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**Taxes and Capital Gains Realizations:  
Evidence from a Long Panel**

by

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December 2004

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For presentation at the Society of Government Economists session at the Allied Social Science Association Meetings, January 8, 2005. The authors are grateful to Len Burman, and Don Kiefer for helpful comments, and the Statistics of Income Division of the IRS, Portia DeFilippes, Robert Gillette, and Gordon Wilson for their contributions to the development of the panel data used in paper. The views expressed are those of the authors, and do not necessarily reflect those of the Department of the Treasury.



## Preliminary Draft

### Taxes and Capital Gains Realizations: Evidence from a Long Panel

#### Abstract

This paper examines the effects of capital gains taxes on gains realized over a period of 17 years. Specifically, it focuses on permanent and transitory effects of capital gains taxes in an attempt to explain the observed pattern of realizations for 1979 through 1995. This period included a number of changes in tax regimes which, unlike periods examined in previous studies, resulted in both tax rate reductions and increases. Identification of tax effects is provided by the natural experiments provided by both state and Federal tax rate changes. Using a long panel of tax returns spanning this period, we find that capital gains taxes have both permanent and transitory effects on realizations of capital gains. Consistent with most previous studies, we find both permanent and transitory responses to changes in capital gains tax rates, and that transitory effects are larger than permanent effects.

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## 1. Introduction

The effects of taxes on capital gains realizations have long been debated. Because these realizations are generally voluntary in nature and investors can decide if and when, and how much to realize, the behavioral responses to capital gains taxes are thought to be larger than those that apply to other sources of income. Given the discretionary nature of realizations and the existence of the step up in basis at death, capital gains taxes may lead to significant lock-in effects, as individuals can elect to defer the realization of gains or pass their assets free from capital gains taxes to their heirs.

This paper explores the effects of taxes on the realization of capital gains, both transitory and permanent. We employ a panel of tax returns spanning the years of 1979 through 1995 to examine the effects of taxes on realizations of capital gains. The panel is unique in that it spans several major tax law changes that include both significant increases and decreases in tax rates. These tax law changes are used to identify permanent and transitory capital gains tax rate effects based on statutory changes over time. In addition, we exploit differences in state tax rates as well. We find that taxes have substantial effects on decisions to realize capital gains and that permanent and transitory effects diverge considerably.

This paper is organized as follows. In the next section, we provide a review of the literature. Section 3 presents a summary of changes in tax law and an overview of the data on capital gains realizations for the period 1979 through 1995. In section 4, we discuss estimation and data related issues. In section 5, we present our preliminary results. Conclusions are presented in section 6.

## 2. Previous Studies of Capital Gains

Empirical studies have used a variety of data sources and estimating methodologies to examine the effects of taxes on realizations. The seminal study by Feldstein, Slemrod and Yitzhaki (FSY, 1980) used a large cross-section sample of 1973 tax returns and found large effects of capital gains tax rates on decisions to sell and realize gains on corporate stock. FSY

limited their sample to taxpayers with at least \$3,000 in dividends, thereby focusing on taxpayers with large portfolios. Evaluated at the mean tax rate of 26.5 percent and the mean of the dependent variable, the estimates imply an elasticity of realizations with respect to the tax rate of -3.75. While this elasticity is quite large, it is not directly comparable to later studies because the study focused on corporate stock gains and limited the sample to wealthy investors who may be the most sensitive to tax rates. Using the same data set, but weighted regressions and a different functional form, Minarik (1981) estimated a much lower elasticity, -0.44 at weighted mean values. Minarik, however, did not account for truncation problems created by the large percentage of zero values.

The use of cross-section data for the analysis of capital gains is questionable, however. In cross-section data, the identification of tax effects requires the use of differences in deductions, marital status and other similar factors that cause tax rates to vary at a given income level. As recognized by FSY, the use of cross-section data may overstate long-run tax rate effects if taxpayers are realizing gains in response to temporarily low rates (see also Auten and Clotfelter 1982, Slemrod and Shobe, 1990, and Burman and Randolph, 1994).

Auten and Clotfelter (AC, 1982) estimated separate permanent and transitory tax rate effects using a panel of the income tax returns of a random sample of taxpayers for the period 1967-1973. This study showed the importance of correction for selection bias, the sensitivity of results to different specifications, and the importance of the separation of permanent and transitory tax rate effects. The study reported permanent tax rate elasticities for total long-term gains ranging from -0.36 to -1.45 and transitory elasticities ranging from -0.91 to -3.46. Slemrod and Shobe (1990) used a high-income subset of a random panel, consisting of the tax returns of 307 taxpayers for the years 1979-1984. Because of the small sample size, many of their coefficients were not measured precisely. They concluded that there is consistent but not overwhelming effects of capital gains tax rates and emphasized the sensitivity of results to differences in specification assumptions.

Bogart and Gentry (BG, 1995) argue that state tax rates reflect permanent rather than transitory tax rate effects. Using aggregate pooled cross-section time-series for states for 1978 through 1990 and the maximum combined state and federal tax rates as a proxy for capital gains

tax rates, they report an elasticity of -0.65 in their preferred model. Burman and Randolph (1994a and 1994b) use the maximum combined state and federal tax rates as an instrument in their study using a panel of individual income tax returns for the years 1980-1983. They report a permanent elasticity of -0.18 (at an 18 percent tax rate) and a transitory elasticity of -6.42. Using a panel of tax returns for the period 1986-1993, Auerbach and Siegel find similar results for their replication of the BR methodology, but quite different results using an alternative model that accounts for the effects of future tax rates. Under their alternative model, they report a permanent tax rate elasticity of -1.73 and a transitory elasticity of -4.35.

A number of studies have used aggregate time series data from the IRS Statistics of Income to model capital gains. Auten (1980) used pooled aggregate realizations data for 5 high income classes for the years 1952 through 1976. In the constant elasticity model, the estimated permanent tax rate elasticity was -0.84 and the transitory elasticity was -2.05. Lindsey (1987) also used pooled cross-section time-series analysis and estimated a tax rate coefficient that implies an elasticity of -1.2 at a 20 percent tax rate and concluded that the revenue maximizing capital gains rate would be about 18 percent. A comprehensive analysis by the Congressional Budget Office (1988) estimated realization elasticities ranging from -0.6 to -0.8 in their primary equations evaluated at a 20 percent tax rate. Other time series studies include Auerbach (1989), Auten (1983), Jones (1989), Gillingham and Greenlees (1992), and Eichner and Sinai (2000). The time series analysis has been summarized as generally finding realizations elasticities between -0.5 and -0.9, which are generally interpreted as long-run elasticities. Several studies (for example, Jones (1989) and Auerbach (1989)), however, have noted the sensitivity of time series estimates to the inclusion or exclusion of a few years, especially around the Tax Reform Act of 1986 and the Korean War surcharge. Limited attempts have been made to use time series data to gauge the effect of tax rate differentials (Jones, 1989; Cook and O'Hare, 1987).

### 3. Summary of Tax Law Changes and Capital Gains Realizations: 1979-1995

Over the period examined in this study, there were numerous changes in the tax law. At the beginning of the panel period, long-term capital gains qualified for a 40 percent exclusion, and

the maximum rate was 28 percent. The maximum rate was reduced to 20 percent in the Economic Recovery Tax Act of 1981 (ERTA), which reduced income tax rates across the board by 25 percent, phased in over 3 years. To avoid creating an incentive to defer capital gains realizations, an alternative capital gains rate of 20 percent was provided for assets sold after June 9, 1981. The Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) did not directly affect capital gains tax rates, but changing the AMT to a flat 20 percent rate had the effect of increasing the rate on infra-marginal gains, thereby increasing the overall cost of realizations for taxpayers whose income consisted primarily of long-term capital gains.

Capital gains tax rates were increased substantially by the Tax Reform Act of 1986 (TRA86). One of the most significant base broadeners was the repeal of the capital gains exclusion effective January 1, 1987. Beginning in 1988, the net effect of tax reform was to increase the tax rate on capital gains on the highest income taxpayers from 20 to 28 percent. A 33 percent “bubble” rate applied to both capital gains and ordinary income over the income range in which certain tax benefits were phased out. The bill was signed into law on October 22, 1986, providing taxpayers with a window of several months in which to sell appreciated assets under the old lower capital gains rates. As a result of this window, the amount of realized capital gains approximately doubled in 1986 as compared to 1985 levels. From 1988 through 1990, capital gains were taxed at the same rates as other income.

In the Omnibus Budget Reconciliation Act of 1990, the maximum rate on ordinary income was increased to 31 percent, but the “bubble” rate of 33 percent was repealed and a new 28 percent maximum statutory rate was provided for capital gains. As a result, capital gains tax rates were reduced for some upper middle income taxpayers, but increased slightly for the highest income taxpayers due to a new 3 percent floor under itemized deductions.

The Omnibus Budget Reconciliation Act of 1993 introduced two new ordinary income tax rates on high income taxpayers retroactive to the beginning of 1993. No direct changes were made to capital gains treatment, and the 28 percent maximum tax rate was retained. However, the effective maximum tax rate on capital gains increased for high-income taxpayers due to the interaction effects of the increase in the top ordinary tax rate to 39.6 percent and the 3 percent floor under itemized deductions.



Summary data on capital gains realizations and related economic variables are presented in Table 1. Tabulations from the panel are presented on the probability of realizing gains, the mean amount of gains realized, and the mean capital gains and ordinary tax rates. These tabulations are classified by year and mean permanent income where permanent income is measured as constant law average AGI including capital gains. The table shows that the percentage of taxpayers realizing gains rose during the first half of the 1980s, reaching a peak in 1986 and then declined in the late 1980s when capital gains tax rates were increased. The most apparent highlight in realizations was the doubling of realizations in 1986 as taxpayers accelerated realizations ahead of the anticipated tax rate increase. The table shows the current year capital gains tax rate and the future tax rate, defined as the fully phased-in tax law known as of that year. For example, for years 1982 through 1984, the fully phased in law (under ERTA) was 1984 law, under which the tax rates and brackets were pre-specified. In 1986 and 1987, the fully phased-in law was that of 1988.

#### 4. Modeling Capital Gains Realizations

In modeling the determinants of capital gains realizations, investors are assumed to consider current and expected future tax rates in shaping their decisions. Current tax rates are important because they raise the transaction cost of trading assets. For the bequest motivated saver, this cost can be significant when contrasted with transfers free from capital gains taxation accorded by the step up in basis treatment at death. Future tax rates are important in the tax minimization strategy of traders, whereby they may accelerate or delay their sales depending on whether rates are expected to rise or fall.

Empirically, investors are assumed to consider whether to sell and realize gains, and conditional upon this choice decide how much to realize. More formally, these two are modeled as:

$$(1) \quad I = \alpha_0 + \alpha_1 \tau_t + \alpha_2 \tau_{t+1} + \alpha_3 \tau_{t-1} + \alpha_4 X$$

$$(2) \quad G = \beta_0 + \beta_1 \tau_t + \beta_2 \tau_{t+1} + \beta_3 \tau_{t-1} + \beta_4 X$$

where  $X$  is a vector of exogenous variables. A lagged tax rate is considered to control for past decisions.

#### 4.1 Data

In estimating the probability of realizing gains and the amount of gains realized, we employ data from a 17-year panel spanning the years 1979 through 1995. The panel is based on a sample of 20,115 tax returns selected in 1981 and then followed backward two years to 1979, and forward to 1995. High-income returns were oversampled, so that the panel includes a large number of high-income returns likely to capital gains producing assets.

In order to focus on taxpayers most likely to have sufficient wealth to allow for capital gains realizations, the sample is limited in several ways. Dependent taxpayers and those under age 21 in 1980 are dropped from the sample in order to eliminate taxpayers whose decisions are likely being made by others. The sample is limited to taxpayers with at least \$400 in mean portfolio income over the sample period, although this requirement is relaxed for several sensitivity tests.<sup>1</sup> Portfolio income for this purpose is defined as the sum of dividends and interest plus the absolute values of income from rental activities, partnerships, estates and small business corporations. The underlying assets that generate these sources of income represent the major sources of potential capital gains. Since the composition of the household changes with marriage and divorce, taxpayers were also dropped from the sample if they did change marital status.

#### 4.2 Definitions of Variables

The primary variables of interest include the amount of capital gains realized and tax rates. Capital gains are defined as the excess of net long-term gains over any short-term losses or loss carry-overs. An alternative variable is considered which is defined as net long-term gains realized in the current year, before deduction of any capital losses carried over from prior years. Both variables have been used in previous studies.

Tax rates are computed using detailed Treasury income tax calculators modified for use with the years and data available in the panel. Actual last dollar tax rates are computed by adding an increment of \$1,000 (in \$1981) to income and computing the effective marginal rate over that range. This increment is used so as to smooth over discontinuities in certain tax provisions. The computation of instruments for these rates is discussed below.

The future tax rate is based on fully phased-in law known in the current year, evaluated at the average real income level. At several points in time during the analysis period, tax laws were passed that phased in tax increases or tax reductions over several years, or laws were passed changing tax rates starting at the beginning of the next calendar year. This gave tax savvy taxpayers the opportunity to arrange their affairs so as to minimize taxes over time. The most notable of these are ERTA, which phased in reductions in tax rates from 1981 to 1984, and TRA-86, for which the tax rate changes were not fully effective until 1988. The best known effects are from TRA-86 which produced the “Great Unlocking” of capital gains that occurred in 1986, as well as accelerations of deductions and the postponement of ordinary income.

Since actual tax rates are endogenous, we compute a number of instruments for these rates. The basic instruments compute tax rates using a predicted amount of capital gains from a regression of capital gains on age, marital status, and lagged values of income. The tax rate instrument is computed setting capital gains equal to zero and then computing the expected tax rate over the increment for predicted gains. Since taxpayers making charitable contributions have the option of contributing appreciated property rather than realizing capital gains, the value of charitable contributions is also set at the sample median percent of income. This approach produces tax rate instruments which are independent of the capital gains decisions of taxpayers, but reasonably related to the tax rates at which tax decisions are actually made.

In addition to tax rates, a number of other variables are considered. Income is defined as earned income and includes wages, self-employment income and pensions. Permanent income is

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1 Sensitivity analysis is conducted for alternative amounts.

defined as the mean real value over the sample period. Transitory income is defined as the difference between current year income and mean income. Age is that of the primary taxpayer and enters as a step function. We also use the current year marital status, a dummy variable for children, a dummy variable for loss carryovers, and dummy variables for business and rental losses in previous years.

Wealth is also considered, and is measured by allocating the aggregate amounts of wealth in the Federal Reserve Flow of Funds by the corresponding flows of capital income. The latter includes dividends, partnership, schedule C, rental and sole proprietorship income, and estate and trust income.

The sample mean amount of annual gains realized is \$202,917 in our sample of about 8,000 households, with 50 percent of the observations reporting capital gains. Mean earned income is \$177,999, reflecting the over-sampling of high-income returns in constructing the panel. The current capital gains tax rate mean is 19.5 percent, and the future rate mean is 21.2. Mean age is 57.

## 5. Empirical Results

We report the results of the basic model using generalized tobit in Table 2. The dependent variable is defined as the natural logarithm of net long term gains realized. The regressors include the future, current, and lagged tax rates, permanent and transitory labor income, wealth, dummy variables for prior year business and rental losses, a dummy variable for the dependents, marital status, age, and regional dummies.

Because the tax rate variables are potentially endogenous to realizations, they are instrumented with the future, current and lagged tax rates computed using predicted gains. We first estimate the criterion equation using Probit IV and report the results in column 1 of Table 2. This is followed by 2SLS estimates of the amount of gains realized, augmented with the inverse mill's ratio, following the Lee, Maddala, and Trost (1980) extension of Heckman (1979).

Realizations increase with wealth. They also increase with age and peak at about age 65. Married individuals and those with business and rental losses are more likely to realize gains.

Moving to the key variables of interest, the coefficient on the fully phased in law tax rate, i.e. the expected future rate, has a positive sign with an estimate of 0.038 and standard error of 0.01 in the Probit or criterion equation, and 0.041 ( $se=0.02$ ) in the level equation. It indicates that when future tax rates are high, taxpayers will accelerate their realizations into the current year. This effect is probably most important in 1986, but may also be present from the phase-in of the tax rate reductions in ERTA and in the tax rate increases in 1990 and 1993.

The coefficient on the current tax rate is negative, with an estimate of -0.038 ( $se=0.010$ ) in the criterion and -0.070 ( $se=0.021$ ) in the level equations. This highlights the dampening effect of taxes on realizations. The implied elasticity estimate is -1.9. This, of course, is a measure of the transitory effect of taxes. For the permanent effects, we combine the sum of the coefficients on the future, current, and lagged tax rates. The implied permanent elasticity coefficient is -0.72. Thus, as with most previous studies, transitory tax rate effects are found to be much larger than permanent tax rate effects. The permanent elasticity is in the range commonly estimated in time series studies. Both transitory and permanent elasticity estimates are smaller in absolute value than those reported in Auerbach and Siegel (2000), and also literally smaller than those in Burman and Randolph (1994).

A number of alternative specifications are considered to examine the robustness of these findings and the applicability across the population. Research by Auten and Joulfaian (2001) illustrates how capital gains decisions may be related to estate taxes and the life cycle, and how the incentives of younger taxpayers may differ for older taxpayers. To explore such differences, we divide the sample into three broad age groups: under age 60 (primarily working age taxpayers), age 60 to 74 (primarily early retirement), and age 75 and over (primarily later retirement). The results are shown in Table 3. For taxpayers under age 60, both the permanent and transitory tax rate effects are much larger than for the full sample. The results for taxpayers age 60 suggest much less sensitivity to capital gains tax rates as the implied elasticities are essentially zero. This may seem to be a puzzle because the lock-in effect of stepup in basis at death would imply a greater responsiveness for older taxpayers. However, older taxpayers may be realizing capital gains to finance consumption. This is also consistent with Auten and Joulfaian finding that capital gains taxes may be less important for wealthy taxpayers if they anticipate being

taxed at high rates under the estate tax. These results suggest that the taxpayers under age 60 are the most sensitive to capital gains tax rates, and are also suggestive of life cycle effects in realizations behavior.

When the sample is expanded to include taxpayers with \$200 or more average portfolio income, the results are almost unchanged from the base sample; the permanent elasticity is -0.73 and the transitory elasticity is -1.84. Since some of the youngest and oldest taxpayers with average portfolio income over \$400 may not have significant portfolios during part of the sample period, we examined an alternative criterion of having \$400 of portfolio income in the current year. Again, the results were little affected as the permanent elasticity was 0.75 and the transitory elasticity was -2.03.

Since most previous capital gains studies have included only the period prior to 1986, we estimated the basic model for a sample restricted to the period 1980 through 1985. This period includes the reduction in capital gains rates that resulted from the reduction of all income tax rates in the Economic Recovery Tax Act of 1981. For this period, the permanent tax rate elasticity was larger than in the full sample period (i.e., -1.32), but the transitory elasticity was smaller (-0.87).

## 6. Conclusions

This paper presents preliminary results of an examination of the determinants of capital gains realizations using a 17-year panel of income tax returns. It addresses the permanent and transitory effects of capital gains taxes. Both permanent and transitory tax rate elasticities are found to be significant, with the transitory tax rate effect much larger than the permanent effect. Both permanent and transitory tax rate effects are found to be larger and more statistically significant for taxpayers under age 60.

It is important to conclude by noting that these results are preliminary and reflect only a few possible plausible models and assumptions about the formation of expectations about “permanent” and “transitory” tax rate effects. We hope to be able to present tests of additional models in future research.

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**Table 1: Capital Gains Realizations and Tax Rates, 1980-1994**

|  | 1980    | 1981    | 1982    | 1983    | 1984      | 1985      | 1986      | 1987    | 1988    | 1989      | 1990      | 1991    | 1992    | 1993    | 1994    |
|--|---------|---------|---------|---------|-----------|-----------|-----------|---------|---------|-----------|-----------|---------|---------|---------|---------|
| Percent of taxpayers realizing gains           |         |         |         |         |           |           |           |         |         |           |           |         |         |         |         |
| Under\$50                                      | 14.4    | 15.7    | 15.8    | 17.9    | 20.6      | 21.0      | 27.2      | 23.8    | 19.3    | 21.8      | 19.5      | 19.9    | 25.4    | 28.1    | 27.7    |
| \$50-99  | 22.7    | 28.8    | 27.9    | 35.8    | 33.8      | 37.3      | 45.3      | 40.9    | 37.2    | 37.3      | 36.5      | 37.6    | 45.9    | 50.7    | 49.1    |
| \$100-199                                      | 31.8    | 31.6    | 38.1    | 46.0    | 46.9      | 58.4      | 57.9      | 54.0    | 46.7    | 49.0      | 49.4      | 48.3    | 62.2    | 60.3    | 57.4    |
| \$200-999                                      | 48.2    | 51.4    | 52.3    | 59.8    | 56.4      | 68.6      | 85.1      | 66.0    | 68.0    | 67.1      | 64.7      | 68.4    | 61.5    | 78.7    | 72.8    |
| \$1m&over                                      | 74.1    | 82.0    | 66.8    | 76.5    | 86.3      | 78.6      | 90.9      | 84.2    | 81.2    | 86.7      | 80.6      | 74.4    | 75.7    | 85.6    | 81.2    |
| Total  | 16.4    | 18.4    | 18.6    | 21.7    | 23.6      | 24.8      | 31.2      | 27.5    | 23.1    | 25.2      | 23.2      | 23.7    | 29.7    | 32.8    | 32.2    |
| Mean capital gains                             |         |         |         |         |           |           |           |         |         |           |           |         |         |         |         |
| Under\$50                                      | 1,080   | 871     | 765     | 874     | 1,087     | 1,205     | 2,051     | 1,069   | 904     | 1,267     | 1,301     | 652     | 786     | 906     | 990     |
| \$50-99  | 3,660   | 2,859   | 3,172   | 4,310   | 5,251     | 5,271     | 10,711    | 3,828   | 5,276   | 3,278     | 2,792     | 2,076   | 3,248   | 2,947   | 3,564   |
| \$100-199                                      | 9,982   | 10,432  | 9,492   | 11,651  | 17,958    | 22,693    | 30,476    | 11,065  | 13,533  | 11,847    | 16,065    | 10,540  | 11,521  | 17,758  | 9,722   |
| \$200-999                                      | 42,609  | 46,194  | 58,041  | 62,599  | 54,783    | 112,747   | 246,504   | 66,377  | 89,123  | 44,688    | 45,254    | 39,113  | 52,722  | 94,823  | 63,476  |
| \$1m&over                                      | 445,889 | 438,334 | 638,005 | 960,493 | 1,280,229 | 1,151,559 | 3,126,145 | 673,647 | 638,119 | 1,051,084 | 2,018,948 | 427,892 | 575,244 | 616,110 | 517,763 |
| Total  | 2,384   | 2,136   | 2,308   | 2,851   | 3,428     | 4,203     | 8,410     | 2,804   | 3,162   | 2,889     | 3,510     | 1,766   | 2,298   | 2,993   | 2,594   |
| Mean tax rate on capital gains                 |         |         |         |         |           |           |           |         |         |           |           |         |         |         |         |
| Under\$50                                      | 10.7    | 11.0    | 10.1    | 9.3     | 9.2       | 9.1       | 9.1       | 19.2    | 19.1    | 19.3      | 18.8      | 18.3    | 17.5    | 17.2    | 17.9    |
| \$50-99  | 16.2    | 16.7    | 15.3    | 14.8    | 14.4      | 14.1      | 14.4      | 25.8    | 27.2    | 26.9      | 26.5      | 25.2    | 25.3    | 25.8    | 25.6    |
| \$100-199                                      | 18.7    | 17.6    | 16.3    | 16.2    | 15.6      | 15.5      | 16.3      | 23.7    | 25.0    | 25.5      | 26.1      | 24.6    | 25.2    | 24.7    | 24.1    |
| \$200-999                                      | 22.5    | 18.5    | 17.0    | 18.1    | 17.9      | 16.6      | 17.9      | 23.3    | 24.2    | 25.2      | 20.8      | 22.9    | 21.4    | 23.4    | 22.5    |
| \$1m&over                                      | 21.5    | 18.2    | 17.1    | 19.1    | 17.7      | 16.7      | 18.7      | 18.8    | 21.3    | 22.4      | 19.2      | 18.4    | 18.4    | 23.5    | 20.8    |
| Total  | 11.8    | 12.1    | 11.1    | 10.4    | 10.2      | 10.1      | 10.1      | 20.3    | 20.4    | 20.6      | 20.1      | 19.5    | 18.9    | 18.7    | 19.2    |
| Mean expected future tax rate on capital gains |         |         |         |         |           |           |           |         |         |           |           |         |         |         |         |
| Under\$50                                      | 10.8    | 10.5    | 9.1     | 9.1     | 9.2       | 9.0       | 19.5      | 19.4    | 19.5    | 19.7      | 19.2      | 18.4    | 17.9    | 17.9    | 18.2    |
| \$50-99  | 16.3    | 15.8    | 13.9    | 14.3    | 14.5      | 14.0      | 28.2      | 27.4    | 27.8    | 27.8      | 26.5      | 26.6    | 26.8    | 27.4    | 26.4    |
| \$100-199                                      | 19.0    | 17.0    | 15.2    | 15.7    | 16.0      | 16.2      | 29.2      | 26.3    | 26.5    | 27.3      | 26.8      | 26.9    | 27.7    | 26.6    | 26.5    |
| \$200-999                                      | 23.0    | 17.7    | 17.9    | 19.0    | 17.8      | 17.3      | 28.6      | 24.2    | 25.2    | 26.7      | 22.3      | 26.4    | 24.8    | 26.9    | 25.2    |
| \$1m&over                                      | 23.2    | 16.6    | 18.5    | 19.9    | 17.9      | 17.1      | 26.6      | 19.1    | 22.2    | 24.2      | 21.6      | 20.9    | 23.7    | 25.9    | 22.7    |
| Total  | 11.9    | 11.5    | 10.1    | 10.1    | 10.2      | 10.0      | 21.1      | 20.7    | 20.9    | 21.1      | 20.4      | 19.8    | 19.5    | 19.6    | 19.7    |
| Mean tax rate on ordinary income               |         |         |         |         |           |           |           |         |         |           |           |         |         |         |         |
| Under\$50                                      | 26.9    | 27.6    | 25.4    | 23.4    | 22.9      | 22.9      | 22.6      | 20.5    | 19.7    | 20.0      | 19.6      | 19.0    | 18.2    | 17.8    | 18.6    |
| \$50-99  | 39.0    | 40.9    | 38.1    | 35.8    | 34.9      | 35.0      | 35.4      | 32.3    | 29.0    | 28.9      | 28.9      | 28.6    | 28.3    | 29.0    | 29.0    |
| \$100-199                                      | 45.6    | 47.5    | 42.3    | 39.6    | 39.1      | 39.9      | 40.4      | 35.2    | 29.8    | 29.7      | 29.8      | 31.1    | 31.1    | 34.5    | 34.1    |
| \$200-999                                      | 52.7    | 51.9    | 44.5    | 43.0    | 42.6      | 43.5      | 43.6      | 35.9    | 27.5    | 28.1      | 27.8      | 30.8    | 30.7    | 37.2    | 37.3    |
| \$1m&over                                      | 55.6    | 51.5    | 43.4    | 38.5    | 40.4      | 41.7      | 36.1      | 29.0    | 25.9    | 26.1      | 25.7      | 27.9    | 28.5    | 36.1    | 34.1    |
| Total  | 29.4    | 30.3    | 27.9    | 25.8    | 25.3      | 25.3      | 25.1      | 22.7    | 21.3    | 21.6      | 21.3      | 20.8    | 20.1    | 20.1    | 20.8    |

**Table 2: Results of Basic Model of Capital Gains Realizations**

|                                | Probit IV<br>(Criterion Equation) | 2SLS<br>(Level Equation) |
|--------------------------------|-----------------------------------|--------------------------|
| Variable                       | Coefficient<br>(s.e.)             | Coefficient<br>(s.e.)    |
| Expected Future Tax Rate       | 0.0377<br>(0.010)                 | 0.041<br>(0.020)         |
| Current Tax Rate               | -0.0382<br>(0.0100)               | -0.070<br>(0.021)        |
| Lagged Tax Rate                | 0.0059<br>(0.0027)                | -0.011<br>(0.007)        |
|                                |                                   |                          |
| <i>ln</i> Permanent Income     | 0.011<br>(0.003)                  | 0.203<br>(0.007)         |
| <i>ln</i> Transitory Income    | -0.036<br>(0.003)                 | -0.162<br>(0.007)        |
| <i>ln</i> Wealth               | 0.160<br>(0.002)                  | 0.965<br>(0.019)         |
| Loss Carryover Dummy           | -1.201<br>(0.098)                 | -2.584<br>(0.190)        |
| Lagged Business Losses Dummy   | 0.036<br>(0.001)                  | 0.169<br>(0.053)         |
| Lagged Rental Losses Dummy     | .010<br>(0.002)                   | 0.041<br>(0.003)         |
| Dependents Dummy Variable      | 0.010<br>(0.010)                  | -0.070<br>(0.026)        |
| Married                        | 0.141<br>(0.013)                  | 0.487<br>(0.037)         |
| 45<Age<54                      | 0.188<br>(0.013)                  | 0.738<br>(0.042)         |
| 55<Age<64                      | 0.286<br>(0.014)                  | 1.188<br>(0.050)         |
| 65<Age<74                      | 0.390<br>(0.016)                  | 1.649<br>(0.060)         |
| Age >75                        | 0.397<br>(0.020)                  | 1.817<br>(0.05)          |
| $\lambda$                      |                                   | 4.653                    |
| N total/non-zero               | 117,052                           | 58,709                   |
| Permanent Tax Rate Elasticity  |                                   | -0.72                    |
| Transitory Tax Rate Elasticity |                                   | -1.86                    |

Notes: Dependent variable is logarithm of net long-term capital gains. Coefficients for year and regional

dummy variables are not shown above.

**Table 3: Sensitivity Tests of Alternative Samples and Models**

| Equation                                    | Future Gains<br>Tax Rate | Current Gains<br>Tax Rate | Lagged Gains<br>Tax Rate | Permanent Tax<br>Rate Elasticity | Transitory Tax<br>Rate Elasticity |
|---|--------------------------|---------------------------|--------------------------|----------------------------------|-----------------------------------|
| Basic Equation                              |                          |                           |                          |                                  |                                   |
| Probit                                      | 0.0377<br>(0.010)        | -0.0382<br>(0.0100)       | 0.0059<br>(0.0027)       |                                  |                                   |
| Second Stage                                | 0.041<br>(0.020)         | -0.070<br>(0.021)         | -0.011<br>(0.007)        | -0.72                            | -1.86                             |
| Analysis by Age Class                       |                          |                           |                          |                                  |                                   |
| Age 21 – 59                                 |                          |                           |                          |                                  |                                   |
| Probit                                      | 0.0078<br>(0.0099)       | -0.0131<br>(0.0102)       | 0.0018<br>(0.0033)       |                                  |                                   |
| Second Stage                                | 0.057<br>(0.026)         | -0.114<br>(0.027)         | 0.027<br>(0.010)         | -1.65                            | -2.26                             |
| Age 60 and over                             |                          |                           |                          |                                  |                                   |
| Probit                                      | 0.1034<br>(0.0240)       | -0.0977<br>(0.0252)       | 0.0089<br>(0.0046)       |                                  |                                   |
| Second Stage                                | -0.049<br>(0.034)        | 0.055<br>(0.033)          | -0.006<br>(0.010)        | 0.16                             | -0.16                             |
| Expand sample to \$200+<br>portfolio income |                          |                           |                          |                                  |                                   |
| Probit                                      | 0.0385<br>(0.0092)       | -0.0385<br>(0.0010)       | 0.0055<br>(0.0026)       |                                  |                                   |
| Second Stage                                | 0.041<br>(0.020)         | -0.069<br>(0.020)         | -0.013<br>(0.007)        | -0.73                            | -1.84                             |
| Sample on \$400 current<br>portfolio income |                          |                           |                          |                                  |                                   |
| Probit                                      | 0.0424<br>(0.0097)       | -0.0430<br>(0.0101)       | 0.0056<br>(0.0027)       |                                  |                                   |
| Second Stage                                | 0.047<br>(0.021)         | -0.076<br>(0.021)         | -0.013<br>(0.007)        | -0.75                            | -2.03                             |
| Limit sample to 1980-1985                   |                          |                           |                          |                                  |                                   |
| Probit                                      | -0.0026<br>(0.0300)      | 0.0022<br>(0.0278)        | -0.0078<br>(0.0048)      |                                  |                                   |
| Second Stage                                | 0.095<br>(0.081)         | -0.055<br>(0.073)         | -0.116<br>(0.015)        | -1.32                            | -0.87                             |
| Gains Before Carryover                      |                          |                           |                          |                                  |                                   |
| Probit                                      | 0.0346<br>(0.0096)       | -0.0348<br>(0.0101)       | 0.0068<br>(0.0027)       |                                  |                                   |
| Second Stage                                | 0.033<br>(0.024)         | -0.064<br>(0.026)         | -0.014<br>(0.008)        | -0.82                            | -1.66                             |