and state taxes make to the observed pattern of MID utilization.

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<sup>29</sup> This may seem to be a very low age for the size of the MID to peak. However, the effect of age is being estimated keeping all else equal. So, for example, if two taxpayers have the same current-year income, the younger taxpayer may consume more housing (and have a larger mortgage deduction) because the younger taxpayer has higher lifetime income. In addition, all else equal, younger taxpayers may have more mortgage debt due to mortgage amortization and house price appreciation (since they are more likely to have been a homeowner for a shorter period of time). Recall from table 5 that, unconditionally, the size of the MID peaks between the ages 40 and 45.

<sup>30</sup> Again, we also estimate this model separately for married and unmarried taxpayers. The level of MID claimed by joint filers was less sensitive to income and more sensitive to house prices and state taxes than was the case for unmarried taxpayers.

For each observation in the cross section sample we calculate a predicted probability of itemization.<sup>31</sup> Table 7 presents the actual and predicted rates of itemization by region. The model predicts the regional variation in itemization fairly well (correlation across regions between the two average mean values equals 0.98). As shown at the bottom of Table 7, variance in percent itemizing across regions is 17.5, while variance of predicted percent itemizing across regions is 17.2. To gauge the importance of regional variation in house prices, we next set each observation's value of average state house prices equal to the national sample mean and recalculate the predicted probability of itemization. The results of this exercise, shown in the third row of the table, indicate that there would be much less regional variation in itemization rates if not for regional variation in house prices. As shown in the bottom of the table, the variance across regions of the predicted percent itemizing falls from 17.2 to 10.2, a drop of 40.7 percent. When we set both house prices and state tax variables equal to the sample means, regional variance in itemization falls further to 6.7, a drop of 61.3 percent. Thus regional differences in state average housing prices and state average income and property taxes account for just over 60 percent of the predicted regional variance in itemization.

We next predict the level of MID claimed. For each observation, the predicted MID is set equal to the predicted probability of itemizing multiplied by the predicted level of MID conditional on itemizing. In general, mean predicted levels of MID were close to mean observed MID for all income groups except those with incomes over \$200,000. The outliers in this group had such high predicted MID that they greatly distorted the mean prediction. For that reason, the

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<sup>31</sup> Note that the regression estimates come from the CWHS sample, while the simulations use the larger cross section sample. The CWHS sample is a component of the larger cross section file, but, to some extent, this is an out of sample simulation.

results presented in Table 8 exclude observations with income over \$500,000. Although the model tends to overpredict the mean level of MID, the predicted MID captures the regional variation quite accurately (correlation across regions between the two average mean values equals 0.98). The variance across regions of the average level of MID was 1741, while the variance of average predicted MID was 1592. When state-level average house prices are set equal to the sample mean, variance in the predicted level of MID declines 75.6 percent. When house prices and state tax variables are set equal to sample means, variance declines 66.6. Note that house prices account for more regional variation than house prices and state taxes combined. This is because house prices and state tax rates are positively correlated, but house prices are positively correlated with the size of the deduction, while state and local taxes are negatively correlated with the size of the deduction. So, for example, when New Englanders have their high average house prices set at the sample mean, their predicted MID declines and moves closer to the sample average prediction. However, when we then lower New Englanders' high average tax rates to the sample mean, their predicted MID increases and moves away from the sample average prediction. Thus, regional differences in state average housing prices and state average income and property taxes account for two-thirds of the predicted regional variance in the average size of the MID.

## **V. Conclusion**

Regional utilization of the MID varies substantially across the nine census divisions. For example, only 21 percent of taxpayers itemize in the West South Central division, while 38 percent itemize in the New England and Middle Atlantic divisions. Conditional on claiming a MID, the average size of the MID ranges from \$5,700 in the West North Central division to

\$10,000 in the Pacific division, and the average tax savings associated with the MID ranges from \$1,100 in the East South Central division to \$2,100 in the Pacific division. Some of the variation is attributable to differences in income distribution, but even controlling for income there is substantial variation. We find that individual characteristics, such as age, filing status, and number of dependants, as well as regional characteristics, such as housing prices and state and local taxes, are important determinants of both the probability a taxpayer itemizes and the amount of mortgage interest deducted. We find that regional variation in house prices and state income and property tax rates account for 61 percent of the regional variation in the probability of itemizing and 67 percent of the regional variation in the amount of mortgage interest deducted by itemizers. This result suggests that a change in the tax treatment of mortgage interest would induce changes in the demand for housing that would vary spatially, even for taxpayers with similar characteristics.

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**Table 1a: The Distribution of Tax Returns by Income Class and Census Division  
(1995 income levels, tax return counts are in thousands)**

Income Class <sup>1</sup>	All Divisions <sup>2</sup>	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
\$0 to \$14,999	25,798	1,050	3,156	3,797	1,615	4,856	1,810	3,278	1,606	4,431
\$15,000 to \$29,999	29,019	1,415	3,984	4,670	2,062	5,689	1,984	3,095	1,753	4,233
\$30,000 to \$39,999	13,677	830	2,077	2,250	1,106	2,412	764	1,282	830	2,087
\$40,000 to \$49,999	9,679	582	1,365	1,698	721	1,736	500	891	576	1,586
\$50,000 to \$59,999	7,265	395	1,137	1,366	570	1,283	348	638	441	1,081
\$60,000 to \$74,999	6,975	407	1,118	1,239	417	1,217	373	635	423	1,123
\$75,000 to \$99,999	5,924	336	1,015	993	425	1,061	280	482	318	1,007
\$100,000 to \$199,999	4,882	330	867	772	338	801	182	422	263	893
over \$200,000	1,542	121	293	248	85	271	59	130	73	251
Total <sup>3</sup>	105,346	5,486	15,064	17,094	7,389	19,402	6,320	10,941	6,338	16,850

**(1995 income levels, percent within region)**

Income Class <sup>1</sup>	All Divisions <sup>2</sup>	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
\$0 to \$14,999	24.5%	19.1%	21.0%	22.2%	21.9%	25.0%	28.6%	30.0%	25.3%	26.3%
\$15,000 to \$29,999	27.5%	25.8%	26.4%	27.3%	27.9%	29.3%	31.4%	28.3%	27.7%	25.1%
\$30,000 to \$39,999	13.0%	15.1%	13.8%	13.2%	15.0%	12.4%	12.1%	11.7%	13.1%	12.4%
\$40,000 to \$49,999	9.2%	10.6%	9.1%	9.9%	9.8%	8.9%	7.9%	8.1%	9.1%	9.4%
\$50,000 to \$59,999	6.9%	7.2%	7.5%	8.0%	7.7%	6.6%	5.5%	5.8%	7.0%	6.4%
\$60,000 to \$74,999	6.6%	7.4%	7.4%	7.2%	5.6%	6.3%	5.9%	5.8%	6.7%	6.7%
\$75,000 to \$99,999	5.6%	6.1%	6.7%	5.8%	5.8%	5.5%	4.4%	4.4%	5.0%	6.0%
\$100,000 to \$199,999	4.6%	6.0%	5.8%	4.5%	4.6%	4.1%	2.9%	3.9%	4.1%	5.3%
over \$200,000	1.5%	2.2%	1.9%	1.5%	1.2%	1.4%	0.9%	1.2%	1.2%	1.5%
Total <sup>3</sup>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Table 1b: Joint Tax Returns -- Distribution by Income Class and Census Division  
(1995 income levels, tax return counts are in thousands)**

Income Class <sup>1</sup>	All Divisions <sup>2</sup>	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
\$0 to \$14,999	3,506	90	363	378	190	585	242	598	292	735
\$15,000 to \$29,999	9,074	368	986	1,267	722	1,799	797	1,188	639	1,245
\$30,000 to \$39,999	7,396	388	938	1,203	695	1,371	480	778	506	1,022
\$40,000 to \$49,999	6,590	419	798	1,209	558	1,214	409	629	407	930
\$50,000 to \$59,999	5,521	287	791	1,060	479	989	309	512	347	744
\$60,000 to \$74,999	5,814	347	839	1,052	370	1,032	335	560	359	909
\$75,000 to \$99,999	5,191	298	870	865	388	940	260	441	281	841
\$100,000 to \$199,999	4,291	300	746	698	316	703	166	376	226	748
over \$200,000	1,354	110	253	219	78	238	54	117	64	213
Total <sup>3</sup>	49,024	2,612	6,607	7,979	3,824	8,912	3,064	5,259	3,147	7,447

**(1995 income levels, percent within region)**

Income Class <sup>1</sup>	All Divisions <sup>2</sup>	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
\$0 to \$14,999	7.2%	3.4%	5.5%	4.7%	5.0%	6.6%	7.9%	11.4%	9.3%	9.9%
\$15,000 to \$29,999	18.5%	14.1%	14.9%	15.9%	18.9%	20.2%	26.0%	22.6%	20.3%	16.7%
\$30,000 to \$39,999	15.1%	14.9%	14.2%	15.1%	18.2%	15.4%	15.7%	14.8%	16.1%	13.7%
\$40,000 to \$49,999	13.4%	16.0%	12.1%	15.2%	14.6%	13.6%	13.4%	12.0%	12.9%	12.5%
\$50,000 to \$59,999	11.3%	11.0%	12.0%	13.3%	12.5%	11.1%	10.1%	9.7%	11.0%	10.0%
\$60,000 to \$74,999	11.9%	13.3%	12.7%	13.2%	9.7%	11.6%	10.9%	10.6%	11.4%	12.2%
\$75,000 to \$99,999	10.6%	11.4%	13.2%	10.8%	10.1%	10.5%	8.5%	8.4%	8.9%	11.3%
\$100,000 to \$199,999	8.8%	11.5%	11.3%	8.7%	8.3%	7.9%	5.4%	7.1%	7.2%	10.0%
over \$200,000	2.8%	4.2%	3.8%	2.7%	2.0%	2.7%	1.8%	2.2%	2.0%	2.9%
Total <sup>3</sup>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Table 1c: Single and Head of Household Tax Returns --- Distribution by Income Class and Census Division  
(1995 income levels, tax return counts are in thousands)**

Income Class <sup>1</sup>	All Divisions <sup>2</sup>	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
\$0 to \$14,999	22,292	960	2,793	3,419	1,424	4,271	1,568	2,680	1,313	3,696
\$15,000 to \$29,999	19,945	1,047	2,998	3,403	1,340	3,890	1,187	1,907	1,114	2,989
\$30,000 to \$39,999	6,280	443	1,139	1,047	411	1,041	285	505	324	1,065
\$40,000 to \$49,999	3,089	163	567	490	163	521	91	261	169	656
\$50,000 to \$59,999	1,744	108	347	306	91	294	39	126	94	338
\$60,000 to \$74,999	1,161	60	279	187	47	184	38	76	64	214
\$75,000 to \$99,999	733	38	145	128	37	121	20	41	37	166
\$100,000 to \$199,999	591	30	121	74	23	97	16	46	37	145
over \$200,000	188	12	39	29	8	33	5	12	9	38
Total <sup>3</sup>	56,322	2,874	8,457	9,116	3,565	10,489	3,256	5,682	3,191	9,403

**(1995 income levels, percent within region)**

Income Class <sup>1</sup>	All Divisions <sup>2</sup>	New England	Middle Atlantic	East North Central	North Central	South Atlantic	East South Central	South Central	Mountain	Pacific
\$0 to \$14,999	39.6%	33.4%	33.0%	37.5%	39.9%	40.7%	48.2%	47.2%	41.1%	39.3%
\$15,000 to \$29,999	35.4%	36.4%	35.4%	37.3%	37.6%	37.1%	36.5%	33.6%	34.9%	31.8%
\$30,000 to \$39,999	11.2%	15.4%	13.5%	11.5%	11.5%	9.9%	8.8%	8.9%	10.2%	11.3%
\$40,000 to \$49,999	5.5%	5.7%	6.7%	5.4%	4.6%	5.0%	2.8%	4.6%	5.3%	7.0%
\$50,000 to \$59,999	3.1%	3.8%	4.1%	3.4%	2.6%	2.8%	1.2%	2.2%	2.9%	3.6%
\$60,000 to \$74,999	2.1%	2.1%	3.3%	2.1%	1.3%	1.8%	1.2%	1.3%	2.0%	2.3%
\$75,000 to \$99,999	1.3%	1.3%	1.7%	1.4%	1.0%	1.2%	0.6%	0.7%	1.2%	1.8%
\$100,000 to \$199,999	1.0%	1.0%	1.4%	0.8%	0.6%	0.9%	0.5%	0.8%	1.2%	1.5%
over \$200,000	0.3%	0.4%	0.5%	0.3%	0.2%	0.3%	0.2%	0.2%	0.3%	0.4%
Total <sup>3</sup>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Table 2a: The Percent of Tax Returns with Itemized Deductions by Income Class and Census Division  
(1995 income levels)**

Income Class <sup>1</sup>	All Divisions <sup>2</sup>	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
\$0 to \$14,999	3.1	4.5	4.3	2.5	1.6	3.2	1.9	2.5	2.3	4.2
\$15,000 to \$29,999	13.1	14.6	16.3	10.8	13.7	13.6	7.5	7.6	14.8	17.6
\$30,000 to \$39,999	29.1	28.0	33.2	23.9	27.3	29.4	24.3	20.9	32.0	37.3
\$40,000 to \$49,999	44.3	49.5	48.2	38.4	42.5	47.8	39.9	26.8	52.0	51.0
\$50,000 to \$59,999	59.0	66.6	66.4	57.1	57.7	59.3	49.7	45.2	63.4	60.4
\$60,000 to \$74,999	72.2	72.8	77.4	73.6	70.8	71.2	66.1	54.6	74.5	78.8
\$75,000 to \$99,999	83.4	90.2	88.0	82.3	86.7	81.7	73.6	70.0	78.3	89.0
\$100,000 to \$199,999	90.5	95.1	94.3	91.1	91.6	89.9	87.1	80.8	86.4	92.4
Over \$200,000	91.7	98.3	97.4	90.0	97.1	90.6	83.0	79.8	93.5	92.6
Total <sup>3</sup>	31.4	37.8	38.2	30.7	31.3	30.7	22.2	20.7	31.8	35.9
Memo:										
Average house price (\$1,000)	120	163	146	102	85	105	76	77	116	178
Average state income tax rate <sup>4</sup>	2.4	2.9	3.4	2.9	2.7	2.2	1.7	0.7	2.1	2.4
Average state property tax rate <sup>4</sup>	3.5	4.7	4.5	3.8	3.7	3.2	1.9	3.1	3.2	3.3
Average age of primary	43.8	44.1	44.8	44.0	44.4	43.8	42.5	42.6	43.6	43.6
Percent filing joint	46.5	47.6	43.9	46.7	51.7	45.9	48.5	48.0	49.7	44.2
Homeownership rate (percent)	65	64	61	69	70	68	70	63	66	57

**Table 2b: Joint Tax Returns -- Percent with Itemized Deductions by Income Class and Census Division  
(1995 income levels)**

Income Class <sup>1</sup>	All Divisions <sup>2</sup>	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
\$0 to \$14,999	6.5	15.9	7.9	4.7	3.6	7.5	7.2	4.4	4.1	8.3
\$15,000 to \$29,999	14.5	16.5	23.3	13.6	10.8	14.4	7.9	7.5	12.7	22.9
\$30,000 to \$39,999	26.0	26.0	30.3	19.7	21.0	27.3	19.3	18.1	30.0	38.6
\$40,000 to \$49,999	42.4	52.8	47.0	33.8	41.2	45.1	38.8	25.6	50.1	52.3
\$50,000 to \$59,999	58.1	66.4	67.4	56.0	58.4	58.9	47.7	44.5	64.1	58.0
\$60,000 to \$74,999	71.6	73.1	75.7	74.3	67.6	70.0	65.5	56.2	75.1	78.1
\$75,000 to \$99,999	83.7	90.8	87.6	85.2	87.3	82.2	74.3	70.1	75.6	88.7
\$100,000 to \$199,999	91.0	95.3	93.7	92.3	91.5	90.4	86.8	82.2	88.7	92.7
Over \$200,000	92.2	98.3	97.9	90.2	97.2	91.7	82.8	79.9	94.9	93.5
Total <sup>3</sup>	47.4	57.7	57.6	47.6	44.4	46.8	35.4	32.0	45.3	54.2

Memo:

Average house price (\$1,000)	118	163	145	102	85	105	77	77	117	177
Average state income tax rate <sup>4</sup>	2.4	2.9	3.3	2.9	2.7	2.1	1.7	0.7	2.1	2.4
Average state property tax rate <sup>4</sup>	3.5	4.7	4.5	3.8	3.7	3.2	1.9	3.2	3.2	3.3
Average age of primary	47.5	48.1	48.9	47.6	47.6	47.8	46.1	45.9	46.7	47.3
Homeownership rate (percent)	65	65	62	69	70	68	69	63	66	57

**Table 2c: Single and Head of Household Tax Returns --- Percent of with Itemized Deductions by Income Class and Census Division  
(1995 income levels)**

Income Class <sup>1</sup>	All Divisions <sup>2</sup>	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
\$0 to \$14,999	2.6	3.4	3.8	2.2	1.3	2.7	1.1	2.0	2.0	3.3
\$15,000 to \$29,999	12.5	13.9	14.0	9.8	15.2	13.2	7.3	7.7	16.0	15.4
\$30,000 to \$39,999	32.7	29.8	35.6	28.8	38.1	32.2	32.7	25.3	35.0	36.0
\$40,000 to \$49,999	48.2	41.0	49.8	49.8	46.8	54.1	44.9	29.7	56.5	49.2
\$50,000 to \$59,999	61.7	67.0	64.3	61.0	53.8	60.7	65.6	48.2	60.7	65.6
\$60,000 to \$74,999	75.2	71.1	82.3	69.7	95.5	78.1	70.8	42.7	70.9	81.9
\$75,000 to \$99,999	81.2	85.1	90.5	62.5	80.2	77.9	64.8	68.9	99.0	90.2
\$100,000 to \$199,999	87.1	93.9	97.7	79.3	93.1	85.6	89.6	69.3	72.3	90.8
over \$200,000	88.0	98.2	93.9	88.1	96.1	83.2	84.2	79.5	83.9	87.9
Total <sup>3</sup>	17.6	19.7	23.1	15.8	17.1	17.0	9.9	10.2	18.6	21.5
Memo:										
Average house price (\$1,000)	122	164	148	103	85	106	75	78	117	178
Average state income tax rate <sup>4</sup>	2.4	2.9	3.5	2.9	2.6	2.1	1.6	0.7	2.0	2.4
Average state property tax rate <sup>4</sup>	3.5	4.7	4.5	3.8	3.7	3.2	1.9	3.2	3.2	3.3
Average age of primary	40.5	40.4	41.6	40.8	40.9	40.3	39.1	39.6	40.5	40.6
Homeownership rate (percent)	64	64	61	69	70	67	69	63	65	57

**Table 3a: Average Home Mortgage Interest Deduction (MID), Average Tax Saving, and Average Effective Subsidy Rate Conditional on MID>0 (1995 income levels)**

Income Class <sup>1</sup>	All Divisions <sup>2</sup>			New England			Mid Atlantic			East North Central			West North Central		
	Average Tax MID (\$)	Subsidy Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Subsidy Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Subsidy Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Subsidy Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Subsidy Savings (\$)	Subsidy Rate
\$0 to \$49,999	5,609	609	10.9	5,484	624	11.4	5,198	613	11.8	4,599	494	10.7	4,501	483	10.7
\$50,000 to \$74,999	6,386	1,197	18.7	6,347	1,259	19.8	5,934	1,198	20.2	5,234	970	18.5	5,376	970	18.0
\$75,000 to \$99,999	7,745	1,992	25.7	7,547	2,043	27.1	6,740	1,817	27.0	6,490	1,707	26.3	5,840	1,532	26.2
\$100,000 to \$199,999	10,356	2,975	28.7	10,435	3,067	29.4	9,261	2,715	29.3	8,750	2,537	29.0	7,927	2,312	29.2
\$200,000 and above	17,828	6,349	35.6	17,879	6,574	36.8	17,916	6,529	36.4	14,438	5,217	36.1	13,551	4,937	36.4
Total <sup>3</sup>	7,300	1,532	21.0	7,438	1,692	22.7	6,891	1,576	22.9	6,056	1,302	21.5	5,693	1,167	20.5
Memo: Percent of returns with MID>0	26.4			31.5			28.1			26.3			25.9		

  

Income Class <sup>1</sup>	South Atlantic			East South Central			West South Central			Mountain			Pacific		
	Average Tax MID (\$)	Subsidy Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Subsidy Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Subsidy Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Subsidy Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Subsidy Savings (\$)	Subsidy Rate
\$0 to \$49,999	5,336	567	10.6	4,576	421	9.2	4,841	461	9.5	5,723	616	10.8	7,738	851	11.0
\$50,000 to \$74,999	6,513	1,192	18.3	5,588	924	16.5	5,118	788	15.4	6,882	1,201	17.5	8,912	1,761	19.8
\$75,000 to \$99,999	8,155	2,050	25.1	6,478	1,419	21.9	6,549	1,439	22.0	7,553	1,879	24.9	11,035	2,888	26.2
\$100,000 to \$199,999	10,700	3,069	28.7	8,665	2,332	26.9	9,690	2,610	26.9	10,326	2,896	28.0	13,860	4,004	28.9
\$200,000 and above	17,795	6,252	35.1	14,503	4,919	33.9	15,193	5,039	33.2	15,849	5,522	34.8	24,351	8,642	35.5
Total <sup>3</sup>	7,193	1,463	20.3	5,936	1,073	18.1	6,426	1,251	19.5	7,150	1,349	18.9	10,047	2,110	21.0
Memo: Percent of returns with MID>0	25.8			18.2			16.4			27.0			29.4		



**Table 3b: Joint Filers' Average Home Mortgage Interest Deduction (MID), Average Tax Saving and Average Effective Subsidy Rate Conditional on MID>0 (1995 income levels)**

Income Class <sup>1</sup>	All Divisions <sup>2</sup>			New England			Mid-Atlantic			East North Central			West North Central		
	Average Tax MID (\$)	Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Savings (\$)	Subsidy Rate
\$0 to \$49,999	6,177	538	8.7	6,151	590	9.6	5,962	578	9.7	4,816	384	8.0	4,859	378	7.8
\$50,000 to \$74,999	6,452	1,126	17.4	6,501	1,215	18.7	5,969	1,112	18.6	5,382	936	17.4	5,524	951	17.2
\$75,000 to \$99,999	7,695	1,957	25.4	7,633	2,056	26.9	6,679	1,781	26.7	6,443	1,678	26.0	5,782	1,506	26.0
\$100,000 to \$199,999	10,357	2,962	28.6	10,570	3,098	29.3	9,267	2,701	29.1	8,770	2,540	29.0	7,939	2,309	29.1
\$200,000 and above	17,939	6,399	35.7	18,110	6,663	36.8	18,232	6,664	36.6	14,357	5,199	36.2	13,790	5,018	36.4
Total <sup>3</sup>	7,823	1,675	21.4	8,095	1,885	23.3	7,434	1,730	23.3	6,458	1,427	22.1	6,089	1,274	20.9
Memo: Percent of returns with MID>0	42.3			52.0			48.6			42.9			39.4		

  

Income Class <sup>1</sup>	South Atlantic			East South Central			West South Central			Mountain			Pacific		
	Average Tax MID (\$)	Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Savings (\$)	Subsidy Rate
\$0 to \$49,999	6,001	514	8.6	4,883	356	7.3	5,046	406	8.0	6,210	536	8.6	8,506	761	8.9
\$50,000 to \$74,999	6,524	1,110	17.0	5,654	898	15.9	5,205	763	14.7	6,895	1,098	15.9	9,110	1,673	18.4
\$75,000 to \$99,999	8,201	2,046	24.9	6,511	1,414	21.7	6,524	1,421	21.8	7,849	1,935	24.7	10,922	2,819	25.8
\$100,000 to \$199,999	10,754	3,069	28.5	8,651	2,326	26.9	9,730	2,597	26.7	10,507	2,908	27.7	13,926	4,003	28.7
\$200,000 and above	18,034	6,340	35.2	14,398	4,890	34.0	15,262	5,080	33.3	15,646	5,482	35.0	24,604	8,735	35.5
Total <sup>3</sup>	7,846	1,632	20.8	6,269	1,147	18.3	6,813	1,374	20.2	7,665	1,454	19.0	10,831	2,310	21.3
Memo: Percent of returns with MID>0	42.5			31.2			27.6			41.2			49.9		

**Table 3c: Single and Head of Household Filers' Average Home Mortgage Interest Deduction (MID), Average Tax Saving and Average Effective Subsidy Rate Conditional on MID>0 (1995 income levels)**

Income Class <sup>1</sup>	All Divisions <sup>2</sup>			New England			Mid-Atlantic			East North Central			West North Central		
	Average Tax MID (\$)	Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Savings (\$)	Subsidy Rate
\$0 to \$49,999	4,966	688	13.9	4,610	667	14.5	4,389	651	14.8	4,388	601	13.7	4,078	607	14.9
\$50,000 to \$74,999	6,063	1,545	25.5	5,608	1,471	26.2	5,804	1,526	26.3	4,485	1,142	25.5	4,191	1,119	26.7
\$75,000 to \$99,999	8,289	2,368	28.6	6,345	1,869	29.5	7,265	2,128	29.3	7,062	2,068	29.3	6,820	1,980	29.0
\$100,000 to \$199,999	10,340	3,130	30.3	8,786	2,675	30.4	9,198	2,855	31.0	8,397	2,483	29.6	7,682	2,372	30.9
\$200,000 and above	16,675	5,832	35.0	14,450	5,263	36.4	15,238	5,382	35.3	15,412	5,427	35.2	10,105	3,764	37.2
Total <sup>3</sup>	5,764	1,113	19.3	5,254	1,052	20.0	5,371	1,145	21.3	4,803	911	19.0	4,350	803	18.5
Memo:															
Percent of returns with MID>0	12.5			14.2			13.5			12.0			12.5		

  

Income Class <sup>1</sup>	South Atlantic			East South Central			West South Central			Mountain			Pacific		
	Average Tax MID (\$)	Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Savings (\$)	Subsidy Rate	Average Tax MID (\$)	Savings (\$)	Subsidy Rate
\$0 to \$49,999	4,593	626	13.6	4,074	528	13.0	4,618	522	11.3	5,144	712	13.8	6,852	954	13.9
\$50,000 to \$74,999	6,455	1,630	25.3	4,944	1,170	23.7	4,529	955	21.1	6,812	1,761	25.9	8,177	2,088	25.5
\$75,000 to \$99,999	7,483	2,109	28.2	5,435	1,580	29.1	6,941	1,726	24.9	5,174	1,427	27.6	11,820	3,362	28.4
\$100,000 to \$199,999	10,005	3,061	30.6	8,852	2,409	27.2	9,175	2,776	30.3	8,763	2,791	31.8	13,411	4,011	29.9
\$200,000 and above	15,228	5,308	34.9	16,031	5,334	33.3	14,334	4,539	31.7	18,021	5,951	33.0	22,277	7,884	35.4
Total <sup>3</sup>	5,336	983	18.4	4,561	767	16.8	5,066	820	16.2	5,756	1,064	18.5	8,093	1,611	19.9
Memo:															
Percent of returns with MID>0	12.7			7.1			7.3			15.0			15.9		

**Table 4a: Taxpayers with MID>0 with Wasted MID by Census Region and Income Class<sup>5</sup>  
(1995 income levels)**

Income Class <sup>1</sup>	All Divisions <sup>2</sup>		New England		Mid-Atlantic		East North Central		West North Central	
	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted
\$0 to \$29,999	75.3	33.3	68.6	27.9	63.0	24.9	77.7	38.7	75.6	35.0
\$30,000 to \$49,999	67.6	26.0	65.4	21.4	52.4	17.7	68.9	30.6	77.2	35.6
\$50,000 to \$74,999	55.1	17.1	53.2	11.2	39.3	9.0	57.7	18.7	57.7	20.3
\$75,000 to \$99,999	32.1	6.9	24.7	2.6	13.2	2.3	31.6	5.9	34.0	6.0
\$100,000 to \$199,999	13.2	2.5	4.2	0.4	3.4	0.4	10.1	1.2	4.4	0.6
\$200,000 and above	8.3	2.1	1.8	0.5	1.0	0.2	4.7	0.9	1.7	0.6
Total <sup>3</sup>	49.7	14.4	37.2	9.5	25.3	7.9	42.8	15.1	44.3	17.5

  

Income Class <sup>1</sup>	South Atlantic		East South Central		West South Central		Mountain		Pacific	
	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted
\$0 to \$29,999	75.8	36.6	82.4	49.6	79.1	45.3	76.6	37.9	80.2	28.8
\$30,000 to \$49,999	70.8	29.3	69.9	36.8	68.9	34.1	71.0	28.2	69.1	20.8
\$50,000 to \$74,999	59.5	19.8	61.1	28.6	62.7	33.6	63.6	21.9	53.3	12.1
\$75,000 to \$99,999	36.0	9.1	48.5	20.7	61.7	20.8	48.2	9.9	29.2	4.1
\$100,000 to \$199,999	16.2	3.3	33.6	9.1	43.1	10.5	24.7	4.1	8.6	1.3
\$200,000 and above	11.8	3.4	20.9	7.4	33.1	9.5	10.9	3.3	7.6	1.2
Total <sup>3</sup>	54.5	17.2	59.8	26.1	61.3	24.5	59.4	19.2	49.8	11.3

**Table 4b: Joint Tax Returns with MID > 0 with Wasted MID by Census Region and Income Class<sup>5</sup>  
(1995 income levels)**

Income Class <sup>1</sup>	All Divisions <sup>2</sup>		New England		Mid-Atlantic		East North Central		West North Central	
	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted
\$0 to \$29,999	75.5	36.0	68.5	29.0	70.3	28.6	78.1	44.7	71.3	38.8
\$30,000 to \$49,999	73.6	31.1	74.4	26.9	63.5	22.6	74.1	37.6	81.4	42.8
\$50,000 to \$74,999	60.8	19.1	62.6	13.0	46.6	10.7	61.7	20.3	62.7	21.7
\$75,000 to \$99,999	33.7	7.3	26.5	2.8	14.1	2.5	33.5	6.4	35.3	6.2
\$100,000 to \$199,999	13.6	2.6	3.1	0.4	3.7	0.4	10.3	1.2	4.6	0.6
\$200,000 and above	8.5	2.1	1.6	0.5	1.1	0.2	4.7	0.9	1.1	0.6
Total <sup>3</sup>	48.9	14.2	44.3	9.4	33.9	7.9	47.7	14.2	50.2	17.0

  

Income Class <sup>1</sup>	South Atlantic		East South Central		West South Central		Mountain		Pacific	
	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted
\$0 to \$29,999	70.5	35.6	84.2	53.4	75.4	41.8	72.6	42.4	82.7	32.9
\$30,000 to \$49,999	76.3	34.1	73.4	42.9	67.9	38.6	70.4	31.7	77.0	25.8
\$50,000 to \$74,999	64.8	21.7	63.0	29.6	62.1	34.7	69.4	24.8	61.8	13.9
\$75,000 to \$99,999	38.9	6.2	49.4	21.1	60.6	21.3	51.2	10.2	31.8	4.3
\$100,000 to \$199,999	16.3	0.6	35.6	9.6	45.3	11.0	26.1	4.3	9.0	1.3
\$200,000 and above	11.8	0.6	21.2	7.5	33.4	9.4	9.9	2.8	8.4	1.3
Total <sup>3</sup>	52.8	16.6	59.4	26.4	58.9	23.7	58.8	19.2	49.9	11.3

**Table 4c: Single and Head of Household Tax Returns with MID > 0 with wasted HMID by Census Region and Income Class<sup>5</sup>  
(1995 income levels)**

Income Class <sup>1</sup>	All Divisions <sup>2</sup>		New England		Mid-Atlantic		East North Central		West North Central	
	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted
\$0 to \$29,999	75.1	31.1	68.6	24.2	57.8	21.2	77.5	35.0	77.9	32.7
\$30,000 to \$49,999	58.4	16.6	49.4	10.8	37.7	9.1	62.1	20.6	70.7	22.2
\$50,000 to \$74,999	27.3	6.4	8.3	1.3	11.6	2.1	37.5	9.0	17.3	4.5
\$75,000 to \$99,999	14.7	2.8	0.0	0.0	5.4	0.7	7.8	0.8	13.0	2.7
\$100,000 to \$199,999	8.0	1.3	18.6	1.5	0.0	0.0	6.3	0.6	0.0	0.0
\$200,000 and above	6.8	2.1	6.0	0.6	0.4	0.1	4.0	0.9	4.3	0.9
Total <sup>3</sup>	52.2	15.3	41.6	10.1	32.3	7.9	55.9	18.7	43.9	19.9

  

Income Class <sup>1</sup>	South Atlantic		East South Central		West South Central		Mountain		Pacific	
	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted	Percent with wasted MID	Percent of MID wasted
\$0 to \$24,999	78.7	37.3	80.7	43.9	81.5	48.0	78.8	35.0	78.3	25.0
\$25,000 to \$49,999	61.8	19.5	62.6	23.5	70.3	27.5	72.2	21.0	57.1	11.8
\$50,000 to \$74,999	33.2	8.4	42.1	17.3	67.2	24.7	32.0	5.5	21.9	4.4
\$75,000 to \$99,999	21.9	5.0	18.0	5.8	78.9	13.3	24.4	7.0	11.4	2.4
\$100,000 to \$199,999	14.9	2.5	6.9	2.8	15.3	3.4	12.7	2.0	5.6	0.9
\$200,000 and above	12.3	4.1	16.7	5.2	28.7	10.0	21.2	7.3	1.1	0.4
Total <sup>3</sup>	59.4	19.9	61.2	24.3	69.5	28.3	61.2	19.2	49.4	11.1

**Table 5a: Percent Itemizing and the Mean Level of Mortgage Interest Expense Conditional on Itemizing by Income and Age (1995 income levels)**

Income Class <sup>1</sup>	Age Class					All
	Under 30	30 to 40	40 to 55	55 to 65	over 65	
<i>----- Percent Itemizing -----</i>						
\$0 to \$29,999	2.5	8.2	13.9	17.4	10.7	8.4
\$30,000 to \$49,999	23.4	38.0	43.9	40.8	21.8	35.4
\$50,000 to \$99,999	59.0	76.2	77.0	69.3	45.8	70.7
over \$100,000	91.5	94.5	94.2	89.8	75.7	90.8
All income classes <sup>3</sup>	8.1	33.4	46.9	43.6	24.3	31.4
<i>---- Mean Level of Mortgage Interest Expense for Itemizers ---</i>						
\$0 to \$29,999	\$3,563	\$4,859	\$4,828	\$4,005	\$1,508	\$4,038
\$30,000 to \$49,999	\$4,315	\$5,222	\$5,591	\$3,966	\$2,475	\$4,795
\$50,000 to \$99,999	\$6,107	\$7,008	\$6,381	\$4,827	\$2,707	\$6,029
over \$100,000	\$7,240	\$11,492	\$11,378	\$7,759	\$3,836	\$9,811
All income classes <sup>3</sup>	\$4,878	\$6,840	\$7,092	\$5,122	\$2,649	\$6,124

**Table 5b: Percent Itemizing and the Mean Level of Mortgage Interest Expense Conditional on Itemizing for Joint Tax Returns by Income and Age (1995 income levels)**

Income Class <sup>1</sup>	Age Class					All
	Under 30	30 to 40	40 to 55	55 to 65	over 65	
<i>----- Percent Itemizing -----</i>						
\$0 to \$29,999	3.9	12.7	18.6	19.3	6.3	12.3
\$30,000 to \$49,999	23.5	40.3	42.7	36.4	17.6	33.7
\$50,000 to \$99,999	59.3	77.4	77.7	67.3	41.0	70.9
over \$100,000	93.3	95.3	94.2	91.0	74.4	91.3
All income classes <sup>3</sup>	21.0	51.9	60.8	50.2	25.6	47.4
<i>----- Mean Level of Mortgage Interest Expense for Itemizers-----</i>						
\$0 to \$29,999	\$5,454	\$6,064	\$6,136	\$4,777	\$2,123	\$5,428
\$30,000 to \$49,999	\$5,332	\$5,922	\$6,299	\$4,266	\$2,981	\$5,433
\$50,000 to \$99,999	\$6,584	\$7,154	\$6,666	\$5,058	\$3,359	\$6,365
over \$100,000	\$9,050	\$12,015	\$11,563	\$7,917	\$4,072	\$9,811
All income classes <sup>3</sup>	\$6,194	\$7,595	\$7,850	\$5,644	\$3,401	\$6,980

**Table 5c: Percent Itemizing and the Mean Level of Mortgage Interest Expense Conditional on Itemizing for Individual and Head of Household Tax Returns by Income and Age (1995 income levels)**

Income Class <sup>1</sup>	Age Class					All
	Under 30	30 to 40	40 to 55	55 to 65	over 65	
<i>----- Percent Itemizing -----</i>						
\$0 to \$29,999	2.3	6.9	12.0	16.1	12.8	7.3
\$30,000 to \$49,999	23.4	35.1	45.4	49.9	31.7	37.8
\$50,000 to \$99,999	57.8	69.4	73.8	80.2	59.5	69.9
over \$100,000	86.6	89.1	93.9	79.9	80.4	87.3
All income classes <sup>3</sup>	4.7	17.1	28.9	32.4	22.8	17.6
<i>----- Mean Level of Mortgage Interest Expense for Itemizers-----</i>						
\$0 to \$29,999	\$3,095	\$4,172	\$4,030	\$3,404	\$1,368	\$3,337
\$30,000 to \$49,999	\$3,080	\$4,228	\$4,708	\$3,515	\$1,814	\$3,945
\$50,000 to \$99,999	\$4,323	\$6,092	\$5,012	\$3,783	\$1,414	\$4,480
Over \$100,000	\$2,202	\$7,270	\$9,644	\$6,183	\$3,034	\$6,934
All income classes <sup>3</sup>	\$3,267	\$4,820	\$5,008	\$3,749	\$1,691	\$4,113



**Table 6: Estimation Results**

Variable	Itemization Probit Coefficient estimate (standard error)	Level of MID Coefficient estimate (standard error)
Income	3.28e-5* (6.28e-7)	0.0249* (0.0012)
Income Squared	-5.29e-11* (1.76e-12)	-7.83e-9* (4.12e-10)
Income Cubed	2.15e-17* (9.84e-19)	-5.23e-16* (3.08e-17)
Average state housing price	0.0039* (0.0004)	30.77* (1.84)
Average state income tax rate	0.0682* (0.0102)	-685.93* (64.55)
Average state property tax rate	0.0262** (0.0128)	-712.22* (78.65)
State allows MID	0.1218* (0.0275)	577.66* (166.39)
Age	0.0828* (0.0041)	63.77*** (33.98)
Age squared	-7.67e-4* (3.99e-5)	-1.40* (0.32)
Married-joint filer	-0.1362* (0.0307)	738.54* (200.54)
Head-of-household filer	-0.5146* (0.0457)	797.64** (346.68)
1 dependent	0.1953* (0.0361)	814.68* (215.77)
2 dependents	0.3512* (0.0374)	1078.35* (216.10)
3 dependents	0.4187* (0.0523)	1032.80* (290.97)
4 or more dependents	0.3078* (0.0732)	1528.88* (408.36)
State homeownership rate	0.0113* (0.0026)	--
Constant	-5.2183* (0.2355)	5204.27* (1158.49)
$\rho$		-0.3725 (0.0521)

\* Significant at the 1% level. \*\* Significant at the 5% level. \*\*\* Significant at the 10% level.

**Table 7: Importance of House Prices and State Taxes in Explaining Regional Variation in Itemization**

Region	All Divisions <sup>2</sup>	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
Actual	31.8	37.8	38.5	31.4	31.3	31.0	22.5	20.8	31.8	35.9
Predicted	30.7	38.7	36.7	31.2	30.9	28.4	22.3	20.7	29.7	35.0
Predicted with Variables Set to Sample Average:										
House Price	30.6	34.4	34.0	32.9	34.2	29.6	26.9	24.0	29.9	29.7
House Price and State Taxes	30.5	33.9	32.2	32.5	32.4	29.9	27.6	27.2	29.7	29.1
Memo:										
Average house price (\$1,000)	120	163	146	102	85	105	76	77	116	178
Average state income tax rate <sup>4</sup>	2.4	2.9	3.4	2.9	2.7	2.2	1.7	0.7	2.1	2.4
Average state property tax rate <sup>4</sup>	3.5	4.7	4.5	3.8	3.7	3.2	1.9	3.1	3.2	3.3

Summary Statistics

	Variance of Percent Itemizing Across Regions	Percent of Predicted Regional Variance Explained by Variables
Actual	17.5	
Predicted	17.2	
Predicted with Variables Set to Sample Average:		
House Price	10.2	House Price 40.7
House Price and State Taxes	6.7	House Price and State Taxes 61.3

**Table 8: Importance of House Prices and State Taxes in Explaining Regional Variation in Level of MID<sup>6</sup>**

Region	All Divisions <sup>2</sup>	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
Actual (\$)	1,871	2,324	1,909	1,551	1,479	1,851	1,092	1,061	1,953	3,011
Predicted (\$)	2,294	2,883	2,485	1,967	1,925	2,095	1,723	1,592	2,347	3,318
Predicted with Variables Set to Sample Average:										
House Price (\$)	2,234	2,121	2,020	2,223	2,454	2,277	2,323	2,131	2,365	2,311
House Price and State Taxes (\$)	2,271	2,584	2,410	2,413	2,410	2,190	2,031	2,045	2,195	2,198
Memo:										
Average house price (\$1,000)	120	163	146	102	85	105	76	77	116	178
Average state income tax rate <sup>4</sup>	2.4	2.9	3.4	2.9	2.7	2.2	1.7	0.7	2.1	2.4
Average state property tax rate <sup>4</sup>	3.5	4.7	4.5	3.8	3.7	3.2	1.9	3.1	3.2	3.3
Summary Statistics										
	Variance of Level of MID Across Regions					Percent of Predicted Regional Variance Explained by Variable(s)				
Actual	1741									
Predicted	1592									
Predicted with Variables Set to Sample Average:										
House Price	388					House Price	75.6			
House Price and State Taxes	532					House Price and State Taxes	66.6			

Table Footnotes:

- (1) Income is "total income" (1040 definition) plus: tax exempt interest, nontaxable pension and social security benefits, and deferred wages (including 401k contributions) of the primary and/or spouse.
- (2) The "All Divisions" column includes taxpayers who reside outside the 50 United States.  
New England: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut.  
Middle Atlantic: New York, New Jersey, and Pennsylvania.  
East North Central: Ohio, Indiana, Illinois, Michigan, and Wisconsin.  
West North Central: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas.  
South Atlantic: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, and Florida.  
East South Central: Kentucky, Tennessee, Alabama, and Mississippi.  
West South Central: Arkansas, Louisiana, Oklahoma, and Texas.  
Mountain: Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, and Nevada.  
Pacific: Washington, Oregon, California, Alaska, and Hawaii.
- (3) The total line includes taxpayers with negative incomes.
- (4) Total state and local taxes divided as a percent of state income as reported by Department of Census.
- (5) Wasted deductions are defined as  $\max(\text{standard deduction} - \text{non-MID itemized deductions}, 0)$ .
- (6) Individuals with incomes over \$500,000 excluded.

**Appendix Table 1: Descriptive Statistics from Full Cross Section and CWHS Component**

Mean (standard deviation)

	Cross Section (Weighted)		CWHS (Unweighted)	
	Full Sample	Itemizers	Full Sample	Itemizers
Itemizer	0.316 (14.935)	1.000 (0.000)	0.315 (0.465)	1.000 (0.000)
Level of MID conditional on itemizing	--	6109 (136438)	--	6246 (6502)
Income	43321 (5327133)	81861 (6357193)	44402 (125352)	85256 (213579)
Average state housing price (\$1000s)	120 (1319)	127 (920)	120 (41)	127 (42)
Average state income tax rate	2.37 (43.04)	2.59 (28.01)	2.37 (1.34)	2.57 (1.26)
Average state property tax rate	3.54 (30.57)	3.63 (21.11)	3.53 (0.95)	3.62 (0.95)
State allows MID	0.60 (15.77)	0.64 (10.68)	0.60 (0.49)	0.64 (0.48)
Age	43.71 (532.81)	47.14 (295.79)	43.79 (16.61)	47.43 (13.48)
Married-joint filer	0.466 (16.025)	0.702 (10.151)	0.465 (0.499)	0.704 (0.456)
Head-of-household filer	0.149 (11.432)	0.064 (5.451)	0.150 (0.357)	0.063 (0.243)
1 dependent	0.185 (12.463)	0.185 (8.622)	0.187 (0.390)	0.185 (0.388)
2 dependents	0.150 (11.468)	0.206 (8.970)	0.150 (0.357)	0.203 (0.402)
3 dependents	0.054 (7.248)	0.081 (6.042)	0.052 (0.222)	0.078 (0.268)
4 or more dependents	0.024 (4.890)	0.032 (3.879)	0.023 (0.150)	0.032 (0.177)
State homeownership rate	64.7 (200.3)	64.2 (144.9)	64.7 (6.2)	64.3 (6.5)
N	100,883	66,751	20,657	6,506