INTERTEMPORAL STABILITY IN TOTAL INCOME AND OVERLAP IN ANNUAL SAMPLES OF TAX RETURNS

Allen L. Schirm and John L. Czajka, Mathematica Policy Research, Inc.
Allen L. Schirm, 600 Maryland Avenue, S.W., Suite 550, Washington, D.C. 20024-2512

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1. INTRODUCTION

Substantial overlap in the membership of repeated cross-sectional samples, such as the Current Population Survey, is desirable because it improves the precision of estimates of change between periods. The annual Statistics of Income (SOI) sample of individual tax returns, a prime resource for income and tax statistics, incorporates a selection mechanism that yields considerable overlap between consecutive years and even across several years. The overlap is not controlled, however, and is affected by demographic events, filing behavior, and economic characteristics. If not for changes in taxpayer characteristics and behavior, the year-to-year overlap would be 100%, given fixed stratum boundaries and sampling rates and unchanging tax law. For returns present in the population in consecutive years, departures from complete overlap are caused entirely by movement among sampling strata.

Research is underway to explain the sources of intertemporal instability in total income and, therefore, stratum membership and to consider methods for enhancing stability, including differential weighting of more versus less stable income sources and adjustment of sampling rates and strata boundaries. The research will also explore the effects of such measures on the precision of aggregate estimates of income and tax components and on factors influencing the sample's value in informing policy.

This paper reports preliminary empirical findings concerning overlap under the new sample design. Two questions have received the greatest attention to date. First, how does the placement of stratum boundaries affect overlap? Second, how does the specification of sampling rates affect overlap? The potential contributions of various income components to instability in total income are also assessed.

2. THE NEW SAMPLE DESIGN

The Statistics of Income Division of the Internal Revenue Service (IRS) has undertaken a major redesign of its annual sample of individual tax returns. The principal objective is to enhance the sample's usefulness for tax policy modeling.

The new sample design assigns returns to strata primarily according to either total gross positive income or total gross negative income depending on whether total net income is nonnegative or negative, respectively. Total net income is the sum of total gross positive income and total gross negative income, both of which are obtained by summing various individual income components.

The components of gross positive income are: salary and wages; total interest income; dividends; alimony received; capital gains distributions reported on Form 1040; total pension and annuity income; taxable IRA distributions; unemployment compensation; total social security income; short-term capital gains; long-term capital gains less gain from sale of home; gross rent/royalty income; gross partnership/S-corporation income; gross trust/estate income; net other income (if positive); net Form 4797 income (if positive); net farm rental income (if positive); gross farm income (if positive); and gross business profits (if positive).

The components of gross negative income are: alimony paid; moving expenses; short-term capital losses; long-term capital losses; gross allowable rent/royalty losses; gross allowable partnership/S-corporation losses; gross allowable trust/estate losses; total farm expenses; total business deductions; net other income (if negative); net Form 4797 income (if negative); net farm rental income (if negative); gross farm income (if negative); and gross business profits (if negative).

Returns with negative total net income are assigned to 1 of 9 strata on the basis of total gross negative income. Returns with positive or zero total net income are assigned to 1 of 15 strata on the basis of total gross positive income. At the lower levels of total gross positive income, returns are distinguished as more or less useful for policy modeling and placed in different strata depending on the presence of certain filing characteristics, the composition of total gross positive income, and the level of total gross negative income relative to total gross positive income. This aspect of the new sample design is discussed at length in Hostetter et al. (1990).

It should be noted that not all returns are stratified as just described. Before a return is assigned to 1 of the 24 strata based on total gross positive or negative income, it may be assigned to 1 of 2 special strata. The first consists of high-income nontaxables (HINTs), which are defined by statute. In 1984 and 1985, such returns had adjusted gross income equal to or greater than $200,000, no income tax after credits, and no additional tax for tax preferences. The other special stratum consists of returns with high combined business and farm total receipts. A threshold on the order of $50,000,000 is currently envisioned. Returns that do not satisfy the criteria of these 2 special strata fall into 1 of the 24 strata defined above. Hostetter et al. (1990) describe the new sample design in greater detail.

3. DATA

The data analyzed in this paper were obtained by matching 1984 and 1985 individual tax returns contained in SOI samples. A 1984-5 linked file was created by matching records from the 1985 full sample to the 1984 level one sample. The matching was based on primary and secondary social security number (SSN) and on filing year. Records from the two files were linked if they had consecutive filing years and if at least one of the 1984 SSNs appeared on the 1985 record, regardless of position. When multiple matches were possible, they were resolved in favor of agreement on two SSNs rather than one and on the position of the SSN (both criteria were often necessary for matches involving married persons filing separately). Additional information was utilized to resolve such matches when no secondary SSNs were present. The 1984 level one sample contained 94,385 records; all but 8,500 were matched to records from the 1985 full sample. For simplicity, we will assume that the 85,885 matched returns are representative of the 1984 filing population. Additional details can be found in a companion piece (Czajka and Schirm, 1990).

4. CONCEPTS OF OVERLAP

The usual definition of overlap concerns samples and questions of the following sort. What proportion of returns in

the 1984 sample is in the 1985 sample? If the answer is 80%, we will say that there is 80% "sample overlap."

An alternative definition of overlap pertains to the entire 1984 population of returns. It is motivated by the desire to identify returns at risk of sample nonoverlap and by a particular characteristic of the sample design.

A feature of the current SOI sample design that will be maintained in the new design is within-stratum selection on the basis of a transformation of a return's primary SSN. This feature ensures that a return with a given primary SSN that is selected in a stratum with a particular sampling rate will also be selected the following year in any stratum with an equal or higher sampling rate. The problem of nonoverlap is, therefore, asymmetric. The returns that are present in one year and lost in the next are those that "fall," that move "downward" to strata with lower sampling rates. These "fallers" are at risk of sample nonoverlap. Later, we will contrast the characteristics of fallers and nonfallers to identify, for example, income components that may be contributing substantially to nonoverlap.

What proportion of the 1984 filing population moves to strata with lower sampling rates between 1984 and 1985? Alternatively, what proportion remains in or moves to strata with equal or higher rates between 1984 and 1985? If the answer to this latter question is 80%, we will say that there is 80% "population overlap." Although this concept of overlap is used mainly for distinguishing fallers from nonfallers, it is useful for evaluating the effects of changes in sampling rates, for example. We note that population overlap can be higher or lower than sample overlap.

5. OVERLAP UNDER THE NEW DESIGN: EMPIRICAL RESULTS

As noted before, the objective of this paper is to explain the sources of intertemporal instability in total income, defined as either total gross positive or total gross negative income, depending on the sign of total net income. The focus is on the level and the composition of income and changes in the values of the components of income. Other sources of nonoverlap, such as changes in filing status, are explored in Czajka and Schirm (1990).

5.1 Overlap and Stratum Boundaries

The placement of stratum boundaries may influence both sample and population overlap. In this section we explore three methods for setting 1985 stratum boundaries. We assume in each case that 1984 stratum boundaries and, except where noted, 1984 and 1985 sampling rates are fixed at the values displayed in Table 1. The implied total sample size for 1984 is 79,448 returns.

Returns in strata 1 through 9 have total gross negative income exceeding total gross positive income in absolute value and are classified using the former gross income amount. Returns in strata 10 through 24 have positive or zero total net income and are classified primarily on the basis of total gross positive income. All returns in strata 13 and 14 in 1984, for example, have total gross positive income greater than $28,100 and less than or equal to $52,900. As described in Hostetter et al. (1990), however, returns in stratum 13 have been judged relatively less interesting for purposes of policy modeling than returns in stratum 14.

Overlap with Fixed Stratum Boundaries. The simplest procedure for setting 1985 stratum boundaries is to use the same boundaries as for 1984. When boundaries are fixed, 63,755 (80.2%) of the 79,448 returns in the 1984 sample appear in the 1985 sample. The rate of population overlap is 89.7%.[1] This high value is not surprising because nearly three-quarters of the population falls into the strata with the three lowest sampling rates in 1984.

Although sample overlap under fixed stratum boundaries would seem to be impressively high, we would argue that the 80.2% figure is misleading because the total sample size has risen between 1984 and 1985 from 79,448 to 86,798. A more accurate picture is obtained by adjusting sampling rates so that the 1985 total sample size is reduced to the 1984 level. The difficulty is that there are infinitely many ways to adjust 1985 sampling rates. Each would imply a different rate of sample overlap.

A lower bound on sample overlap is obtained by assuming that all of the 7,350 extra returns in 1985 appeared in the 1984 sample. If all of the 7,350 returns eliminated from the 1985 sample to reach the target of 79,448 came from the 63,755 returns that were also in the 1984 sample, overlap would fall to 71.0%.[2]

The problem with the adjustment just described is that it would not preserve the basic structure of the design, which as explained in Hostetter et al. (1990), was developed to satisfy certain requirements. An adjustment that would surely do less harm is a "scalar adjustment." A scalar adjustment lowers (or raises) all sampling rates by a scalar multiple. Such an adjustment maintains proportionate relationships among rates. If the stratum 12 rate is four times the stratum 10 rate before adjustment, the former will remain four times the latter after adjustment. Multiplying all sampling rates by 0.9153 for 1985 reduces the 1985 total sample size to the 1984 level and the rate of sample overlap to 74.6%.

Overlap with Inflation-Adjusted Stratum Boundaries. Adjusting stratum boundaries is a simple alternative to adjusting sampling rates. And, relatively small boundary adjustments may reduce the total sample size to the desired level while better maintaining the ability to satisfy design objectives.

A plausible explanation for at least part of the previously observed growth in the total sample size is inflation. Even with constant real incomes, nominal growth would push returns to strata with higher sampling rates over time. Multiplying all 1984 boundaries by a constant factor, the 1985 inflation rate, to obtain 1985 "inflation-adjusted" boundaries may partly offset this tendency.

The average annual inflation rate in the Consumer Price Index (CPI) during 1985 was 3.6%. The sample overlap rate when boundaries are adjusted accordingly is 79.2%. The population overlap rate is 89.0%.

As in the fixed boundaries case, the sample overlap figure is misleading. Although inflation adjustment reduces the number of returns, from 7,350 to 4,343, by which the total sample size for 1985 exceeds the target based on 1984, the rate of sample overlap may be as low as 73.7% if all of the extra returns appeared in the 1984 sample. When a scalar adjustment to sampling rates using an adjustment factor of 0.9482 follows the inflation adjustment to stratum boundaries, 1984-5 sample overlap is 75.7%.

Overlap with Distribution-Adjusted Stratum Boundaries. Imposing either fixed or inflation-adjusted boundaries showed that sample overlap can be enhanced substantially by allowing the total sample size to rise over time. Such policies, however, have potentially large costs.

On the opposite extreme, real or nominal movements in income could drop all taxpayers to strata with much lower

sampling rates. The total sample size could plummet and there could be minimal overlap. This case, like the case in which overlap is very high because of significant growth in incomes and in the total sample size, is not very interesting in an assessment of overlap, though total sample size growth is an interesting practical problem more generally. We would like to abstract from mass movements where the vast majority of incomes, say, grow and many filers move to strata with higher sampling rates without changes in relative position.

Inflation adjustment was an attempt to compensate for mass movements. Although it reduced total sample size growth, it was only partly successful. One reason for limited success is real income growth. Another is differential nominal growth.[3] Inflation may have different effects at different income levels. If so, a simple inflation adjustment is inadequate even in the absence of real growth.

As noted before we are especially interested in fallers, persons or couples who fall to a stratum with a lower sampling rate from one year to the next. The downward movements of greatest interest are those involving changes in relative position, for example, falling from the 80th income percentile to the 70th. Our task, therefore, is to specify stratum boundaries in such a way that a filer whose rank does not change between years will be assigned to the same stratum. Table 1 displays "distribution-adjusted" boundaries for 1985.

The stratum boundaries in Table 1 have been specified so that strata 10, 11, and 12 capture the same proportion--just over 0.64--in 1984 and 1985 of the total respective filing populations with nonnegative total net incomes. Similarly, the proportion of all returns with nonnegative total net incomes that land in strata 13 and 14 in 1985 is equal to the 1984 proportion. Thus, each year, the boundaries for a particular stratum are set at the same quantiles of the income distribution. A desirable property of distribution-adjusted stratum boundaries is that they produce an approximately constant total sample size under fixed sampling rates.[4] It is not necessary, as with fixed or inflation-adjusted boundaries, to distort the basic rate structure to hit a target sample size.

With distribution-adjusted boundaries, 1984-5 population overlap is 87.6%. Thus, fallers are about 12.4% of the population. This figure is nearly 1.5 percentage points higher than when stratum boundaries are fixed or inflation-adjusted.

Sample overlap with distribution-adjusted boundaries is 76.8%. Despite boundary adjustments, the 1985 total sample size is 79,729, which exceeds the target, though by only 281 returns.[5] Even if all 281 extra returns appeared in the 1984 sample, overlap would be no less than 76.4% with a 1985 total sample size equal to 79,448. Scalar adjustment of sampling rates would imply a 76.5% overlap rate.

When scalar sampling rate adjustments are used to achieve a target total sample size for 1985, sample overlap is about 2 percentage points higher with distribution-adjusted rather than fixed stratum boundaries. Sample overlap is less than 1 percentage point higher with distribution-adjusted rather than inflation-adjusted stratum boundaries. Differences among lower bounds on sample overlap rates are much greater.

5.2 Overlap and Sampling Rates

Differences in sampling rates among strata directly influence overlap. Eliminating or reducing certain differences may significantly enhance overlap. To explore the effects of sampling rates on overlap, we will assume, unless otherwise noted, that 1984 and 1985 stratum boundaries are as specified in Table 1. In other words, 1985 boundaries are distribution-adjusted.

A central feature of the new sample design is the specification of two or even three strata within a given income range. This allows relatively higher sampling rates for returns regarded as more useful for policy modeling.[6] It is plausible, however, that distinguishing returns of roughly equal total income in this manner lessens overlap. Nearly one-quarter of returns in stratum 12 in 1984, for example, fall to stratum 11 in 1985.[7]

As it turns out, unequal sampling rates between strata with the same boundaries do contribute to nonoverlap. Population overlap rises by over 5 percentage points to 92.7% while sample overlap increases by over 2 percentage points to 78.9% when we equalize rates among strata 10, 11, and 12, between 13 and 14, between 15 and 16, and between 17 and 18.[8] Similar results are obtained when stratum boundaries are fixed or inflation-adjusted. With fixed and inflation-adjusted boundaries, population overlap rates are 95.2 and 94.4%, respectively. Sample overlap rates are 76.9 and 78.3% after scalar adjustments. So, distinguishing returns of roughly equal income according to their usefulness for policy modeling costs from just over 2 to just over 2.5 percentage points in the sample overlap rate.

Although maintaining such distinctions has a cost in terms of sample overlap, eliminating those distinctions has an obvious cost in terms of sample coverage for policy modeling. For example, equalizing sampling rates as described would reduce the number of sampled returns with social security income by over 13%, running counter to a principal objective of the redesign.

A steep sampling rate gradient may be another source of sample nonoverlap. Relatively large proportionate jumps in sampling rates occur between strata 19 and 20 and between strata 20 and 21. Lowering these jumps may enhance overlap.

If the sampling rates for strata 19 and 20 are raised to 1.1 and 4.25%, respectively, the sampling rate for stratum 21 must be lowered to just over 14% to maintain the same overall implicit sampling rate across the three strata. If the sampling rate for stratum 19 is increased further to 1.2%, the sampling rate for stratum 21 must be lowered even more to slightly under 13%. Although these changes flatten the sampling rate gradient, they produce no gain or even a slight decrease in sample overlap, regardless of how boundaries are adjusted.

Equalizing the sampling rates in strata 22 and 23 at roughly 58% does not affect overlap either. This is true despite the preponderance of fallers in stratum 23.

5.3 Overlap and Income Components

Over 28% of returns move from one stratum in 1984 to a different stratum in 1985.[9] Over 12% of returns move to a stratum with a lower sampling rate. What explains these movements, especially those entailing reductions in sampling rates? More specifically, which income components are most responsible? We ask this latter question because the movements of interest are attributable mainly to changes in the amount of total income or its composition.

As a first step, we have displayed in Table 2 results concerning volatility in the presence of selected income components. Is a nonzero amount for a particular item reported in one year but not in the other? According to Table 2, interest income and net other income tend to come and go relatively more often than other components. Nearly 13% of returns report interest income in either 1984 or 1985 but not in both years. About 9% of returns have nonzero net other income in exactly one of the two years. The next most volatile items are dividend income and long-term capital gains. Between

6 and 7% of returns reporting dividend income in either 1984 or 1985 do not report it in the other year--likewise for long-term capital gains. 6% of returns report income from a pension, annuity, or IRA in just one of the two years. Not surprisingly, positive or negative income from partnerships and Subchapter S corporations is generally reported in both years or in neither year. It should be noted that, except for salary and wage income, interest income, and dividend income, the items listed in Table 2 are reported relatively rarely, on as few as 4% of all returns. About one-quarter of all returns report dividend income in at least one year.

Table 3 contrasts patterns for fallers and nonfallers. Two results are most prominent. First, fallers are more likely--often much more likely--to report rarely-reported items. Although less than 10% of nonfallers report long-term capital gains, over 20% of fallers have income from this source in at least one year. Second, fallers are more likely--often much more likely--to report income from a given source irregularly, that is, in just one of the two years. This is true for every income component listed in Table 3, except interest income. Between 12 and 13% of fallers have income from long-term capital gains in either 1984 or 1985 but not in both years whereas the figure is under 6% for nonfallers.

Sharp differences between fallers and nonfallers can also be found in Table 4. Defining total income as total gross negative income if total net income is negative and as total gross positive income otherwise, we have calculated, for many income components, the ratio of the 1984-5 change in a component to the 1984-5 change in total income. We know from Table 3 that the ratio will be 0 in most cases for the rarely-reported items. It is possible, nevertheless, that when changes do occur they account for much of the change in total income.

According to Table 4 changes in total income can typically be attributed to changes in income from salary and wages. Contributions of this component are large for nonfallers much more often than for fallers, however. Other income sources contribute substantially to changes in total income much less often, although the figures for some items are probably relatively high when incidence of reporting is taken into account. Consistent with our earlier result on the frequency of reporting, rare components account for much of the change in total income more often for fallers than nonfallers. An interesting finding is that when total income declines interest income often rises and vice versa. The frequency is over 28% for nonfallers and nearly 36% for fallers. Salary and wage income and dividend income move in opposite directions to total income for about 17% of fallers but only about 9% of nonfallers.

In addition to calculating the frequencies with which nonzero values are reported for certain income components, we have compared the dollar amounts for 1984 and 1985. Table 5 displays, for fallers and nonfallers separately, interyear correlations. The correlations are calculated, in each case, from returns reporting a nonzero value for the item in at least one year.

Although there are several large differences between interyear correlations of fallers and nonfallers, no consistent pattern emerges. The interyear correlation for gross rent and royalty losses is stronger for fallers while the correlation for gross partnership and Subchapter S corporation losses is weaker for fallers. 1984 and 1985 incomes from pensions, annuities, and IRAs are less highly correlated for fallers, but 1984 and 1985 incomes from social security are more highly correlated for fallers. Interyear correlations for fallers and nonfallers differ by little for several components. Thus, it is not surprising that the correlations for total incomes are nearly equal. It is interesting that the correlation for fallers is slightly higher.

6. CONCLUSIONS AND FURTHER ANALYSES

Several preliminary conclusions emerge from the research completed to date.

- Overlap is 1 to 2 percentage points higher when stratum boundaries are inflation- or distribution-adjusted instead of fixed.
- With adjusted boundaries, sample overlap under the new design is about 76%.
- Distinguishing returns of roughly equal total incomes according to their usefulness for policy modeling costs about 2 percentage points in the sample overlap rate.
- Reducing the largest proportionate jumps in sampling rates between strata does not enhance overlap.
- Fallers, persons and couples subject to lower sampling rates in 1985 than in 1984, are different from nonfallers with respect to the composition of total income. Fallers are more likely to report income from a given source irregularly, that is, in one year but not the other. Also, changes in income from rarely-reported sources more often contribute substantially to changes in total income for fallers.

The remainder of this investigation will seek to explore in greater detail the sources of intertemporal income instability and the relative merits of alternative measures for reducing such instability. The questions that will be addressed include:

- Do any income components tend to move together, rising and falling in combination? Or, do they move in opposite directions? How are movements related to changes in total income? Why do fallers fall?
- Would differential weighting of income components in calculating total gross positive and negative amounts enhance income stability and increase overlap?

Early research on this last question has yielded promising results. In our 1984-5 matched data file, we separated returns with positive total net income in 1984 when all income components have unitary weights from returns with negative total net income in 1984. Then, using canonical analysis, we estimated weights for components of total gross positive income and for components of total gross negative income, selecting in both cases the pair of canonical variates with the fewest implausible signs from among the several highly correlated pairs obtained. For income components whose weights had implausible signs in the selected pairs of canonical variates, we set the weights to zero and reestimated weights for the other components. Next, we transformed the gross income totals calculated using differential component weights to have the same variances as the gross income totals calculated using unitary weights. Finally, we stratified returns, differentially weighting income components and imposing distribution-adjusted stratum boundaries. The correlation between 1984 and

1985 total incomes increases from 0.50 to 0.73 when differential weights replace unitary weights. Although population overlap remains between 87 and 88%, sample overlap rises by 4 to 5 percentage points to over 81%. This suggests that differential weighting does not reduce the proportion of fallers in the population but does reduce the "distance" by which they fall.

NOTES

[1]Just 9,367,363 of 91,115,749 returns fall to strata with lower sampling rates between 1984 and 1985.

[2]The most obvious way to eliminate returns is to lower sampling rates. It may not be possible, however, to exclude only overlapping returns by this method.

[3]Real growth is surely differential, too.

[4]The total sample size will vary from one year to the next for two reasons: movements between strata with the same boundaries and movements from positive net income strata to negative net income strata and vice versa. We are not suggesting that distribution-adjusted boundaries are necessarily well-suited to practical application. However, they are useful for abstracting from certain complicating factors in studying overlap.

[5]Net movements from negative net income strata in 1984 to positive net income strata in 1985 tend to reduce the 1985 total sample size. However, net movements between strata with the same boundaries, from stratum 10 to stratum 11 for example, more than compensate.

[6]The heterogeneity of these returns also makes it desirable to sample them at higher rates.

[7]The 1,861,748 returns falling from stratum 12 to stratum 11 is less than the 2,003,826 returns rising from stratum 11 to stratum 12. As noted before, however, the problem of nonoverlap is asymmetric. Returns moving to strata with lower sampling rates reduce overlap. Returns moving to strata with higher sampling rates do not increase overlap.

[8]We equalized sampling rates in a neutral way so that, for example, the number of returns sampled in strata 13 and 14 combined did not change from when there were unequal rates.

[9]Just over 14% of returns move to a stratum representing a different level of total income.

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Table 1. 1984 and 1985 Stratum Boundaries for the New Sample Design

Stratum	1984 Inclusive Upper Bound	1985 Inclusive Upper Bound	Illustrative Sampling Rates
1	(8,160,000)	(8,790,000)	100.000%
2	(3,980,000)	(4,250,000)	100.000%
3	(1,590,000)	(1,790,000)	50.000%
4	(803,000)	(869,000)	16.000%
5	(447,000)	(498,000)	4.000%
6	(223,000)	(243,000)	1.000%
7	(103,000)	(112,000)	0.400%
8	(63,100)	(61,300)	0.250%
9	0	0	0.100%
10	28,100	30,700	0.020%
11	28,100	30,700	0.030%
12	28,100	30,700	0.080%
13	52,900	57,200	0.035%
14	52,900	57,200	0.100%
15	100,000	109,000	0.080%
16	100,000	109,000	0.150%
17	199,000	216,000	0.250%
18	199,000	216,000	0.400%
19	386,000	419,000	1.000%
20	779,000	831,000	4.000%
21	2,020,000	1,880,000	16.000%
22	4,080,000	6,250,000	50.000%
23	8,620,000	12,400,000	100.000%
24	infinity	infinity	100.000%
25			100.000%
26			100.000%

Note: The upper bound for stratum 9 is not inclusive. A return falls in stratum 9 only if total net income is strictly negative. Stratum 25 consists of high-income nontaxables. Stratum 26 consists of returns with high combined business and farm total receipts. The lower bound for this stratum is 35,000,000 in 1984 and 28,000,000 in 1985. Negative amounts appear in parentheses. All amounts are in dollars. The 1984 stratum boundaries are used for all analyses. The set of 1985 boundaries shown is only one alternative considered. Those boundaries are called "distribution-adjusted" in the text.

Table 2. Joint Presence of Income Components on 1984 and 1985 Tax Returns

Income Component	Percentage of Filers with Item Nonzero (i.e., Present): Both Years	One Year	Neither Year
INCOME	99.96	0.04	0.00
Salary & Wage Income	84.45	3.56	11.99
Interest Income	59.39	12.79	27.82
Dividend Income	16.69	6.80	76.51
Short-term Capital Gains	0.80	2.61	96.58
Long-term Capital Gains	4.04	6.68	89.29
Short-term Capital Losses	0.81	2.94	96.26
Long-term Capital Losses	1.21	4.10	94.69
Gross Rent/Royalty Income	7.92	2.85	89.23
Gross Rent/Royalty Losses	7.78	2.65	89.58
Gross Partnership/S-Corp Income	2.40	1.82	95.77
Gross Partnership/S-Corp Losses	2.77	2.03	95.20
Business Gross Income	8.77	4.92	86.31
Business Deductions	8.97	4.56	86.47
Total Pension/Annuity/IRA Income	10.60	6.00	83.40
Total Social Security Income	5.97	4.27	89.76
Net Other Income	2.30	9.01	88.69

Note: INCOME equals total gross positive income if total net income is nonnegative and equals total gross negative income otherwise.

Table 3. Joint Presence of Income Components on 1984 and 1985 Tax Returns: Fallers Versus Nonfallers

Income Component	Percentage of Fallers with Item Nonzero (i.e., Present): Both Years	One Year	Neither Year
INCOME	99.80	0.20	0.00
Salary & Wage Income	75.80	8.73	15.47
Interest Income	69.58	12.10	18.32
Dividend Income	24.96	8.73	66.31
Short-term Capital Gains	1.53	4.17	94.30
Long-term Capital Gains	7.63	12.64	79.74
Short-term Capital Losses	1.47	5.27	93.26
Long-term Capital Losses	2.06	7.47	90.47
Gross Rent/Royalty Income	11.42	5.61	82.98
Gross Rent/Royalty Losses	11.28	5.16	83.56
Gross Partnership/S-Corp Income	3.83	3.26	92.91
Gross Partnership/S-Corp Losses	5.07	3.44	91.49
Business Gross Income	13.04	9.90	77.06
Business Deductions	13.49	8.79	77.72
Total Pension/Annuity/IRA Income	16.08	9.73	74.19
Total Social Security Income	10.36	7.94	81.70
Net Other Income	3.52	14.18	82.29
Income Component	**Percentage of Nonfallers with Item Nonzero (i.e., Present): Both Years**	**One Year**	**Neither Year**
INCOME	99.98	0.02	0.00
Salary & Wage Income	85.68	2.83	11.50
Interest Income	57.95	12.89	29.17
Dividend Income	15.52	6.53	77.95
Short-term Capital Gains	0.70	2.39	96.91
Long-term Capital Gains	3.53	5.83	90.64
Short-term Capital Losses	0.71	2.60	96.68
Long-term Capital Losses	1.09	3.63	95.28
Gross Rent/Royalty Income	7.43	2.45	90.12
Gross Rent/Royalty Losses	7.28	2.29	90.43
Gross Partnership/S-Corp Income	2.20	1.62	96.18
Gross Partnership/S-Corp Losses	2.44	1.84	95.73
Business Gross Income	8.16	4.22	87.62
Business Deductions	8.32	3.96	87.72
Total Pension/Annuity/IRA Income	9.82	5.47	84.71
Total Social Security Income	5.35	3.75	90.90
Net Other Income	2.13	8.27	89.60

Note: INCOME is defined in the note to Table 2.

Table 4. Contributions to 1984-1985 Change in Total Income for Selected Income Components: Fallers Versus Nonfallers

Income Component	Contribution (%): Fallers <0	0	(0,50)	>50
Salary & Wage Income	17.76	16.06	11.34	54.78
Interest Income	35.75	18.76	38.91	6.52
Dividend Income	16.24	67.24	14.77	1.70
Short-term Capital Gains	2.70	94.25	2.43	0.56
Long-term Capital Gains	6.26	79.85	5.82	8.01
Short-term Capital Losses	2.89	93.22	3.06	0.77
Long-term Capital Losses	4.77	90.42	3.88	0.88
Gross Rent/Royalty Income	6.83	84.30	5.88	2.93
Gross Rent/Royalty Losses	6.83	83.77	6.73	2.62
Gross Partnership/S-Corp Income	2.71	92.88	2.87	1.48
Gross Partnership/S-Corp Losses	4.54	91.45	3.02	0.92
Business Gross Income	9.31	77.10	4.41	9.12
Business Deductions	10.53	77.70	6.47	5.25
Total Pension/Annuity/IRA Inc	11.43	77.16	5.54	5.80
Total Social Security Income	8.86	81.75	3.83	5.50
Net Other Income	9.70	82.52	5.55	2.18
Income Component	**Contribution (%): Nonfallers <0**	**0**	**(0,50)**	**>50**
Salary & Wage Income	8.26	11.94	7.79	71.91
Interest Income	28.31	29.60	34.82	7.17
Dividend Income	9.10	78.51	10.99	1.29
Short-term Capital Gains	1.30	96.82	1.46	0.32
Long-term Capital Gains	2.90	90.64	3.59	2.77
Short-term Capital Losses	1.79	96.59	1.19	0.33
Long-term Capital Losses	2.13	95.20	1.94	0.63
Gross Rent/Royalty Income	3.15	90.83	3.89	2.03
Gross Rent/Royalty Losses	3.85	90.44	3.57	2.04
Gross Partnership/S-Corp Income	1.44	96.10	1.38	0.99
Gross Partnership/S-Corp Losses	1.97	95.65	1.67	0.60
Business Gross Income	3.88	87.59	3.16	5.28
Business Deductions	4.60	87.64	4.40	3.27
Total Pension/Annuity/IRA Inc	4.38	86.93	5.10	3.49
Total Social Security Income	2.32	90.84	3.02	3.72
Net Other Income	3.92	89.67	4.73	1.59

Note: "Contribution (%)" equals the 1984-1985 change in the income component divided by the 1984-1985 change in INCOME, expressed in percentage terms. INCOME is defined in the note to Table 2. Percentages do not sum to 100 because of a very small number of cases in which the change in INCOME is zero.

Table 5. Interyear Correlations for Selected Income Components: Fallers Versus Nonfallers

Income Component	Interyear Correlations: Fallers	Nonfallers
INCOME	0.56	0.52
Salary & Wage Income	0.76	0.79
Interest Income	0.72	0.82
Dividend Income	0.86	0.82
Short-term Capital Gains	0.48	0.64
Long-term Capital Gains	0.35	0.20
Short-term Capital Losses	0.22	0.19
Long-term Capital Losses	0.15	0.14
Gross Rent/Royalty Income	0.55	0.30
Gross Rent/Royalty Losses	0.49	0.29
Gross Partnership/S-Corp Income	0.62	0.78
Gross Partnership/S-Corp Losses	0.63	0.80
Business Gross Income	0.79	0.88
Business Deductions	0.79	0.91
Total Pension/Annuity/IRA Income	0.07	0.38
Total Social Security Income	0.36	0.04
Net Other Income	0.44	0.56

Note: INCOME is defined in the note to Table 2. For each income component, the interyear (1984-1985) correlation is a product moment correlation calculated from observations with at least one year's value different from zero.