

# The Preferential Income Tax Treatment of Owner-Occupied Housing: Who Really Benefits?

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## *Abstract*

This article uses a model that includes an explicit measure of net implicit rental income to examine the size and distribution of the tax expenditure to owner-occupied housing across and within homeowner income classes. The model is derived from 1989 American Housing Survey data. The analysis leads to three major conclusions.

First, on net, the inclusion of net implicit income in the measure of homeowner tax savings adds a substantial amount to the estimated tax expenditure given to owner-occupied housing. Second, the interaction of changes in the standard deduction and in the tax treatment of itemized nonhousing expenses has rendered the mortgage interest deduction worthless for many low- and moderate-income households. Third, although most of the expenditure is distributed to high-income households, the distributional effects of eliminating the expenditure to owner-occupied housing depend on the manner in which these savings are distributed.

## **Introduction**

Provisions of the federal income tax system that grant preferential treatment to specific economic activities have come under increasing scrutiny as the nation's attention has focused on the need to reduce the federal budget deficit. Preferences or "tax expenditures" are defined as the difference between tax revenues realized under current law and revenues that would be earned if the structure of the tax system were neutral.<sup>1</sup> Owner-occupied housing is a well-known recipient of federal tax preferences.

The Joint Committee on Taxation (JCT) estimates that federal tax expenditures to owner-occupied housing totaled \$51.9 billion in 1989 (Joint Committee on Taxation 1988). The estimate of the

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<sup>1</sup> The Congressional Budget and Impoundment Control Act of 1974 (Public Law 93-344, § 3(a)(3)) defines tax expenditures as follows: "Those revenue losses attributable to provisions of Federal tax laws which allow a special exclusion, exemption or deduction from gross income or which provide a special credit, a preferential rate of tax or a deferral of tax liability."

U.S. Department of the Treasury Office of Tax Analysis (OTA) is \$49.7 billion (*Special Analysis* 1989).

These published estimates understate what economists consider to be the true tax expenditure associated with homeownership: the nontaxation of “net implicit income.” Such income is defined as the net return owner-occupants earn on the cash or equity capital they have invested in their home. This income is labeled implicit ( versus explicit money income) because a large portion of the return to owner-occupied housing consists of the in-kind or implicit housing services enjoyed by the owner-occupant. According to the OTA, estimates of the cost of excluding net implicit income from the tax base are not currently included in tax expenditure estimates largely because they are “difficult to make” ( *Special Analysis* 1981).<sup>2</sup> Although any measurement of net implicit income involves a potential for error, a reasonable estimate is surely better than assuming the income to be zero.

This article is the third in a series on this topic by the authors; earlier papers include Follain and Ling (1991) and Ling and McGill (1992). The purpose of this study is to examine the distribution of the tax expenditure to owner-occupied housing across and within homeowner income classes by using a model that includes an explicit measure of net implicit income. This approach allows the examination of both homeowner tax preferences and income tax burdens under current law and is a necessary first step in evaluating policy options dealing with the income tax treatment of owner-occupied housing.<sup>3</sup> In addition, this article omits some of the technical underpinnings of the analysis and highlights its policy implications.

The study’s primary results can be summarized as follows: First, including net implicit income in the measure of the homeowner tax expenditure adds substantially to JCT and OTA estimates. Second, the Tax Reform Act of 1986 (TRA86) is shown to have reduced the value of housing-related deductions for many non-wealthy households. Third, the analysis indicates that as usual the bulk of the tax expenditure is distributed to highincome households. However, this analysis also shows that low- and moderate-income households receive more and higher income households

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<sup>2</sup> The theoretical basis for taxing net implicit income is understood by the U.S. Department of Commerce: Income from owner-occupied housing is one of the major imputations Commerce makes when estimating the gross national product.

<sup>3</sup> The current federal income tax structure mentioned throughout the article refers to the tax system in place for the 1989 tax year, the latest year for which American Housing Survey data are available.

receive less than their proportionate share of the total homeowner tax expenditure relative to their federal income tax burden.

What economists mean by homeowner tax preferences is discussed in the following section. Simple examples demonstrate the complex interaction between the size of homeowner tax benefits and household standard deductions, itemized nonhousing expenses, and mortgage debt. Then, 1989 American Housing Survey (AHS) data are used to estimate the annual homeowner tax expenditures for individual households, by income class and in the aggregate. Next, the vertical and horizontal distribution of the homeowner tax expenditure is examined. Finally, the policy implications of these findings are addressed.

### **Measuring the annual tax expenditure to homeownership**

Under a neutral tax system, owner-occupants would have to report as income the return earned on the equity capital invested in their home. This return consists of two parts: the periodic “implicit rental income” or housing “dividend” and the appreciation in the value of the home (i.e., the capital gain). In a neutral system, deductions from this annual gross income or return on housing equity would be allowed for the expenses incurred to produce the gross income, including mortgage interest, property taxes, maintenance, insurance, and economic depreciation. The resulting net implicit income would be added to the homeowner’s adjusted gross income (AGI) and subjected to tax.<sup>4</sup>

Three provisions in the current federal income tax laws account for the preferential tax treatment that homeowners receive relative to landlords.<sup>5</sup> First, net implicit income is not added to the homeowner’s tax base; that is, homeowners do not report as income their annual housing dividend net of expenses or the annual appreciation in the value of their property.<sup>6</sup> Second, homeowners are allowed to deduct mortgage interest from their

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<sup>4</sup> An extended discussion of net implicit or “in-kind” income and the proper taxation of such income in a comprehensive income tax system is contained in Aaron (1972).

<sup>5</sup> More formal presentations of the conceptual framework for measuring the homeowner tax expenditure and reviews of the recent literature are contained in Follain and Ling (1991) and Ling and McGill (1992).

<sup>6</sup> Nor are they typically required to recognize accumulated capital gains on the sale of the property. Capital gains realized on the sale of an owner-occupied home are typically deferred by the subsequent purchase of another home, and taxpayers aged 55 and older are allowed a one-time \$125,000 exclusion of capital gains associated with the sale of a principal residence.

AGI. Third, property taxes can also be deducted from AGI. The taxable income of owner-occupants is thus less than that of landlords by the sum of net implicit income, mortgage interest, and property taxes.<sup>7</sup> The JCT has estimated that mortgage interest and property tax deductions resulted in a tax expenditure to owner-occupied housing of \$38.8 billion in 1989 (Joint Committee on Taxation 1988). The OTA's estimate is \$42.6 billion (*Special Analysis* 1989). The mortgage interest deduction was estimated to account for \$30.8 billion (JCT) and \$32.2 billion (OTA) of these totals.<sup>8</sup>

Once the nontaxation of net implicit rental income is incorporated into the calculation of annual tax savings, it follows that total homeowner tax savings are not generally a function of the amount of a household's mortgage interest expense so long as itemized nonhousing deductions exceed the household's standard deduction.<sup>9</sup> Thus, classifying the mortgage interest deduction as a tax expenditure can be misleading and contributes to the widespread belief that owners receive substantial subsidies and that highly leveraged owners benefit more than households that do not use mortgage debt extensively. Under current law, owners do receive substantial tax savings relative to renters and other investors, but not because of the mortgage interest deduction. Interest deductibility merely extends

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<sup>7</sup> Alternatively, under current law, a homeowner does not report gross imputed income and is not allowed to deduct maintenance and real economic depreciation; in a neutral tax system the latter would be deductible. Thus, homeowner tax preferences can also be viewed as the tax savings from a reduction in taxable income equal to gross rental income minus maintenance and economic depreciation. In some cases, a preferred measure of the economic effects of homeowner tax preferences is the efficiency (or deadweight) loss associated with the annual tax savings. This loss can be measured as the difference between estimated tax savings and the amount a household would be "willing to pay" for the tax preferences. Estimating efficiency losses requires, among other things, assumptions about the tastes and preferences of households for housing and other goods (i.e., utility functions) and is beyond the scope of the current article. (See Follain and Ling 1991.)

<sup>8</sup> The remaining components of the expenditure estimates are the deferral and the exclusion (for persons 55 and older) of capital gains on the sale of personal residences and the exclusion of interest on state and local bonds used to finance owner-occupied housing.

<sup>9</sup> If the household's before-tax rate of return available on nonhousing assets equal in risk to the housing investment [ $i(e)$ ] is not equal to its before-tax cost of mortgage debt financing [ $i(d)$ ], then the effect of a change in mortgage debt financing is the household's marginal tax rate times the difference between  $i(e)$  and  $i(d)$  multiplied by the household's home value. Thus, if  $i(e)$  equals  $i(d)$ , a change in mortgage debt financing produces no change in the household's tax savings. See Ling and McGill (1992) for the formal derivation of this result.

the real tax advantage of homeownership—the nontaxation of net implicit rental income—to cash-constrained households (Hendershott 1988; Woodward and Weicher 1989).

### *Some clarifying examples*

Consider the case of a married household with wage and salary income of \$30,000 per year and assets of \$60,000 (see table 1). If this household is renting, assets are invested in taxable financial securities yielding a 10 percent pretax rate of return, for a total AGI of \$36,000. The household files a joint return with four exemptions and is assumed to have nonhousing expenses (i.e., itemized deductions) of \$5,000, which allow the household to itemize. After subtracting the value of the four exemptions and the nonhousing expenses from AGI, the taxable income of the renter is \$23,000, on which a federal tax of \$3,450 is owed.<sup>10</sup>

In contrast, consider the case in which the taxpayer occupies the same home as an owner and finances the \$60,000 purchase entirely with cash. Both AGI and taxable income are reduced by \$6,000 because the taxpayer's wealth is now invested in the nontaxed housing asset rather than in financial assets. The homeowning household retains the four exemptions and \$5,000 in nonhousing expenses. In addition, the homeowner may deduct \$840 in property taxes for total itemized deductions of \$5,840. Taxable income is \$16,160, and the owner's federal income tax liability is \$2,424, \$1,026 less than as a renter in the same house.

Consider next the household's tax status if the \$60,000 home is partially debt financed by a 10 percent mortgage with a current outstanding loan balance of \$42,000. In this case, \$42,000 of household wealth is still invested in financial assets that generate \$4,200 in taxable income, and \$18,000 is invested in the house. AGI equals \$34,200, which is \$4,200 more than if the housing investment is completely equity financed; however, the debt financing generates \$4,200 in mortgage interest deductions. Taxable income is \$16,160, and the household's federal tax liabil-

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<sup>10</sup>Although many households with an AGI of \$30,000 have not accumulated \$60,000 in assets, the assumption is used here simply to allow consideration of the case of 100 percent equity financing. The results of these examples do not depend on the household's investing its nonhousing equity assets in taxable financial securities. This assumption merely represents the household's opportunity cost for these assets. Also, for purposes of illustration, the household's before-tax return on financial assets is made equal to its before-tax cost of mortgage debt. If these returns are not exactly equal (as in most cases), there would be a small difference between the homeowner tax expenditure in the no mortgage and mortgage cases in table 1.

**Table 1. Federal Tax Liabilities of Married Renter and Homeowner with Equivalent Earned Income, Assets, Exemptions, and \$5,000 in Itemized Nonhousing Deductions—\$60,000 Home**

	Renter	Homeowner		
		Current Law No Loan	Current Law \$42,000 Loan	Current Law without MID <sup>a</sup> \$42,000 Loan
<b>Income</b>				
Wages and salary	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000
Financial assets	60,000 @ 10% = 6,000		42,000 @ 10% = 4,200	42,000 @ 10% = 4,200
Home equity	-0-	60,000 @ 10% = 6,000	18,000 @ 10% = 1,800	18,000 @ 10% = 1,800
Adjusted gross income	36,000	30,000	34,200	34,200
Exemptions (4 @ 2,000)	8,000	8,000	8,000	8,000
Itemized deductions nonhousing	5,000	5,000	5,000	5,000
Homeownership mortgage interest	-0-	-0-	4,200	-0-
Property taxes	-0-	840	840	840
Total deductions <sup>b</sup>	5,000	5,840	10,040	5,840
Taxable income	23,000	16,160	16,160	20,360
Federal income tax	3,450	2,424	2,424	3,054
Tax expenditure <sup>c</sup>		1,026	1,026	396
Change in expenditure			0	630

Source: Authors' calculations.

<sup>a</sup> MID = mortgage interest deductions.

<sup>b</sup> Household takes the standard deduction if it is greater than all itemized deductions.

<sup>c</sup> Tax expenditure is the difference between the household's federal income tax under a neutral system and the current system.

ity of \$2,424 is the same as it would be with all-equity financing. Thus annual tax savings do not depend on the amount of debt financing so long as mortgage interest is fully deductible *and* nonhousing expenses are larger than the standard deduction, as was typically the case before the passage of TRA86.

Now consider the hypothetical case in which mortgage interest is not deductible (column 4). AGI is \$4,200 higher than in the case in which no debt financing is used, and total itemized deductions still equal only \$5,840. Taxable income and federal tax liability increase to \$20,360 and \$3,054, respectively, and the annual tax savings decrease by \$630 ( $0.15 \times \$4,200$ ) to \$396.

The provision of TRA86 that *directly* limits the mortgage interest deduction is innocuous: Mortgage interest deductions are limited to interest expense on mortgages of \$1 million plus \$100,000 of home equity debt. Nonetheless, several other provisions of TRA86 that indirectly affect the mortgage interest deduction have a combined effect comparable to the complete elimination of the mortgage interest deduction for many households. Specifically, consumer (non-mortgage) interest deductions have been phased out, sales taxes are no longer deductible, miscellaneous itemized deductions are now subject to a 2 percent floor, and the floor for medical deductions has been increased from 5 percent to 7.5 percent of AGI. Thus for many households, charitable contributions and state income tax liability are the only personal non-housing deductions that remain. In addition, the standard deduction has been increased.

To demonstrate the importance of these changes on homeowner tax savings, calculations identical to those in table 1 are performed for a household with only \$1,000 in available itemized nonhousing deductions. As displayed in table 2 (column 1), the household elects to take the standard deduction as a renter and thus faces a federal tax liability of \$3,450. As an owner with no debt financing (column 2), the household enjoys the full \$6,000 reduction in AGI by switching from taxable financial assets to a nontaxable housing investment. Because total itemized deductions (\$1,000 + \$840) are less than \$5,000, the household chooses not to itemize. The household's federal tax liability as an owner equals \$2,550, \$900 less than its tax as a renter. Note that because the household does not itemize, the property tax deduction is "wasted" because it does not reduce taxable income to less than it would be if the household were renting.

If the \$60,000 home is partially debt financed by a 10 percent mortgage with a current loan balance of \$42,000 (column 3), AGI equals \$34,200, \$4,200 more than the no-debt case. The household's itemized deductions total \$6,040, only \$1,040 more than the standard deduction elected in the no-debt case. In effect, \$4,000 of the \$5,040 in housing-related deductions is wasted, and the household's federal tax liability increases to \$3,024. Thus the annual tax savings with a 70 percent loan-to-value ratio decrease from \$900, the benefit received in the no-debt case, to \$426.

Because such a small portion of this household's housing-related expenses can be claimed, complete elimination of the mortgage interest deduction has little effect on the tax liability of the household. In fact, complete elimination of the \$4,200 interest deduction would increase tax liability by only \$156 for the household with only \$1,000 in nonhousing expenses. In contrast, com-

**Table 2. Federal Tax Liabilities of Married Renter and Homeowner with Equivalent Earned Income, Assets, Exemptions and \$1,000 in Itemized Nonhousing Deductions—\$60,000 Home**

	Renter	Homeowner		
		Current Law No Loan	Current Law \$42,000 Loan	Current Law without MID <sup>a</sup> \$42,000 Loan
<b>Income</b>				
Wages and salary	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000
Financial assets	60,000 @ 10% = 6,000		42,000 @ 10% = 4,200	42,000 @ 10% = 4,200
Home equity	-0-	60,000 @ 10% = 6,000	18,000 @ 10% = 1,800	18,000 @ 10% = 1,800
Adjusted gross income	36,000	30,000	34,200	34,200
Exemptions (4 @ 2,000)	8,000	8,000	8,000	8,000
Itemized deductions nonhousing	1,000	1,000	1,000	1,000
Homeownership interest	-0-	-0-	4,200	-0-
Property taxes	-0-	840	840	840
Total deductions <sup>b</sup>	5,000	5,000	6,040	5,000
Taxable income	23,000	17,000	20,160	21,200
Federal income tax	3,450	2,550	3,024	3,180
Tax expenditure <sup>c</sup>		900	426	270
Change in expenditure			474	156

Source: Authors' calculations.

<sup>a</sup> MID = mortgage interest deductions.

<sup>b</sup> Household takes the standard deduction if it is greater than all itemized deductions.

<sup>c</sup> Tax expenditure is the difference between the household's federal income tax under a neutral system and the current system.

plete elimination of the mortgage interest deduction for the identical household with \$5,000 in nonhousing expenses would increase its tax liability by \$630.

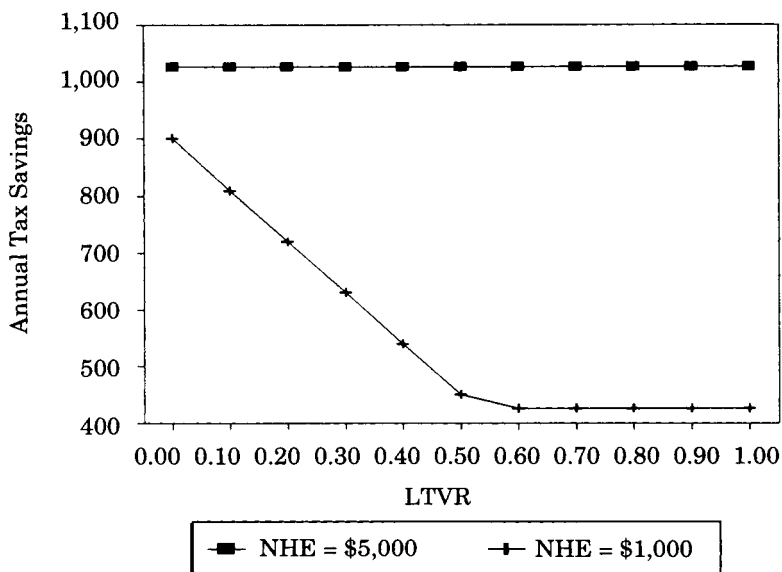
The effects of itemized nonhousing expenses and loan-to-value ratios on the annual tax savings related to homeownership are summarized graphically in figure 1. If nonhousing expenses are equal to or greater than the standard deduction, then the example household receives the full \$1,026 ( $[\$1,800 + \$840 + \$4,200] \times 0.15$ ) benefit of its housing-related deductions. Further, the size of the owner tax savings does not depend on how the housing investment is financed.

A different pattern emerges for households with nonhousing expenses that are less than the standard deduction. First, such households never receive the full benefit of their housing deduc-

tions. Even if our representative household has no outstanding mortgage debt, its annual tax savings are \$900, or \$126 less than the savings available to the household with nonhousing expenses of \$5,000. This amount reflects the value of the wasted property tax deduction. Second, the amount of the tax savings actually *decreases* as the amount of debt financing increases over a significant range because taxable interest income on financial assets is replacing the nontaxable returns earned on the equity invested in the house. At some point, increases in the amount of debt financing generate enough deductible mortgage interest expense to justify itemizing. Additional dollars of mortgage interest expense are then fully deductible. In our example, this point occurs at a loan-to-value ratio of 54 percent. Beyond this ratio, annual tax savings remain constant at \$420, far below the \$1,026 realized by households with nonhousing expenses larger than the standard deduction.

Figure 1. Tax Savings—Married Owners

AGI = \$30,000; House Value = \$60,000



Source: Authors' calculations.

Note: NHE is total nonhousing expenses available for use as itemized deductions; LTVR is the loan-to-value ratio; and annual tax savings is the difference between the owner's federal tax liability under the current system and the tax liability under a neutral system.

The preceding examples demonstrate that many households may receive little or no additional tax benefit from their mortgage interest deductions beyond what they would receive if they claimed the standard deduction. The corollary is that complete elimination of the mortgage interest deduction would have little or no effect on these households. Thus, since the passage of TRA86, the amount of additional tax revenue that can still be raised by eliminating the deduction is likely to be substantially less.<sup>11</sup> Estimates of actual homeowner tax savings are discussed in the following section.

### **Estimates of the tax expenditure to owner-occupied housing**

To arrive at an estimate of homeowner tax preferences requires that two major tasks be performed. First, a refined microlevel database is constructed from existing archival information. The starting point is the 1989 AHS conducted by the U.S. Department of Commerce. The AHS contains detailed microdata on households, including geographic location; number, age, and marital status of occupants; income type and level; tenure status; original and current home values; and property tax payments. Detailed mortgage information is also collected, including the number and amount of mortgages, mortgage interest rates and payments, and original and remaining terms. Each survey observation (household) is weighted so that national estimates can be derived.

Mean values of selected variables by income class are reported in table 3. Average AGI of the 59.9 million owner households is \$35,855. The average household owns a home valued at \$94,675, which is financed with 32.8 percent debt and 67.2 percent equity. The debt financing produces an average annual interest expense of \$3,297. Annual property taxes average \$1,042 or 1.1 percent of estimated market value.

The second major task, calculating 1989 federal income tax liabilities, is accomplished for each household by applying the current federal income tax structure to the AHS database enhanced with

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<sup>11</sup> It is worth noting that although the antidebt bias has made ownership relatively more expensive (compared with renting) for many low- and moderate-income households with few other deductions, it is not clear that TRA86 has made ownership less obtainable for these households. The increased standard deduction, coupled with increases in the personal exemption and reductions in statutory income tax rates, has increased the amount of disposable income available for some households to purchase housing and all other goods. In fact, many studies estimate that lower-income households received relatively larger tax cuts than higher-income households. (See, for example, Follain and Ling 1988.)

nonhousing expense estimates from Internal Revenue Service microdata. Although AHS data do not contain income tax liability information, most of the raw data required to estimate these amounts is present. Regular tax liabilities are determined using actual tax rate schedules for three possible filing statuses: single, married filing jointly, and head of household.<sup>12</sup>

Two adjustments are required to produce a static estimate of what the federal income tax liability would be if an owner were treated like a renter/landlord. First, expenses available for Schedule A itemization are reduced by the amount of mortgage interest and property tax payments. This adjustment will not increase taxable income by the full amount of interest and property tax payments unless nonhousing expenses equal or exceed the standard deduction. Second, AGI is increased by the dollar amount of net implicit income (including the annual appreciation in nominal value). Net implicit income is made equal to the net before-tax return on housing equity times the household's current amount of housing equity, which is equal to the estimated current value of the property (including land), minus the balance of any outstanding mortgages.

As suggested by Hendershott (1988), the before-tax yield on mortgage-backed securities is a reasonable measure of the opportunity cost (before tax) of invested equity for wealthy households. The yield on Government National Mortgage Association (GNMA) mortgage-backed securities averaged 9.71 percent in 1989. However, the net before-tax return on housing equity for an individual household cannot be directly observed because the periodic component depends on household preference functions (including risk-aversion parameters) and whether the household is currently consuming an equilibrium quantity of housing. Arguments can be made as to why before-tax housing returns can be both greater than or less than the 9.71 percent before-tax opportunity cost (Ling and McGill 1992). To present a conservative estimate of net investment income, we assume that a household's net before-tax housing return equals its after-tax return on the 9.71 percent security.<sup>13</sup>

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<sup>12</sup> See Ling and McGill (1992) for a detailed discussion of the income tax calculations and the enhancement of the AHS database with supplemental information from the Internal Revenue Service on individual tax returns.

<sup>13</sup> The estimation of required rates of return on homeowner equity has received considerable attention in the literature. Examples of more complicated models can be found in Follain, Hendershott, and Ling (1987). The yield on GNMA mortgage-backed securities as a measure of before-tax opportunity costs is used in this study for simplicity and because doing so tends to produce slightly lower required yields, and therefore tax expenditure estimates, than the "capital market" approach used by Follain, Hendershott, and Ling (1987).

Table 3. Mean Values of Selected Variables for Owners: by Income Class from 1989 Supplemented (American Housing Survey) Data

AGI (\$)	Average AG <sup>a</sup> (\$)	Number of Households <sup>b</sup> (Millions)	Average Home Value-to-Home Income Ratio (%)		Average Leverage Ratio <sup>c</sup> (%)	Average Age R <sup>d</sup> (%)	Average Mortgage Interest		Average Property Tax Deduction (\$)	Average Non-housing Expense <sup>e</sup> (\$)		Wasted Housing Expense <sup>f</sup> (\$)
			Average Value-to-Home Income Ratio (%)	Average Home Income Ratio (%)			Age	Interest (\$)		Standard Deduction (\$)	Non-housing Expense (\$)	
0-5	1,575	8.22	60,876	-	14.7	9.71	509	593	4,398	0	4,377	
5-10	7,598	4.71	66,839	9.1	15.2	9.16	723	682	4,716	27	4,689	
10-15	12,826	4.37	66,790	5.2	22.1	8.66	1,112	711	4,691	101	4,590	
15-20	18,235	4.86	74,435	4.1	22.7	8.45	1,213	820	4,765	391	4,374	
20-25	23,163	4.42	72,261	3.1	33.5	8.29	1,942	802	4,678	885	3,793	
25-30	27,788	4.68	76,244	2.7	42.7	8.07	2,474	842	4,728	1,448	3,281	
30-35	32,927	3.82	78,089	2.4	41.4	8.00	2,847	868	4,742	2,105	2,637	
35-40	38,023	3.83	90,650	2.4	40.6	8.01	3,417	967	4,844	2,747	2,097	
40-45	42,822	3.37	99,175	2.3	43.8	7.73	3,800	1,112	4,949	3,343	1,605	
45-50	48,017	2.88	107,776	2.2	42.8	7.37	4,100	1,156	4,962	4,023	939	
50-60	55,283	4.63	115,110	2.1	44.3	7.11	5,009	1,260	5,073	4,923	150	
60-75	67,130	3.97	128,633	1.9	40.2	6.98	4,843	1,414	5,088	6,484	(1,396)	
75-100	87,398	3.33	170,067	1.9	40.6	6.91	7,614	1,991	5,089	9,216	(4,127)	
100-120	108,486	1.38	196,363	1.8	44.4	6.69	3,500	2,435	5,054	11,989	(6,935)	
120+	152,856	1.34	260,522	1.7	49.4	6.59	17,714	3,081	5,158	17,814	(12,656)	
<b>Total/all<sup>g</sup></b>	<b>35,855</b>	<b>59.90</b>	<b>94,675</b>	-	<b>32.8</b>	<b>8.10</b>	<b>33,297</b>	<b>1,042</b>	<b>4,795</b>	<b>2,906</b>	<b>1,890</b>	

Source: Authors' tabulations and estimates from the American Housing Survey (AHS), 1989 National File, supplemented with nonhousing expense estimates from the Internal Revenue Service 1985 Individual Tax Model File.

<sup>a</sup> AGI is adjusted gross income in thousands.

<sup>b</sup> Number of households is based on the AHS survey sample projected back to the population based on household weights.

<sup>c</sup> Leverage ratio is the households outstanding mortgage debt divided by the estimated home value.

<sup>d</sup>  $R_t$  is the average before-tax required return on invested housing equity,  $R_t = (1-t_i)i(e)$ , where  $t_i$  is the household's marginal tax rate,  $i(e)$  is before-tax return on an investment of similar risk, and  $i(e)$  is set equal to 9.71 percent, the average 1989 yield of Government National Mortgage Association (GNMA) mortgage-backed securities.

<sup>e</sup> Itemized nonhousing deductions available for deduction on Schedule A, Form 1040.

<sup>f</sup> Wasted housing expense represents the difference between the household's standard deduction and its itemized nonhousing deductions (i.e., the amount of housing deductions that will be absorbed before providing any benefit beyond simply using the standard deduction).

<sup>g</sup> Totals and differences may be off by one due to rounding.

Total tax liability estimates are displayed in table 4. Under current law, total tax revenues from owner-occupied households are estimated at \$260.7 billion. If interest rates, house values, quantity demanded, and financing decisions of households are held constant, tax revenues in a neutral system would be \$369.7 billion, which implies an annual tax expenditure to owner-occupied housing of \$109 billion, more than twice the size of the largest JCT and OTA estimates.<sup>14</sup>

The mortgage interest deduction accounts for \$35.5 billion of the \$109 billion total. This estimate of the mortgage interest expenditure differs little from the JCT and OTA estimates. It should be mentioned that the tax expenditure estimated here appears inconsistent with the National Income and Product (NIP) accounts produced by the Bureau of Economic Analysis (BEA), which report that implicit rental income from owner-occupied housing was *negative* \$27.8 billion for 1989 (Bureau of Economic Analysis 1990).

The relationship of these estimates requires a brief explanation to demonstrate that the numbers in this article are reasonable and actually consistent with BEA numbers on net implicit rental income. First and most important, NIP accounts do not consider capital gains and therefore understate imputed rental income. Assuming that equilibrium capital gains on an AHS owner-occupied housing stock worth in excess of \$5.6 trillion are 5 percent per year, NIP understates implicit rental income by more than \$280 billion.

Based on this information, here is a simple expression for the expenditure to owner-occupied housing:  $t(NIR + iM)$ , where  $t$  is the marginal tax rate,  $NIR$  is net implicit rental income, and  $iM$  is the amount of mortgage interest deducted. Using this expression and the above assumptions about the values of the components of the tax expenditure suggests that the tax expenditure itself is about \$100 billion. This number is obtained by assuming an average marginal tax rate of 22 percent, net implicit rental income of \$252 billion ( $\$280 - \$28$ ), and mortgage interest payments of \$196.5 billion (from the same BEA source as above). Obviously, this calculation is much simpler than the one presented in this

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<sup>14</sup> Follain and Ling (1991) estimate the annual tax expenditure to be \$82 billion instead of our estimate of \$109 billion. The primary reason for the difference is that Follain and Ling calibrate their model to the total housing stock value of \$2.9 trillion estimated by Musgrave (1992). This estimate does not include the value of the homeowner's land. In contrast, this study uses the 1989 value estimates of homeowners for both land and structure, which produces a total housing stock value of some \$5.6 trillion (average house price of \$94,675 times 59.9 million owner households).

*Table 4. Tax Liabilities of Owners by Income Class: Current Versus Neutral Tax System  
Total Federal Tax Liabilities in Millions of Dollars (Average Federal Tax Liabilities in Dollars)*

AGI <sup>a</sup>	Total Current Tax Liability <sup>b</sup> (\$)	Percent of Total (%)	Cumulative Percent (%)	Total Neutral Tax Liability <sup>c</sup> (\$)	Difference from Current (4) to (1) (\$)	Percent of Total (%)	Cumulative Percent (%)	Average Current Tax Liability <sup>b</sup> (\$)
0-5	0	0.0	0.0	2,473	2,473	2.3	2.3	301
5-10	525	0.2	0.2	3,631	3,107	2.9	5.1	659
10-15	2,205	0.8	1.0	5,527	3,323	3.0	8.2	761
15-20	5,695	2.2	3.2	10,527	4,832	4.4	12.6	994
20-25	7,165	2.7	6.0	11,495	4,330	4.0	16.6	979
25-30	10,474	4.0	10.0	15,605	5,132	4.7	21.3	1,096
30-35	11,145	4.3	14.3	15,796	4,651	4.3	25.6	1,216
35-40	13,861	5.3	19.6	19,896	6,034	5.5	31.1	1,575
40-45	14,393	5.5	25.1	21,012	6,619	6.1	37.2	1,967
45-50	15,009	5.8	30.9	21,991	6,982	6.4	43.6	2,426
50-60	30,585	11.7	42.6	43,905	13,320	12.2	55.8	2,874
60-75	37,262	14.3	56.9	50,597	13,335	12.2	68.0	3,358
75-100	45,569	17.5	74.4	61,454	15,885	14.6	82.6	4,777
100-120	25,549	9.8	84.2	34,096	8,547	7.8	90.5	6,203
120+	41,319	15.8	100.0	51,719	10,400	9.5	100.0	7,734
<b>Total/average<sup>d</sup></b>	<b>260,755</b>			<b>369,726</b>	<b>108,970</b>			<b>1,819</b>

*Source:* Authors, tabulations and estimates from the American Housing Survey, 1989 National File, supplemented with nonhousing expense estimates from the Internal Revenue Service 1985 Individual Tax Model File.

<sup>a</sup> AGI is adjusted gross income in thousands.

<sup>b</sup> Current tax liability is the regular 1989 individual tax liability after credits.

<sup>c</sup> Neutral tax liability is the tax liability when net implicit income (NII) is included in gross income and mortgage interest and property taxes are not allowed as deductions.

<sup>d</sup> Totals and differences may be off by one due to rounding.

article, but it does suggest that the more complex calculations are roughly consistent with the BEA data when similar assumptions are used.

The \$109 billion total homeowner tax expenditure is not suggested as an estimate of actual tax revenue increases because, like JCT and OTA estimates, it does not account for market feedback effects or for alterations in household behavior (i.e., “general equilibrium” effects) that may result from a change to neutral taxation of owner-occupied housing. In a neutral tax system, all households would have less of an incentive to choose owning over renting and those who did choose to own would likely own smaller houses. Further, removing homeowner tax preferences would probably alter relative before-tax rates of return on various uses of the capital stock and reduce house prices, at least in the short run. Reductions in homeownership rates, house values, and the quantity of housing services consumed by owning households would combine to reduce the amount of additional tax revenue that would actually be collected in a tax system characterized by neutral treatment of owner-occupied housing.

### **Distributional aspects of the homeowner tax expenditure**

Two aspects of the distribution of the tax expenditure are important to note: the distribution among income groups (vertical) and the distribution within income groups (horizontal). Both are discussed in the following section.

#### *Vertical equity*

Vertical distributional effects may be addressed by examining average homeowner tax preferences across owner income groups.<sup>15</sup> Column 8 of table 4 contains estimates of average tax expenditures per owner household by income class. Overall, homeowner tax savings average \$1,819, but they vary greatly by income, ranging from \$301 for the \$0 to \$5,000 income class to \$7,734 for the highest class considered. The curve (full expenditure under the current system) in figure 2 graphically depicts these average total tax savings as a function of income.

A movement to neutral taxation of owner-occupied housing without any reduction in tax rates would produce increased tax liabil-

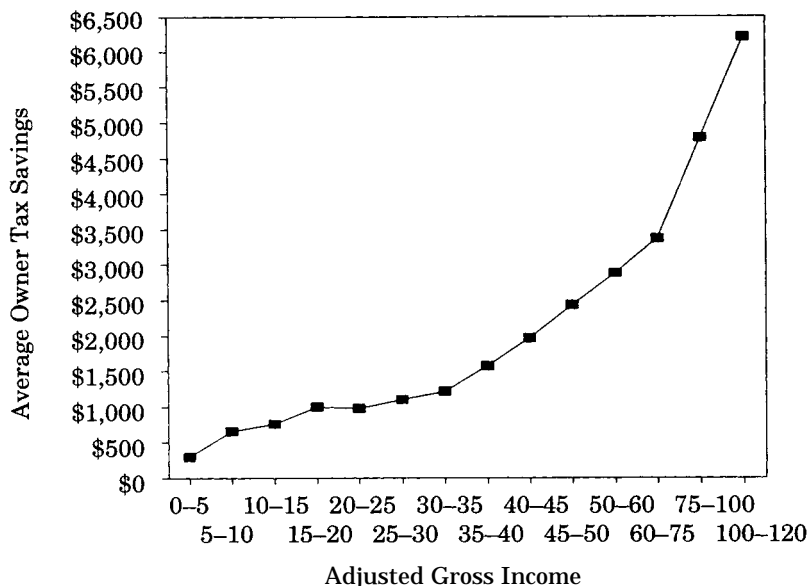
ities for owners in all income classes (table 4, column 5). Indeed, it is tempting to conclude that high-income households would suffer the most from such a movement because they receive the largest absolute share of the expenditure. However, any distributional analysis of the effects of a movement to neutral taxation of owner-occupied housing must include an assumption about the use to which the increased tax revenue would be put. If the change to neutral tax treatment of owner-occupied housing is revenue neutral and the increase in tax revenue is redistributed to homeowners via equal percentage reductions in other federal income taxes, neutral taxation would result in a tax system that would be *less* progressive for homeowners than the current system because the fraction of total tax liability collected from owners in low- and middle-income classes would increase.<sup>15</sup>

To verify this finding requires comparing columns 3 and 7 in table 4. Households with an AGI of less than \$30,000 receive 21.3 percent of the \$109 billion tax expenditure, although they pay just 10.0 percent of total owner tax liabilities. Conversely, households with an AGI greater than \$75,000 receive just 32 percent of the estimated \$109 billion tax expenditure, although under current law they pay 43 percent of total homeowner tax liabilities. Households with between \$30,000 and \$75,000 in AGI receive 46.7 percent of the total tax expenditure to owner housing—an approximately even exchange for bearing 46.9 percent of the current tax liability. Figure 3 depicts the relationship between share of homeowner tax expenditures and share of owner tax liabilities under current law and clearly demonstrates that lower-income households (on average) actually receive a disproportionate share of the total tax expenditure when

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<sup>15</sup> If the change to a neutral system is not accompanied by proportional income tax cuts, the relative progressivity of the resulting tax system depends on how the increased revenues are returned to the public. For example, if all the increased revenue were distributed to low- and middle-income households via tax relief or direct assistance, then the change to a neutral system would result in a more progressive tax system. Depending on the relative distribution of renter households across income groups, the resulting tax system might also be more or less progressive when renters are considered. The income group classification used here is based on federally defined AGI. Consequently, on the basis of a classification using economic income, low- and moderate-income households with large amounts of net implicit rental income might not be considered low and moderate income. Although taxing net implicit rental income might produce a more progressive tax system when considering total economic income, collecting substantially increased tax revenues from otherwise low- and moderate-income households (based on money income) relative to higher income households likely would not be considered a progressive policy response.

Figure 2. Average Owner Tax Savings by Income Class Measured Relative to a Neutral Tax System



Source: Authors' tabulations and estimates from the American Housing Survey, 1989 National File, supplemented with nonhousing expense estimates from the Internal Revenue Service 1985 Individual Tax Model File.

Note: Average owner tax savings is neutral tax liability less current tax liability (regular 1989 individual tax liability after credits).

controlling for their percentage share of the current tax liability; higher income households receive less than their proportionate share of the total tax expenditure. Thus, if increased tax revenues were redistributed via proportional tax cuts, the adverse effects from removing *all* homeowner tax preferences, including the nontaxation of net implicit income, would seem to be borne most heavily by owner households with an AGI of less than \$35,855 (the population mean).

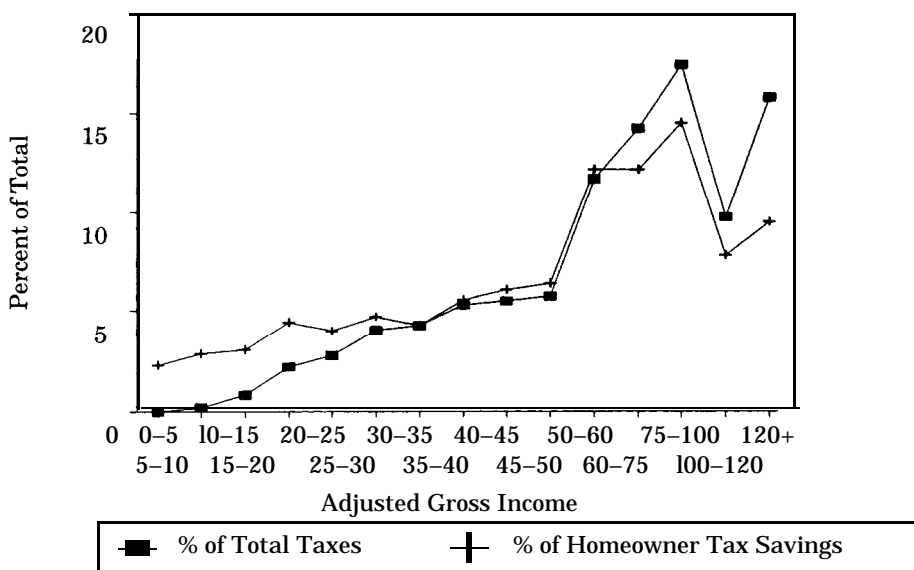
A variation of the Suits Index is used to assess more formally the vertical distribution of homeowner tax preferences under these assumptions (Suits 1977). As typically employed, the Suits Index measures the average relationship between the cumulative percentage of the total tax burden borne by a tax-paying population as income increases and the cumulative percentage of total income earned by that population. The normal range of the index is from -1 to +1, with -1 indicating extreme regressivity of the

entire tax system, +1 indicating extreme progressivity, and zero indicating proportionality.

An index of the relationship graphically depicted in figure 3 is desired, that is, a measure of the relationship between the cumulative percentage of the total homeowner tax expenditure received by owning households as income increases and the cumulative percentage of the total tax burden borne by these households. In this application, the Suits Index will equal zero if, on average, the cumulative percentage of homeowner tax expenditures equals the cumulative percentage of homeowner taxes paid. A  $-0.192$  value for the Suits Index indicates that the distribution of the full expenditure under current law is indeed regressive; that is, lower income households receive a disproportionate share of total homeowner tax preferences relative to the share of federal income taxes they pay.

Neutral taxation of owner-occupied housing is neither endorsed nor predicted for adoption. Rather, these scenarios point out an

Figure 3. Percent of Total Owner Tax Expenditure Versus Percent of Total Owner Tax Liability



Source: Authors' tabulations and estimates from the American Housing Survey, 1989 National File, supplemented with nonhousing expense estimates from the Internal Revenue Service 1985 Individual Tax Model File.

Note: Percent of total taxes is the total income tax paid by all owners in an income group divided by total taxes paid by all owners. Percent of homeowner tax savings is the total tax expenditure accruing to owners in an income group divided by total tax expenditure accruing to all owners.

important fact: The distribution of the tax expenditure to owner-occupied housing is less skewed toward high-income households than the distribution of current tax liability. As a result, it is possible that a move to a neutral tax system may actually make the distribution of the tax burden across owner income groups less progressive than the current distribution of homeowner tax liabilities. This possibility emphasizes that any proposal to reform the taxation of owner-occupied housing must state clearly how the additional revenues will be used before the net impact of the proposal on the vertical distribution of tax liabilities can be understood.

### *Horizontal equity*

Horizontal equity requires that owning households with equivalent incomes receive equivalent amounts of homeowner tax savings. Thus, a useful measure of horizontal equity in this context is the coefficient of variation, with higher values of the coefficient of variation representing greater horizontal inequity.<sup>16</sup>

The first column of table 5 reveals that the coefficient of variation of the full owner expenditure is a decreasing function of income class (see also figure 4). Many low- and moderate-income households receive little value from their mortgage interest deductions (because nonhousing expenses are less than the standard deduction), yet these households are forced by wealth constraints to use an amount of mortgage debt that does not allow them to maximize the value of their homeowner tax savings. However, many low- and moderate-income taxpayers belong to older households with little or no mortgage debt that are thus better able to maximize the value of their homeowner tax savings. More variability in tax savings exists for these income groups. The antidebt bias diminishes as incomes rise (and nonhousing expenses increase relative to the standard deduction). For higher-income groups, the size of the tax preference primarily reflects the amount of housing consumed, not the method by which it is financed. In fact, the relative reduction in the variability of owner tax savings for income classes be-

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<sup>16</sup> The coefficient of variation is defined as  $CV_{\infty j} = SD_{\infty j} / R_{\infty j} * 100$ , where  $SD_{\infty j}$  is the standard deviation of the full tax expenditure and  $R_{\infty j}$  is the mean tax expenditure for income group  $j$ . Dividing the standard deviation of the expenditure by the mean value for each income group produces a measure that is scale free and thus allows comparisons between different income groups. For more details, see Ehrenburg (1975) and Anderson (1985,1988).

Table 5. **Horizontal Equity of Homeowner Tax Expenditure: Coefficient of Variation<sup>a</sup> by Income Class**

AGI <sup>b</sup>	Homeowner Tax Expenditure (%) <sup>c</sup>
0 – 5	227.7
5 – 10	128.4
10 – 15	122.7
15 – 20	112.7
20 – 25	110.7
25 – 30	101.4
30 – 35	101.9
35 – 40	89.2
40 – 45	76.7
45 – 50	65.9
50 – 60	60.1
60 – 75	54.9
75 – 100	63.1
100 – 120	69.2
120+	88.7
<b>All</b>	<b>135.2</b>

Source: Authors' tabulations and estimates from the American Housing Survey, 1989 National File supplemented with nonhousing expense estimates from the Internal Revenue Service 1985 Individual Tax Model File.

<sup>a</sup> Coefficient of variation ( $CV_{\infty j}$ ) is defined as  $CV_{\infty j} = SD_{\infty j} / R_{\infty j} * 100$ , where  $SD_{\infty j}$  is the standard deviation of the tax expenditure and  $R_{\infty j}$  is the mean tax expenditure for income group  $j$ . Higher  $CV_j$  values represent greater horizontal inequity.

<sup>b</sup> AGI is adjusted gross income.

<sup>c</sup> Homeowner tax expenditure is neutral tax liability less current tax liability (regular 1989 individual tax liability after credits).

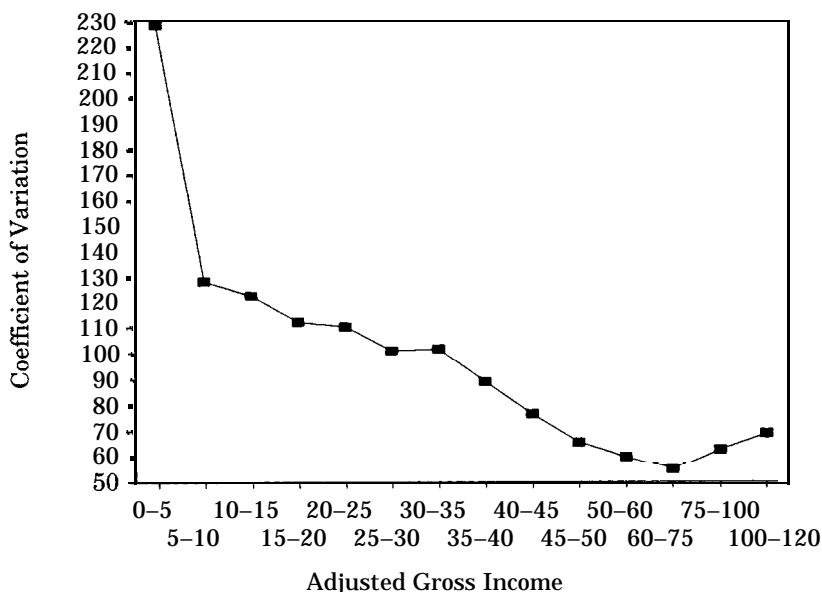
yond \$50,000 in AGI is understated because the width of the income ranges increases.

## Summary and policy implications

This article employs a model of annual homeowner tax expenditures estimated from a microlevel data set. The model includes net implicit income and also measures more accurately the value of housing-related expenses by explicitly modeling the complex interaction between standard deductions, nonhousing expenses, and household mortgage debt. Special attention is also given to the distribution of the expenditure across and within income classes.

The analysis leads to three major conclusions. First, on net, the inclusion of net implicit income in the measure of homeowner tax savings adds a substantial amount to the estimated tax expenditure given to owner-occupied housing: the aggregate tax ex-

Figure 4. **Horizontal Equity of Homeowner Tax Expenditure Measured by Coefficient of Variation**



Source: Authors' tabulations and estimates from the American Housing Survey, 1989 National File, supplemented with nonhousing expense estimates from the Internal Revenue Service 1985 Individual Tax Model File.

Note: Coefficient of variation ( $CV_{\infty j}$ ) is defined as  $CV_{\infty j} = SD_{\infty j} / R_{\infty j} * 100$ , where  $SD_{\infty j}$  is the standard of deviation of the tax expenditure and  $R_{\infty j}$  is the mean tax expenditure for income group  $j$ . A smaller  $CV_j$  represents greater horizontal equity. Homeowner tax expenditure is neutral tax liability less current tax liability (regular 1989 individual tax liability after credits).

penditure is estimated at \$109 billion for 1989, approximately two and one-half times larger than the JCT and OTA estimates.

Second, the interaction of changes in the standard deduction and in the tax treatment of itemized nonhousing expenses has rendered the mortgage interest deduction worthless, or nearly so, for many low- and moderate-income households, thus introducing an antimortgage-debt bias into the federal income tax code. This finding does not imply that the TRA86 reforms that led to these effects should themselves be reversed or that this outcome was intended. More likely, the antidebt bias is an unintended consequence with the potential of adversely affecting many first-time home buyers and low- and middle-income home buyers.

Third, the impact of the inclusion of net implicit rental income on the vertical distribution of income is complex and depends on the manner in which the additional revenues obtained from such a reform are redistributed to households. The complexity arises from the fact that the tax expenditure is not distributed as progressively as the current tax liability, even though the distribution of the after-tax price of owner-occupied housing is skewed toward high-income households. An examination of the distribution of tax expenditures among households within income groups (horizontal equity) shows that much inequity exists, especially in the low- and middle-income classes.

Although estimates of the tax expenditure to owner-occupied housing and its distribution among households are interesting in themselves, it is important to note that these estimates do not necessarily produce accurate estimates of the tax revenues that might be gained by reducing or eliminating the preferential tax treatment of owner-occupied housing. It is likely, for example, that a reduction in such preferential treatment would increase the after-tax cost of housing and reduce the demand for owner-occupied housing. If the tax change produces a substantial increase in the annual carrying cost of homeownership and if housing demand is particularly sensitive to carrying cost, then it is conceivable that the actual revenue gained would be considerably less than the estimated tax expenditure. In short, without making behavioral assumptions about utility and demand, it is difficult to conclude which alternative policy is the best substitute for the current tax treatment of owner-occupied housing.

Nevertheless, the analysis does suggest several ideas that ought to be considered in future discussions of the tax treatment of owner-occupied housing. First, efforts to reduce the expenditure and improve its distribution by focusing on the mortgage interest deduction are likely to fall short of expectations. Removing interest deductibility would not eliminate a prodebt bias, but would rather extend the antidebt bias introduced by TRA86 to all owning households with mortgage debt. However, because the ability to equity-finance increases with income, the antidebt bias would primarily penalize lower-income, less wealthy households—the very people our housing policy should be designed to serve.

Second, in the absence of a major change in the current tax treatment of owner-occupied housing, consideration should be given to a policy that increases the value of the mortgage interest deduction for low- and middle-income households that rely on mortgage debt to purchase housing but that do not have

enough itemized nonhousing deductions to make effective use of their mortgage interest and property tax expenses. This goal can be accomplished by making mortgage interest payments an adjustment to income rather than an itemized deduction. If we hold housing decisions, house values, tax rates, and standard deductions constant, we calculate that the loss in revenues from such a change would be approximately \$8 billion. Although expensive, this policy would restore to many low- and moderate-income households the full benefit of the mortgage interest deduction and improve horizontal equity. Further, the cost of such a policy could be reduced by capping the allowable adjustment to income or, similarly, changing the deduction to a credit. A flat, nonrefundable 15 percent credit would increase tax revenues by about \$10 billion (with the same caveat as above). Such a change would increase the availability of tax benefits from the mortgage interest deduction for low- and moderate-income households and would likely improve horizontal equity.

Third, the distribution of the tax expenditure relative to tax burdens suggests that moving to a neutral tax system may be more burdensome for lower income owner households and less burdensome for high-income owner households than previously thought. To the extent that previous thinking hampered efforts to reform this area of the income tax, perhaps the perspective offered in this article will encourage others to reexamine their own opinions on the tax treatment of owner-occupied housing,

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### *References*

Aaron, Henry J. 1972. *Shelters and Subsidies: Who Benefits from Federal Housing Policies?* Washington, DC: Brookings Institution.

Anderson, Kenneth E. 1985. A Horizontal Equity Analysis of the Minimum Tax Provisions: An Empirical Study. *The Accounting Review* 60:357–71.

Anderson, Kenneth E. 1988. A Horizontal Equity Analysis of the Minimum Tax Provisions: 1976–1986 Tax Acts. *Journal of the American Taxation Association* 10:7–25.

Bureau of Economic Analysis, U.S. Department of Commerce. 1990 (July). *Survey of Current Business* 70–77.

Ehrenburg, A.S.C. 1975. *Data Reduction: Analyzing and Interpreting Statistical Data*. New York: John Wiley and Sons.

Follain, James R., Patric H. Hendershott, and David C. Ling. 1987. Understanding the Real Estate Provisions of Tax Reform: Motivation and Impact. *National Tax Journal* 40:363–72.

Follain, James R., and David C. Ling. 1988. Another Look at Tenure Choice, Inflation, and Taxes. *Journal of the American Real Estate and Urban Economics Association* 16:207–29.

Follain, James R., and David C. Ling. 1991. The Federal Tax Subsidy to Housing and the Reduced Value of the Mortgage Interest Deduction. *National Tax Journal* 44:147–68.

Hendershott, Patric H. 1988. Home Ownership and Real House Prices: Sources of Change, 1965–1985. *Housing Finance Review* 7:1–18.

Joint Committee on Taxation. 1988. *Estimates of Federal Tax Expenditures for Fiscal Years 1989–1993* (JCS–3–88).

Ling, David C., and Gary A. McGill. 1992. Measuring the Size and Distributional Effects of Homeowner Tax Preferences. *Journal of Housing Research* 3(2):273–303.

Musgrave, John C. 1992. Fixed Reproducible Tangible Wealth. *Survey of Current Business* 72:136–37.

*Special Analysis: Budget of the United States Government, FY 1981*. Washington, DC: U.S. Government Printing Office, 1981.

*Special Analysis: Budget of the United States Government, FY 1990*. Washington, DC: U.S. Office of Management and Budget, 1989.

Suits, D.B. 1977. Measurement of Tax Progressivity. *American Economic Review* 67:747–52.

Woodward, Susan E., and John C. Weicher. 1989. Goring the Wrong Ox: A Defense of the Mortgage Interest Deduction. *National Tax Journal* 62:301–13.