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TAX FOUNDATION BACKGROUND PAPER #2

A Critical Analysis of Tax Distribution Studies Conducted by the Congressional Budget Office

By:

Patrick J. Wilkie, Ph.D.
Assistant Professor of Accounting
George Mason University
Ernst & Young Visiting Professor
Tax Foundation

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A CRITICAL ANALYSIS OF TAX DISTRIBUTION STUDIES CONDUCTED BY THE CONGRESSIONAL BUDGET OFFICE

ABSTRACT

The Congressional Budget Office (CBO) conducts tax distribution studies that produce estimates of income inequality and tax progressivity. These results indicate that income inequality increased and tax progressivity decreased during the 1980s. However, an analysis of the empirical procedures employed by the CBO strongly suggests that its results are not unbiased estimates of the actual distribution of income and taxes. Further, the analysis reveals that the experimental design employed by the CBO does enable users to identify the factors that cause income inequality and tax progressivity to change over time.

The validity of the results obtained by the CBO are threatened by a number of factors. Specifically, the CBO overestimates the extent of, and change in, income inequality because it inadequately controls for: (1) changes in income mix, (2) inflation, (3) implicit taxes, and (4) regional cost of living differences. Similarly, the CBO understates the extent of tax progressivity because it improperly measures social security taxes and implicit taxes. Further, because the CBO does not control for demographic changes, it is not possible to determine whether changes in income inequality and tax progressivity occurred because of changes in household incomes and taxes, or changes in the nature of the households included in the sample.

A CRITICAL ANALYSIS OF TAX DISTRIBUTION STUDIES CONDUCTED BY THE CONGRESSIONAL BUDGET OFFICE

INTRODUCTION

Surging federal government budget deficits have forced policy makers to re-evaluate the level and distribution of spending and taxes. With respect to taxes, the prospect of increased tax burdens has focused attention on the fairness of the tax system, which is often assessed through tax distribution studies. These studies describe both the distribution of income and the relation between taxes and income, and show that income inequality increased and tax progressivity decreased during the 1980s. Thus, on the basis of these results, some policy makers, including President-elect Bill Clinton, have called for an increase in tax progressivity to raise additional tax revenue.

This paper reviews the empirical procedures used by the Congressional Budget Office (CBO) to conduct tax distribution studies and identifies the procedures that cause the CBO to systematically misstate the extent of income inequality and tax progressivity. In addition, it examines the experimental design employed by the CBO and discusses various threats that confound the analysis of through-time changes in the distributions of income and taxes. Finally, this paper suggests alternative empirical procedures and experimental designs that produce less biased and more meaningful results.

This paper has the following form. In the next section, the empirical procedures employed by the CBO to conduct tax distribution studies are reviewed. In section three, factors affecting the reliability of the estimates of income inequality are discussed, while section four critiques the procedures employed by the CBO to compute the relation between taxes and income. A summary of the evidence, a set of policy recommendations, and a conclusion are included in the final section.

REVIEW OF CBO EMPIRICAL PROCEDURES

The CBO measures household income on a modified cash-receipts basis that is somewhat more comprehensive than the method employed for federal income tax purposes.[1] It includes wages, salaries, self-employment income, personal rents, interest, dividends, realized gains from property dispositions, and government cash transfer payments, such as social security benefits and welfare payments. Further, because income is measured on a pre-tax basis, the CBO also includes corporate income taxes and the employer-paid portion of the social security tax in household income.

Omitted from the CBO's definition of income are in-kind benefits, such as employer-paid insurance premiums. Also excluded are "paper" losses incurred by families engaged in rental activities and most partnership losses. Losses incurred by sole proprietorships, however, are taken into account in computing household income. Finally, gains and losses from property are included only when realized, and the benefits received from pension plans and the social security system are included at the time of receipt.

The CBO includes the following items in its definition of taxes: (1) federal income taxes paid by individuals, (2) federal income taxes paid by corporations, (3) social security taxes paid by both the employee and employer, and (4) federal excise taxes. It also makes several assumptions about the incidence of these taxes. First, the income tax paid by individuals is assumed to be borne by the households that pay the tax and not shifted to other households. Second, the income tax paid by corporations is allocated to households either on the basis of the household's capital income, or with respect to its personal-service income, where the use of the latter produces a slightly less progressive result. Third, social security taxes are assumed to be borne completely by the employee through reductions in personal-service income. Finally, excise taxes are assumed to be borne fully by the consuming household, with businesses passing along these added costs through higher prices on all commodities.

After estimates of household income and taxes are derived, each household is ranked in terms of an income index. This index is created by dividing each household's income by the poverty threshold associated with the household's size. Portfolios of households (e.g., quintiles) are formed on the basis of the income index, and both

[1] For a more in-depth review, see CBO (1987) and Kasten and Sammartino (1990).

the average number of poverty thresholds and effective tax rate are computed across the households within each portfolio. The results of the CBO's 1992 tax distribution study are shown in Tables 1 and 2. These data indicate that the income inequality increased and tax progressivity decreased during the 1980s.

TABLE 1
THE NUMBER OF POVERTY THRESHOLDS FOR ALL HOUSEHOLDS BY INCOME QUINTILES FOR 1977-89

Income Group	1977	1980	1985	1988	1989
Lowest Quintile	0.97	0.92	0.85	0.86	0.87
Second Quintile	2.13	2.08	2.02	2.09	2.11
Third Quintile	3.21	3.18	3.22	3.34	3.36
Fourth Quintile	4.52	4.55	4.74	4.96	4.94
81-90 Percent	6.15	6.24	6.70	7.02	7.02
91-95 Percent	7.91	8.04	8.85	9.26	9.37
95-99 Percent	11.40	11.69	13.24	14.39	14.46
Top 1 Percent	32.71	36.31	49.37	61.04	58.96
All Households	3.94	3.98	4.26	4.58	4.55

Source: 1992 Green Book (Table 15, pp. 1511) Committee on Ways and Means, U.S. House of Representatives, U.S. Government Printing Office, Washington D.C.: May 15, 1992. Table Source: Congressional Budget Office (CBO) tax simulation model.

TABLE 2
THE DISTRIBUTION OF FEDERAL TAXES FOR ALL HOUSEHOLDS BY INCOME QUINTILES FOR 1977-1993

Income Group	1977	1980	1985	1988	1989	1993
Lowest Quintile	9.3%	8.1%	10.3%	9.3%	9.3%	8.4%
Second Quintile	15.4	15.6	15.8	15.9	15.7	15.5
Third Quintile	19.5	19.8	19.1	19.8	19.4	19.5
Fourth Quintile	21.8	22.9	21.7	22.4	22.0	22.2
81-90 Percent	24.0	25.3	23.4	24.6	24.2	24.6
91-95 Percent	25.2	26.3	24.2	26.0	25.6	26.4
95-99 Percent	27.0	27.9	24.3	26.5	26.2	27.1
Top 1 Percent	35.5	31.7	24.9	26.9	26.7	28.8
All Households	22.8	23.3	21.7	22.9	22.6	23.2

Source: 1992 Green Book (Table 14, pp. 1510) Committee on Ways and Means, U.S. House of Representatives, U.S. Government Printing Office, Washington D.C.: May 15, 1992. Table Source: Congressional Budget Office (CBO) tax simulation model.

FACTORS AFFECTING THE MEASUREMENT OF INCOME

All empirical definitions of income or taxes are incomplete, and the CBO's measures of these variables are no different. The errors that result from these incomplete measures generally have little effect on the results, if they are small in magnitude or randomly distributed throughout the sample. Further, even if the errors are large and systematic, their effects can be effectively controlled by performing through-time analyses, if the errors are stable over time. Unfortunately, the errors that result from the CBO's empirical procedures are neither small, random, nor stable.

Changes in Income Mix

The CBO employs a "constant law" definition of household income to ensure that income is measured consistently over time. However, its empirical definition of income excludes certain items of economic income, and fails to properly measure some included items. Thus, the CBO's estimate of income inequality is dependent on both the type and amount of income received by each household.

During the 1980s at least three important shifts in the composition of household income occurred. The first occurred in response to the Tax Reform Act of 1986 (TRA 1986), which made extensive changes to both the definition of taxable income and the rates at which such income is taxed. Two provisions, in particular, encouraged

households to substitute self-employment income for capital gains.[2] These provisions are the reduction in individual tax rates below corporate tax rates and the elimination of the capital gains deduction.

Before TRA 1986, and especially under the tax regimes in effect in the 1970s, the tax law encouraged households to conduct business in corporate form, as corporate tax rates were lower than individual tax rates and a substantial portion of the capital gain realized on the sale of corporate stock was exempt from tax. After TRA 1986 (and under current law), however, individual tax rates were reduced below corporate rates and capital gains were fully taxed. Thus, the tax law encouraged households to avoid the double taxation inherent in the corporate form and conduct business as sole proprietorships, S corporations, or partnerships.[3] Further, if it was infeasible or prohibitively costly to convert from regular corporate status to a conduit business form, households could achieve "homemade" S corporation status by increasing the pay-out of the corporation's "profit" in the form of deductible interest, rent, or salary.

The empirical evidence indicates that households responded to TRA 1986 by altering the form in which they conducted business. Specifically, MacKie-Mason and Gordon (1991) report that 375,000 filings for S corporation status occurred in the first half of 1987, more than twice the six-month average for the 1983-1986 period. Even more striking are their findings that the net income from partnerships and S corporations rose from an average of -$2.2 billion over the 1981-1986 period to $32.0 billion in 1987![4] Further, additional income was reported by households in the form of increased salary, rent, and interest, as they converted regular corporations to homemade S corporations by paying out the corporation's profit in tax deductible form.

The substitution of self-employment income for unrealized capital gains affects the CBO's estimate of income inequality in the immediate post-TRA 1986 period because the CBO includes in household income both the currently realized capital gains (which represent income accrued in prior periods) and the currently realized self-employment income.[5] Thus, the change in income mix causes the CBO to overstate the income of the households that own businesses, which are typically higher-income households.

The second shift in income composition occurred with the enactment of the passive loss restrictions in TRA 1986. This provision prohibited investors from deducting losses incurred in passive activities against non-passive income, such as salaries or interest. Instead, such losses were required to be suspended (i.e., deferred) until passive income was realized or the passive activity was sold. The empirical evidence indicates that suspended passive losses amounted to $10.0 billion in 1987, with an additional $15.0 billion in passive losses that would have been suspended had the passive loss provisions been fully operational (Nelson and Petska, 1989-90).[6] Thus, because the CBO does not allow suspended passive losses to reduce household income, it overstates the incomes of households with investments in passive activities, which are most often higher-income households.[7]

The third change in income mix was the substitution of employer-paid, in-kind benefits for cash salary. These in-kind benefits, such as health insurance, accounted for a significant and increasing share of compensation during the 1980s, but were not included by the CBO as income. The omission of such benefits causes the CBO to

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2 The term self-employment income is used here to refer to the income derived by owners of sole proprietorships, partnerships, and S corporations.

3 See Scholes and Wolfson (1992) for a more complete discussion.

4 The results in MacKie-Mason and Gordon (1991) are confirmed by Poterba (1992) where he reports that the share of corporate income received by S corporations rose from only 2% in 1980 to over 18% in 1990. Further, Petska (1992) indicates that the net income reported by all partnerships rose through the 1986-89 period, from $-17.4 billion in 1986, to $-5.4 billion in 1987, to $14.5 billion in 1988, and finally, to $14.1 billion in 1989.

5 Obviously, after some period of time, the reported realizations of capital gains from the sale of corporate stock will fall because the owners' basis in corporate stock (or partnership interest) has been increased by the amount of realized, but undistributed self-employment income.

6 The passive loss restrictions were phased-in over time. The percentage of the total loss that was deductible without regard to passive gains was 65% in 1987, 40% in 1988, 20% in 1989, 10% in 1990, and 0% in 1991.

7 The CBO applies its own version of the passive activity rules for years before TRA 1986 by denying the deduction for net losses from partnership activities. However, this procedure is a highly imperfect proxy for the actual passive loss rules for two reasons. First, it does not affect households that have passive losses, but whose net partnership income is positive. Second, the CBO does not carry forward the denied passive loss and apply it against the reported gain when the passive activity is disposed.

overstate the extent of income inequality because the value of such benefits are typically the same for each household. Thus, as a percentage of household income, their value declines as income rises.[8]

A similar effect occurs with respect to employer-paid pension contributions, especially the increasingly popular section 401(k) plans. Under the CBO's procedures, the portion of household income contributed to qualified pension plans and the income earned on such contributions are not included in income until received by the household at retirement. This omission understates the income of middle-income households because pension benefits are typically proportional to personal-service income and, as shown in Table 3, the percentage of personal-service income is concave with respect to household income.[9,10]

TABLE 3
THE COMPOSITION OF TOTAL FAMILY INCOME
ACROSS INCOME TYPES BY INCOME QUINTILES FOR 1989

Income Group	Wages	Self Employ	Rents Int/Div	Capital Gains	Gov't Transfer	Other
Lowest	51.3%	-0.3%	3.2%	0.4%	39.1%	6.4%
Second	66.1	3.8	5.2	0.5	17.7	6.8
Middle	72.9	3.4	6.8	0.6	9.9	6.4
Fourth	77.0	3.4	7.2	1.1	5.8	5.5
81-90 Percent	77.4	3.6	8.4	1.5	4.0	5.1
91-95 Percent	74.6	5.0	10.6	2.7	2.5	4.6
96-99 Percent	61.6	9.3	16.4	5.8	2.0	4.9
Top 1 Percent	37.4	14.0	24.1	22.2	0.6	1.6
All Households	67.7	5.0	10.7	4.5	7.0	5.0

Source: 1992 Green Book (Table 33, pp. 1538) Committee on Ways and Means, U.S. House of Representatives, U.S. Government Printing Office, Washington D.C.: May 15, 1992. Table Source: Congressional Budget Office (CBO) tax simulation model.

Property Transactions - Inflation and Implicit Taxes

In measuring the income derived from property transactions, the CBO computes gains and losses by comparing the amount realized from the sale with the property's adjusted basis, without adjusting for through-time changes in purchasing power. Further, no adjustment is made for the implicit tax associated with acquiring tax (dis)advantaged assets. Thus, because income from property transactions occurs much more frequently for higher-income households (see Table 3 earlier), these omissions cause the CBO to systematically misstate the extent of income inequality.

With respect to inflation, it is clear that by failing to adjust a property's basis, the income reported for households selling capital assets overstates the actual increase in their purchasing power. For example, using data from 1973 tax returns, Feldstein and Slemrod (1978) show that the nominal gains from sales of corporate stock were twice the amount of real gains, and ten times the amount of real gains when the capital loss limitation was

[8] The U.S. Bureau of Census finds that the inclusion of health insurance in income causes income inequality to decrease, with the highest and lowest income households receiving smaller shares of total income, relative to the middle-income families. See U.S. Bureau of Census, Current Population Reports, series P-60, No. 169-RD.

[9] Pension benefits also have dollar limitations which restrict the benefits that households with high personal-service income can receive.

[10] The failure to accrue pension benefits also has a lesser impact on lower-income households for two reasons. First, lower-income households are less likely to participate in employer-paid pension plans. Second, because lower-income households

removed.[11] Thus, because the CBO fails to adjust for inflation and account for realized, but unrecognized capital losses, it overstates the incomes of households with investment income.

A second consideration in measuring property income concerns implicit taxes. Implicit taxes are the adjustments to pre-tax return that offset the tax (dis)advantage associated with certain investments. For example, it is well known that municipal bonds have lower pre-tax yields than equally risky, fully-taxable bonds because investors value the right to exclude municipal bond interest from taxation. Specifically, if the marginal tax rate is 30%, and equally risky, fully-taxable bonds yield 10% before taxes, competition among investors forces the pre-tax yield on municipal bonds toward 7%, where both bonds yield the same after-tax return.

The CBO does not include the implicit tax on the municipal bond (i.e., the foregone interest income) in either the income or taxes of the investing household. Thus, the CBO considers investors in municipal bonds to have less income and pay less tax than investors in fully-taxable bonds, even when both parties earn the same after-tax income. To the extent that higher-income households are the most likely investors in such bonds, the CBO understates their income (and taxes).

While the inclusion of the implicit tax on municipal bonds is not of great magnitude for most households, such is not the case with owner-occupied housing. Like municipal bonds, owner-occupied housing is a tax-advantaged asset, because the owner-occupier household can exclude the net imputed rental income from taxation. To illustrate this tax advantage, consider a household that invests in a house and rents it to another household. The owner-lessor household reports the rental income net of interest, taxes, maintenance, and depreciation. In contrast, however, the household that rents the house to itself, only reports a deduction for the mortgage interest and real estate taxes. The owner-occupier household does not report the gross imputed rental value, net of the maintenance and depreciation.[12]

The empirical evidence of Mazur, Scholes, and Wolfson (1986) and Ling and McGill (1992) strongly suggests that the magnitude of the implicit tax associated with owner-occupied housing is very large, approximating one-half of the total explicit federal income tax paid by individuals! Further, their results indicate that the distribution of the implicit tax, as a percentage of household income, is concave with respect to household income. This result is consistent with the notion that owner-occupied housing is the largest financial asset of middle-income households. Thus, the omission of the implicit tax on owner-occupied housing causes the CBO to substantially overstate the extent of income inequality.[13]

Regional Cost of Living Differences

In computing household income, the CBO controls for general price-level changes to facilitate through-time comparisons of income distribution. However, no controls exist over differences in regional costs of living. Thus, the CBO assumes that a dollar of income has the same purchasing power throughout the U.S.

In a test of the relation between regional costs of living and income, Wilkie (1992) compared regional costs of living to the median adjusted gross incomes (AGI) of taxpayers in 221 three-digit ZIP codes for 1969, 1979, and 1988. The results of that study indicate that income and cost of living are positively related. Thus, as shown in Table 4, the dispersion in income consistently overstates the dispersion in purchasing power because higher-income households live in regions with higher costs of living. This appears to have been especially true in the 1980s, as the dispersion of regional costs of living increased by more than the dispersion of income.

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may have a disproportionate number of retiree households, the accrual of pension benefits causes their reported incomes to fall (instead of increase) since pension benefits are reclassified as return of capital, instead of income.

[11] In lieu of adjusting the basis of the investor's original investment for inflation, the periodic cash-flows derived from the investment (e.g., dividends, interest, sales proceeds, etc) can be deflated to control for changes in purchasing power.

[12] The CBO omits the net implicit tax from the incomes of households that own and occupy their own houses. Specifically, the CBO omits both the net rental income (rental income less maintenance and depreciation) and the deductions for interest and taxes.

[13] The U.S. Bureau of Census estimate of "net imputed return on equity in own home" causes income inequality to increase slightly. Ling and McGill (1992) indicate, however, that the Census Bureau significantly underestimates the amount of implicit income. Further, it fails to partition the quintile of high-income households into finer categories. See U.S. Bureau of the Census, Current Population Reports, series P-60, No. 169-RD.

TABLE 4
GINI COEFFICIENTS[1] FOR ADJUSTED GROSS INCOME, PURCHASING POWER, AND COST OF LIVING ACROSS ZIP CODES FOR 1969, 1979, and 1988

Variable	1969	1979	1988
Adjusted Gross Income	.106	.086	.105
Purchasing Power[2]	.087	.079	.098
Regional Cost of Living	.038	.041	.075

[1] Gini coefficients show the extent of inequality in the distribution with a value of zero representing perfect equality (each person having an equal share) and a value of 1.00 reflecting perfect inequality (one person has all).

[2] Purchasing Power is derived by dividing the Adjusted Gross Income by the Cost of Living for each ZIP code.

Source: Wilkie (1992).

The positive relation between income and cost of living, however, is not perfect. The data also suggest that households with the highest (lowest) income are not necessarily those with the most (least) purchasing power. For example, as shown in Table 5, when the data are aggregated into one-digit ZIP codes, West coast households (ZIP = 9) had above-average income throughout the 1969-88 period, but only in 1969 did they have above-average purchasing power. Even more dramatic are the results for households in the New York area (ZIP = 1). Despite the fact that these households had the highest income throughout the 19-year period, their purchasing power fell from first in 1969, to fifth highest in 1979, to last in 1988.

The results in Wilkie (1992) are based on the median taxpayer in each three-digit ZIP code, and thus, they do not include the entire income distribution. However, they strongly suggest that income inequality and purchasing power inequality are not the same. Thus, the CBO's income measure undoubtedly overstates the extent of, and change in purchasing power inequality, and it incorrectly identifies the households with the greatest income as those with the greatest purchasing power (i.e., ability to pay).

Annual Income and Demographic Diversity

The CBO measures income on an annual basis and, because of data limitations, it does not include the same households in its sample over time. Indeed, many of the households are composite, rather than actual households. The use of these experimental design procedures exposes the results to various validity threats that limit their usefulness. In particular, the CBO's methods do not allow one to validly infer from the reported increase in income inequality that the "rich got richer and the poor got poorer." That may be true, but as Slemrod (1991) and Treasury (1992) indicate households exhibit a significant amount of mobility across income quintiles over time. Thus, at least some of the 1977 poor may be found with the 1989 rich, while some of the 1977 rich may be included with the 1989 poor.

A second failing of the CBO's sampling procedure is that the validity of the results is threatened by changes in demographic diversity. That is, the changes in income inequality reported by the CBO may not reflect changes in household income, but changes in the nature of the households included in the sample. Demographic diversity affects income inequality because different household "types" earn different amounts of income, principally because they work more or fewer hours. For example, not only do married couples work more hours than single-parent households, but within the set of married couples there may be zero, one, or two working persons. This diversity in households is shown in Table 6, where the number of year-round, full-time workers per household is shown to vary widely by household type. Further, these data indicate that the household types became more diverse in the 1980s. For example, while single mothers with children averaged only .43 and .46 full-time workers in 1979 and 1989, respectively, married couples with children had 1.07 and 1.15 workers for the same years. Further, non-elderly childless households averaged 1.16 full-time workers in 1979 and increased this amount to 1.27 in 1989.

TABLE 5
ADJUSTED GROSS INCOME AND PURCHASING POWER INDEXES FOR 10 ONE-DIGIT ZIP CODES IN 1969, 1979, AND 1988

	Income			Purchasing Power		
ZIP	1968	1979	1988	1969	1979	1988
0	102.6 (5)	91.4 (9)	113.3 (2)	97.5 (6)	84.0 (10)	90.6 (9)
1	114.7 (1)	107.0 (1)	114.9 (1)	105.9 (1)	97.6 (5)	87.6 (10)
2	87.5 (10)	93.1 (8)	89.9 (10)	91.4 (10)	96.9 (6)	99.6 (6)
3	89.0 (8)	87.1 (10)	95.2 (7)	92.9 (9)	91.8 (9)	101.3 (5)
4	104.7 (4)	104.6 (3)	107.7 (3)	103.8 (4)	107.9 (2)	107.7 (2)
5	92.4 (7)	99.5 (5)	94.8 (8)	94.0 (7)	102.1 (3)	102.6 (4)
6	105.8 (3)	107.0 (1)	104.3 (5)	104.8 (2)	108.3 (1)	109.5 (1)
7	88.9 (9)	97.7 (6)	90.6 (9)	94.0 (7)	101.3 (4)	98.9 (7)
8	97.5 (6)	97.4 (7)	97.1 (6)	99.4 (5)	95.6 (8)	104.6 (3)
9	109.4 (2)	101.9 (4)	105.1 (4)	104.0 (2)	95.7 (7)	94.6 (8)

Note: The top number in each cell is the index for the observations within each 1-digit ZIP code, where 100.0 is the average index value. The number in parentheses is each cell's rank.

ZIP codes correspond to the following states:

0 - Mass., R.I., N.H., Me., Vt., Conn., N.J.
1 - N.Y., Pa., Del.
2 - D.C., Md., Va., W.Va., N.C., S.C.
3 - Ga., Fl., Ala., Tn., Miss.
4 - Ky., Ohio, Ind., Mich.
5 - Iowa, Wisc, Minn., S.D., N.D., Mt.
6 - Ill., Mo., Kan., Neb.
7 - La., Ark., Ok., Tx.
8 - Co., Wy., Id., Ut., Az., N.M., Nev.
9 - Calf., Ha., Ore., Wash., Alaska

TABLE 6
THE AVERAGE NUMBER OF YEAR-ROUND, FULL-TIME WORKERS PER FAMILY BY FAMILY TYPE AND INCOME QUINTILE FOR 1979 AND (1989)

	Income Quintile					
Family Type	1st	2nd	3rd	4th	5th	Total
Married Couples w/ Children	0.62 (0.64)	0.94 (1.04)	1.10 (1.22)	1.24 (1.36)	1.39 (1.43)	1.07 (1.15)
Single Mothers w/ Children	0.04 (0.04)	0.08 (0.08)	0.33 (0.36)	0.67 (0.74)	0.90 (0.94)	0.43 (0.46)
Other Families w/ Children	0.25 (0.34)	0.79 (0.83)	1.16 (1.26)	1.41 (1.40)	1.51 (1.54)	1.04 (1.09)
Nonelderly Families w/o Children	0.52 (0.61)	1.01 (1.13)	1.29 (1.39)	1.44 (1.58)	1.55 (1.65)	1.16 (1.27)
Nonelderly Unrelated Individuals	0.09 (0.10)	0.32 (0.45)	0.62 (0.73)	0.77 (0.81)	0.84 (0.85)	0.53 (0.59)
All Families[1]	0.18 (0.20)	0.52 (0.57)	0.82 (0.87)	1.06 (1.08)	1.25 (1.28)	0.76 (0.79)

1 Includes elderly childless families and elderly individuals not shown separately.

Note: The numbers within each cell refer to the number of year-round, full-time workers for 1979 and (in parentheses) 1989.

Source: 1992 Green Book (Table 74, pp. 1429) Committee on Ways and Means, U.S. House of Representatives, U.S. Government Printing Office, Washington D.C.: May 15, 1992. Table Source: Congressional Budget Office (CBO) calculations based on data from the March 1980 and March 1990 Current Population Surveys.

The increased diversity across households, in terms of the number of full-time employees, reflects the increased participation of women in the workplace. The increased involvement of women, along with the increase in their rates of pay, is responsible for an important part of the increase in income inequality. For example, in an analysis of households headed by males under age 65, Danziger, Gottschalk, and Smolensky (1989) found that the rise in the number of rich households is equally attributable to two factors: (1) increased earnings of wives and (2) increased inequality for male heads of household. Their results are confirmed by the data in Table 7, which show that the dispersion in household income falls when the earnings of women are removed from the analysis.

TABLE 7
THE EFFECT OF ADULT FEMALE EARNINGS GROWTH ON TOTAL FAMILY INCOME FOR 1979 AND 1989

	Percent Change in Total Family Earnings		
Income Quintile	Actual Change	Change w/o Increased Adult Female Earnings	Difference: Effect of Women's Increased Earnings
Lowest	1.0%	-3.1%	4.1%
Second	-1.4	-6.8	5.4
Third	3.9	-4.1	8.0
Fourth	7.7	-2.0	9.7
Highest	16.7	6.6	10.1
Total	9.6	0.7	8.9

Source: 1992 Green Book (Table 78, pp. 1434) Committee on Ways and Means, U.S. House of Representatives, U.S. Government Printing Office, Washington D.C.: May 15, 1992. Table Source: Congressional Budget Office.

In addition to the effect that the different types of households have on income inequality, the distribution of income is also affected by changes in the relative proportions of these households. For example, the data in Table 8 show that retiree households, single-earner individuals, and single-parent households, (households with the fewest number of full-time employees) increased their share of total households by 11 percentage points. In contrast, the proportion of total households represented by married couples with children fell by 10 percentage points, from 34 percent of total households in 1973 to 24 percent in 1989. Thus, as the proportion of total households with relatively few full-time workers increased, so too did income inequality.

TABLE 8
THE NUMBER AND PROPORTION OF FAMILIES BY FAMILY TYPE IN 1973, 1979, AND 1989

	Number of Families			Proportion of Families		
Family Type	1973	1979	1989	1973	1979	1989
Married Couples w/ Children	24,798	24,166	24,378	0.34	0.29	0.24
Single Mothers w/ Children	4,126	5,650	7,123	0.06	0.07	0.07
Other Families w/ Children	8,469	10,007	13,095	0.12	0.12	0.13
Nonelderly Families w/o Children	16,363	17,931	21,257	0.22	0.21	0.21
Nonelderly Unrelated Individuals	11,820	17,799	25,210	0.16	0.21	0.25
Elderly Families w/o Children	7,590	8,676	10,600	0.10	0.10	0.10
Elderly Unrelated Individuals	6,294	7,655	9,828	0.09	0.09	0.10
All Families	73,166	84,229	101,663	1.00	1.00	1.00

Note: The number of families is in thousands.

Source: 1992 Green Book (Table 42, pp. 1363) Committee on Ways and Means, U.S. House of Representatives, U.S. Government Printing Office, Washington D.C.: May 15, 1992. Table Source: Congressional Budget Office (CBO) calculations based on data from the March 1980 and March 1990 Current Population Surveys.

The shift toward smaller households with fewer full-time workers is not controlled by the CBO. Despite the fact that the CBO adjusts household income for differences in size, this adjustment does not eliminate the effect of changes in demographic diversity on income inequality. This occurs because poverty thresholds are not proportional to household size. For example, the data in Table 9 show that for one, two, three, and four-person households, the dollar amount of income required for a poverty threshold is $5,797, $7,419, $9,081, and $11,644 respectively. Thus two, three, and four-person households are equivalent to 1.28, 1.57, and 2.01 single persons, respectively.

TABLE 9
POVERTY THRESHOLDS ACROSS FAMILY SIZE

Family Size	Official Poverty Threshold	Adjusted Poverty Threshold	Equivalence Value (one person =1)
1	$6,311	$5,797	1.00
2	8,076	7,419	1.28
3	9,885	9,081	1.57
4	12,675	11,644	2.01
5	14,990	13,770	2.38
6	16,921	15,544	2.68
7	19,162	17,603	3.04
8	21,328	19,592	3.38
9 or more	25,480	23,407	4.04

Source: 1992 Green Book (Table 38, pp. 1352) Committee on Ways and Means, U.S. House of Representatives, U.S. Government Printing Office, Washington D.C.: May 15, 1992. Table Source: Congressional Budget Office.

Note: Poverty thresholds shown for one and two-person families are a weighted average of the separate official thresholds for elderly and non-elderly individuals and families. Adjusted poverty thresholds use the CPI-U-X1 (1967-100) to adjust for inflation.

By using a non-linear function to adjust household income for differences in size, the CBO's measure of income inequality remains sensitive to changes in demographic diversity. To illustrate, consider an economy comprised of two four-person households (Households 1 and 2), each with $50,000 of income ($12,500 per person) and 4.3 poverty thresholds (50,000/11,644). In this setting, each household comprises 50% of the total households, has 50% of the total income, and 50% of the total poverty thresholds. Assume then that the husband and wife in Household 2 divorce and create two new households, Household 2a with a single person and Household 2b with three persons. Assume also that the two new households have $12,500 and $37,500 of income, respectively (i.e., per capita income is the same for all households).

In the second setting, Household 1 still has $50,000 of income and 4.3 poverty thresholds, but Household 2a has only 2.2 poverty thresholds (12,500/5,797) and Household 2b has only 4.1 poverty thresholds (37,500/9,080). Thus, while Household 1 comprises only 33% of the households, it has 50% of the income and 41% of the total poverty thresholds (4.3/(4.3+4.2+2.1)). Therefore, while the CBO's adjustment for household size adjusts household income for differences in living costs, it does not control for shifts is household size. That is, while the poverty thresholds may accurately reflect the relative well-being of the three households, the fact remains that changes in demographic diversity affect the extent of income inequality, even when household income is adjusted for differences in household size.

A final threat to the validity of the CBO's results occurs because a single year, 1977, is used as the base year. The CBO's choice of using 1977 as the base year is predicated on the notion that the business cycle was at the same stage then, as it was during the growth years of the mid-1980s. Thus, since previous research suggests that income inequality and economic growth are inversely related (Blank and Blinder, 1986), it is presumed that any differences in income inequality between 1977 and 1989 are not the result of differences in the business cycle.

The empirical evidence, however, contradicts the notion that 1977 is a neutral base year. This evidence suggests that income inequality was near an historical low in the late 1970s, an outcome that occurred because of the interplay of two factors: (1) systematic differences in incomes across regions and (2) non-synchronous regional growth. The evidence of non-synchronous regional growth and its effect on income inequality is presented in Wilkie (1992) where the adjusted gross income of the median taxpayers in 221 three-digit ZIP codes were compared in 1969, 1979 and 1988. The data, which are shown in Table 10, indicate that income varied widely across ZIP codes, ranging from approximately 60% to 150% of the average. Further, the results in Table 11 show that the correlation between the level of income in 1969 and the change in income from 1969 to 1979 was strongly negative

(-.61). Thus, poorer ZIP codes (in terms of income) became relatively better-off, while richer ZIP codes became relatively worse-off.

TABLE 10
DESCRIPTIVE STATISTICS OF ADJUSTED GROSS INCOME, COST OF LIVING, AND PURCHASING POWER ACROSS ALL ZIP CODES FOR 1969, 1979, AND 1988

Variable	Mean	Median	Std. Dev.	Minimum	Maximum
AGI-69	100.0	97.7	18.9	58.7	148.0
AGI-79	100.0	100.1	15.0	67.9	139.9
AGI-88	100.0	97.9	18.7	54.3	151.1
COL-69	100.0	98.9	6.7	83.1	112.3
COL-79	100.0	98.9	7.3	83.2	120.3
COL-88	100.0	94.2	15.8	83.6	152.3
PP-69	100.0	98.3	15.6	68.1	143.9
PP-79	100.0	98.9	13.9	73.2	137.4
PP-88	100.0	100.1	17.7	53.0	158.1

Note: All variables are indexed relative to their overall mean value.

Source: Wilkie (1992).

TABLE 11
CORRELATION STATISTICS OF CHANGES IN ADJUSTED GROSS INCOME WITH LEVELS OF ADJUSTED GROSS INCOME FOR 1969, 1979, AND 1988

	AGI Change 69-79	AGI Change 79-88	AGI 69	AGI 79
AGI Change 79-88	-.38			
AGI 69	-.61	.07		
AGI 79	-.03	-.19	.81	
AGI 88	-.31	.61	.71	.66

Note: The numbers are Pearson product-moment correlation statistics. Spearman rank correlation statistics are essentially the same as those included here.

Source: Wilkie (1992).

The shuffling of income ranks that occurred in the 1970s was so dramatic that the correlation between the level of income in 1979 and the 1969-79 change in income was nearly zero (-.03). In other words, a ZIP code drawn at random from the 1979 distribution was equally likely to have increased or decreased its rank in the prior 10 years. These results reflect the growth of the "sunbelt" and energy-producing regions during the 1970s, and the relative retreat of the "rustbelt" and energy-consuming regions. Because wage rates in the sunbelt were initially lower than those in the rustbelt, income inequality shrank throughout the decade.

In contrast to the change in income from 1969 to 1979, the change in income during the 1980s was in the opposite direction (the correlation between the 1969-79 and the 1979-88 changes in income was -.38). Further, the 1979-88 change in income was weakly negative with respect to the level of income in 1979 (-.19), but strongly

positive with respect to the level of income in 1988 (.61). Thus, unlike the 1970s, the ZIP codes that gained ground during the 1980s ended the decade at the top of the income distribution, while those that lost ground fell to the bottom.

These data reflect the collapse of the energy and real estate industries in the sunbelt, and the expansion of the financial services, high-technology, defense, and real estate industries in the rustbelt and on the West coast. In this case, however, income inequality increased as the regional economies with high-wage households grew, while the regions with low-wage households receded. The net result over the 1969-88 period was that income inequality fell from 1969 to 1979, but then returned to its previous level by 1988.

Summary

In this section the empirical procedures employed by the CBO to measure household income were found to produce at least four errors that were neither small, random, nor stable. First, because the CBO does not measure income comprehensively, its results are sensitive to changes in household income mix that occurred during the 1980s. Second, because it fails to account for inflation and implicit income (and taxes), the CBO systematically misstates the income associated with holding and disposing property. Third, by failing to account for differences in regional cost of living, the CBO dramatically overstates the extent of purchasing power inequality and misranks households in terms of their purchasing power. Fourth, by measuring annual income, using an inconsistent sample, failing to control for changes in household diversity, and using a single base-year, the CBO's results cannot be used to draw valid inferences about changes in the distribution of income over time.

FACTORS INFLUENCING THE CALCULATION OF EFFECTIVE TAX RATES

The CBO defines federal taxes to include the income tax on individuals and corporations, the social security tax, and various excise taxes. No account is taken of foreign income taxes, which are often credited against the federal income tax, or state and local income taxes, which are often deducted in computing taxable income. Further, the CBO explicitly ignores the relation between government services and income.[14]

As shown earlier in Table 1, the CBO finds that the relation between federal taxes and income is progressive, but that the degree of progressivity lessened during the 1980s, at least for households with the highest incomes. In this section, the methods employed by the CBO to compute tax progressivity are reviewed and critiqued, and alternative computational methods are suggested.

Federal excise taxes

Federal excise taxes comprised approximately 5% (10%) of total federal taxes in 1989 (1977) and accounted for 1.1 (1.3) percent of overall household income. These excises include tobacco and liquor taxes, gasoline and motor fuel taxes, import tariffs, airline ticket taxes, and telephone taxes. Because a household's purchase of the taxed items is generally not proportional to income, these taxes are regressive with respect to income. For example, as shown in Table 12, the effective excise tax rate is 2.8% for households in the lowest income quintile, but only 0.3% for households with the highest 1% of income. This relation between excise taxes and income has been relatively stable over time, though upper income households experienced greater percentage declines in effective excise tax rates because of the disproportionate increase in their reported income.

[14] To the extent that the value of government services received by taxpayers is equal on a per-household basis, the tax distribution study understates the progressivity of the total tax and expenditure system. If benefits received are proportional to household income, the relative distribution is unaffected by the omission of benefits. Finally, if benefits are skewed toward those households with the highest incomes, the distribution overstates the progressivity of the total tax and transfer system. See Menchik (1991) for a recent study.

TABLE 12
FEDERAL EXCISE TAXES FOR 1977 TO 1993

Income Q'tile	1977	1980	1985	1989	1993	% Chg 77-93	% Chg 85-93
Lowest	2.9%	2.1%	2.8%	2.4%	2.8%	-4.7	-1.7
Second	1.8	1.3	1.5	1.5	1.7	-4.4	12.5
Third	1.5	1.1	1.2	1.1	1.3	-8.9	15.4
Fourth	1.3	0.9	0.9	0.9	1.1	-14.3	14.5
81-90 Pct	1.1	0.8	0.8	0.8	0.9	-18.0	20.7
91-95 Pct	1.0	0.7	0.7	0.7	0.8	-20.7	19.7
96-99 Pct	0.8	0.6	0.5	0.4	0.5	-36.4	0.2
Top 1 Pct	0.3	0.3	0.3	0.3	0.3	-10.0	-1.3
All H'hlds	1.3	0.9	1.0	0.9	1.1	-15.8	11.4

Source: 1992 Green Book (Table 29, pp. 1529) Committee on Ways and Means, U.S. House of Representatives, U.S. Government Printing Office, Washington D.C.: May 15, 1992. Table Source: Congressional Budget Office (CBO).

Federal income tax - corporations

Corporate income taxes accounted for approximately 11% of total federal revenues in 1989, down from more than 15% in 1977, a change that is largely attributable to the continuing decline of U.S. corporate profitability (Amerkhail, Spooner, and Sunley, 1987; Auerbach and Poterba, 1987). Similarly, the percentage of household income consumed by the corporate income tax has fallen from 3.9% in 1977 to 2.3% in 1989.

The relation between the corporate income tax and family income is highly progressive, because it is assumed that the tax is passed "backwards" to the factors of production and not "forward" to consumers. Thus, the effective corporate income tax rate rises from only 1.1% for households in the lowest income quintile, to 4.4% for households with the highest 1% of income. As shown in Table 13, this relation has been very stable over time, with households at all income levels experiencing similar percentage reductions in their effective corporate income tax rates.[15]

[15] If the corporate income tax is presumed to be passed forward to consumers, the tax is regressive with respect to household income, but became less so during the 1980s as the corporate income tax dwindled in relative importance.

TABLE 13
FEDERAL INCOME TAX FOR CORPORATE TAXPAYERS FOR 1977 TO 1993

Income Q'tile	1977	1980	1985	1989	1993	% Chg 77-93	% Chg 85-93
Lowest	1.9%	1.3%	1.0%	1.1%	1.1%	-37.9	20.3
Second	2.7	2.0	1.3	1.5	1.5	-42.9	17.0
Third	3.0	2.2	1.5	1.8	1.8	-40.5	17.3
Fourth	3.2	2.4	1.7	1.9	1.9	-38.9	15.8
81-90 Pct	3.4	2.6	1.8	2.0	2.1	-39.7	14.1
91-95 Pct	3.9	3.0	2.0	2.2	2.2	-42.2	12.4
96-99 Pct	5.1	3.8	2.4	2.8	2.8	-45.6	16.2
Top 1 Pct	8.8	6.1	3.4	4.2	4.4	-50.2	30.0
All H'hlds	3.9	2.9	1.9	2.3	2.3	-39.9	19.9

Source: 1992 Green Book (Table 29, pp. 1529) Committee on Ways and Means, U.S. House of Representatives, U.S. Government Printing Office, Washington D.C.: May 15, 1992. Table Source: Congressional Budget Office (CBO).

Social security tax

The social security tax (and other employment taxes) accounted for 37% of total federal receipts in 1989, up from the 23% share they provided in 1977. Thus, while such taxes comprised 6.5% of overall household income in 1977, their share rose to 8.9% in 1989, as shown in Table 14.[16] This increase in the effective social security tax rate occurred for two major reasons: (1) social security matured as an insurance system, with the ratio of beneficiaries to contributors rising dramatically, and (2) amendments to the social security system were enacted in 1983 which required that reserves be created to provide for the anticipated retirement of the "baby-boom" generation.

[16] Included within "social security" are the old age, survivors, disability, and health insurance system. It is not clear whether the CBO includes unemployment insurance within this system as well.

TABLE 14
SOCIAL SECURITY FOR 1977 TO 1993

Income Q'tile	1977	1980	1985	1989	1993	% Chg 77-93	% Chg 85-93
Lowest	5.1%	5.2%	6.7%	7.6%	7.6%	47.9	14.1
Second	7.5	7.8	9.1	9.4	9.5	25.7	4.3
Third	8.1	8.6	9.7	10.0	10.1	25.0	4.0
Fourth	7.8	8.6	9.8	10.3	10.5	34.4	6.8
81-90 Pct	7.4	8.3	9.6	10.0	10.4	41.5	9.3
91-95 Pct	6.5	7.4	8.9	9.6	10.2	56.8	14.4
96-99 Pct	4.4	5.2	6.4	6.8	7.7	74.4	21.6
Top 1 Pct	1.3	1.5	1.7	1.6	2.1	71.2	27.1
All H'hlds	6.5	7.2	8.2	8.5	8.9	36.0	9.0

Source: 1992 Green Book (Table 29, pp. 1529) Committee on Ways and Means, U.S. House of Representatives, U.S. Government Printing Office, Washington D.C.: May 15, 1992. Table Source: Congressional Budget Office (CBO).

The social security system can be characterized in one of two ways, either as a welfare system or as a pension fund. To the extent that the relation between current contributions and future benefits is uncertain, social security can be viewed as a welfare system. As such, contributions to the system are properly considered to be taxes, and benefits are subsidies (i.e., transfer payments or negative taxes).

In contrast, the social security system can be viewed as a defined benefit pension plan, where the federal government is the trustee of the plan.[17] This model is more consistent with the notions held by most citizens, where households earn benefits by making contributions to the plan throughout their working life.[18] Further, like virtually all pension plans, the amount contributed to the plan is based on a percentage of the contributor's income, with a maximum contribution limit.

The benefits received by retirees from social security are based on their individual history of earnings. However, unlike most pensions, the benefit formula is skewed toward those persons with the lowest income histories (i.e., the "replacement rate" declines as the contributor's earnings history rises). Further, married contributors can receive an additional spousal benefit that is equal to 50% of the primary worker's benefit. Thus, the benefit formula is pro-poor in its effect, providing higher rates of return on the contributions for low-income, single-earner, married couples, relative to high-income, single males. For example, social security replacement rates

[17] This is true with respect to the old age or retirement portion of the system. The health insurance portion of the plan, which is growing the fastest, is more like a pure tax that is proportional for the first $125,000 of personal-service income (thus, it is regressive with respect to total income). The benefits from the health insurance portion of the plan, however, are received on a per-household basis. Thus, the health insurance portion of social security, like the retirement portion, is pro-poor in its effect.

[18] Social security also provides certain insurance benefits for disability and the early death of a contributor. However, these benefits are relatively small in comparison to the retirement provisions. For example, in 1990, total disability insurance beneficiaries comprised 10.7% of total beneficiaries and disability benefits comprised 9.1% of total benefits (1992 Green Book).

for low, average, and maximum earners who retired in 1977 were 61.0%, 44.8%, and 33.5%, respectively. After the 1983 amendments to social security were enacted, these rates became even more pro-poor, with persons retiring in 1989 having replacement rates of 57.9%, 41.6%, and 24.1%.

To provide an estimate of the rate of return various contributors can expect from their participation in social security, Boskin, Kotlikoff, Puffert, and Shoven (1986) show that for persons entering the workforce in 1945 (i.e., current retirees), low-income, single-earner couples can expect a 3.50% real rate of return on their social security investment, while high-income, single males will suffer a -0.79% real rate of return on their contributions.[19] While the real rates of return for current contributors are substantially below those of current beneficiaries, persons with below-average earnings histories will, in the aggregate, continue to receive more in real social security benefits than they have paid in contributions.

In its computations of effective tax rates, the CBO considers social security to be a welfare system. Thus, it includes the contributions made by the employee and employer as taxes (the employer-paid portion of the tax is also included in household income) and records the benefits received as income earned by the recipients. Using this accounting method, the CBO shows that the relation between taxes and household income is concave with respect to income, rising from 7.6% for the households in the lowest income quintile, to 10.5% for households in the fourth income quintile, and then falling to 2.1% for households with the highest 1% of income. A similar, but somewhat less dramatic pattern existed in 1977.

The effective social security tax rates computed by the CBO illustrate the fundamental features of the social security system described earlier. First, the through-time increase in overall effective social security tax rates reflects the maturation of the system and the decision to create reserves for the baby-boom generation. Second, the concave relation between taxes and income reflects the dollar limitation on the amount contributed to the system and the fact that social security contributions relate to personal-service income, which comprises a smaller proportion of total household income for high-income households.

Unfortunately, however, the CBO's method of accounting for the social security system is fundamentally flawed in at least two ways. First, it errs when it accounts for social security benefits as income. Under a welfare system, any government transfer payment is a negative tax (i.e., subsidy) and should be accounted for as such. Considering such amounts to be income results in a double-counting of income and an overstatement of taxes paid. For example, consider a tax and expenditure system where a taxpayer pays all of her/his income, say $100, to the government as a tax and then receives the entire amount back as a subsidy. Under the CBO's method, the taxpayer would have $200 of income and a tax rate of 50%. In reality, the taxpayer only has $100 of income and a net tax rate of 0%.[20]

Second, the characterization of social security as a welfare system is the worst case scenario for current contributors. That is, it implicitly assumes that current contributors do not have any claim to future benefits. Thus, to the extent that the government does honor its pledge to pay benefits on the basis of the current benefit formula, the CBO's method of analysis substantially understates the progressivity of the government's tax and expenditure system because the present value of benefits (which, as discussed earlier, are heavily pro-poor) is not currently accrued.

As an alternative to considering social security as a welfare system, it can be considered as a pension fund. This model assumes that the federal government meets its social security obligations, an assumption that is consistent with the 1983 amendments to the social security system which expressly provide that additional contributions be made so that an actuarially-based reserve fund is established.

Under the pension approach, household taxes are computed by comparing the present value of social security benefits earned with the contributions made by each household. The calculations for this approach have been performed by Outslay and Wheeler (1983), Browning (1985), Burkhauser and Turner (1985), Boskin, Kotlikoff,

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[19] Similar calculations are shown in the 1992 Green Book in Tables 21-27 on pages 1258-1269.

[20] In the 1992 Green Book, the CBO performed calculations of the relation between transfers, net of taxes, and income for the years 1977 and 1989. The results show a highly progressive net transfer system that has become somewhat less progressive over time. Unfortunately, the calculations still appear to be incorrect in that, according to the discussion, the CBO simultaneously classified the transfer payments as negative taxes and income. Thus, persons receiving benefits are erroneously included in higher income quintiles. See Tables 36 and 37, pp. 1547 and 1548, and the discussion on pages 1505 and 1506 of the 1992 Green Book.

Puffert, and Shoven (1987), the Congressional Research Service (1992 Green Book, pp. 1258), and Feldstein and Samwick (1992). Under this method, income inequality increases because the benefits received by retirees are accounted for as returns of capital, instead of income. However, the progressivity of the tax system increases dramatically since the contributions to the social security system are considered to be investments (savings), instead of taxes. Further, to the extent that the redistributive aspects of the social security benefit formula are shown as taxes paid by households with higher personal-service income to those with lesser personal-service incomes, tax progressivity increases still further (Feldstein and Samwick, 1992).

Federal income tax - individuals

The federal income tax on individuals provided 44% of total federal revenues in 1990, down from 45% in 1980. This tax is the most progressive federal tax (of those included by the CBO) with effective tax rates in 1993 of -3.2% for households in the lowest income quintile, rising to 22.0% for households with the highest 1% of income. This range of effective income tax rates, 25.2 percentage points, is nearly as great as in 1977, when it was 25.8 percentage points, and much more than in 1985, when it was 19.7 percentage points. For households with incomes between the two extremes, effective income tax rates have fallen over the 1977-93 period, though not by as much as that experienced by the households with the lowest and highest incomes. These data are shown in Table 15.

TABLE 15
FEDERAL INCOME TAX FOR INDIVIDUAL TAXPAYERS FOR 1977 TO 1993

Income Q'tile	1977	1980	1985	1989	1993	% Chg 77-93	% Chg 85-93
Lowest	-0.6%	-0.5%	-0.2%	-1.8%	-3.2%	NA	NA
Second	3.4	4.5	3.8	3.2	2.8	-18.6	-27.8
Third	6.9	7.9	6.7	6.5	6.2	-9.4	-7.4
Fourth	9.6	11.0	9.3	8.9	8.7	-8.8	-5.6
81-90 Pct	12.0	13.5	11.3	11.3	11.2	-7.2	-1.2
91-95 Pct	13.9	15.3	12.7	13.1	13.2	-4.8	4.1
96-99 Pct	16.6	18.4	15.0	16.2	16.1	-3.1	7.2
Top 1 Pct	25.2	23.9	19.5	20.7	22.0	-12.7	12.6
All H'hlds	11.1	12.3	10.7	11.0	10.9	-1.2	2.3

Source: 1992 Green Book (Table 29, pp. 1529) Committee on Ways and Means, U.S. House of Representatives, U.S. Government Printing Office, Washington D.C.: May 15, 1992. Table Source: Congressional Budget Office (CBO).

The apparent decrease in tax progressivity is due to a combination of three factors: (1) income mismeasurement, (2) demographic changes, and (3) tax code (rate) changes. First, as discussed earlier, the CBO's definition of income is incomplete, in that it omits some important items of income and mismeasures other included items. For example, the value of in-kind benefits, pension contributions, and implicit taxes are omitted from the CBO's calculations. To the extent that these omissions from income are relatively more important to middle-income

households, their incomes are relatively understated, and their effective income tax rates are overstated.[21] In addition, to the extent that the incomes of higher-income families are overstated, because no adjustments are made for inflation-induced capital gains or regional cost of living differences, their effective income tax rates are understated. Finally, the effective income tax rates of lower-income households are vastly overstated, to the extent that government transfers (other than social security benefits) are misclassified as income, instead of negative taxes.

The second factor, demographic changes, also causes the reported degree of progressivity to change over time, because different household types use different rate schedules in computing their tax liabilities. The differences in filing status affect the reported degree of progressivity for two reasons: (1) unmarried households pay a greater tax at every level of income, and (2) tax liability is relatively insensitive to household size, unlike the income index used by the CBO.

To illustrate the effect of filing status on the effective tax rate of a quintile of taxpayers, the data in Table 16 show the taxable incomes, tax liabilities, and effective income tax rates for households that have income indexes that are equivalent to that of a single person with $25,000 on income. These data indicate that a household's effective income tax rate rises with household size and that unmarried households pay more tax for any given household size.

TABLE 16
EFFECTIVE TAX RATES FOR FAMILIES WITH THE IDENTICAL INCOME INDEX ACROSS FAMILY SIZE AND FILING STATUS

Family Size	1	2	3	4	5
Equivalent Income	$25,000	$32,000	$39,250	$50,250	$59,500
Single Filing Status					
Taxable Income	$20,560	$25,660	$31,010	$40,110	$47,460
Income Tax	$3,505	$4,933	$6,713	$9,898	$12,470
Effective Tax Rate	14.0%	15.4%	17.1%	19.7%	26.3%
Married - Joint Return Filing Status					
Taxable Income	NA	$24,440	$29,790	$38,890	$46,240
Income Tax	NA	$3,544	$4,577	$7,125	$9,269
Effective Tax Rate	NA	11.1%	11.7%	14.2%	15.6%
Head of Household Filing Status					
Taxable Income	NA	$25,660	$31,010	$40,110	$47,460
Income Tax	NA	$4,099	$5,597	$8,294	$10,866
Effective Tax Rate	NA	12.8%	14.3%	16.5%	18.3%

Note: The table data assume the standard deduction and 1987 tax rates. NA = Not applicable.

[21] To the extent that the implicit tax associated with owner-occupied housing is relatively more important to middle-income households, their effective tax rates are understated.

The positive relation between the effective income tax rate and household size occurs because the reduction in taxable income for each additional household member is fixed, and generally much smaller than the increase in income required for the household to have the equivalent income index of the benchmark single person (in 1987 the amount of a personal exemption was $1,900). The effective income tax rate also varies across filing status for a given household size, with singles having higher tax rates than heads of households, and married couples having the lowest effective income tax rates.

Given the dependence between and among effective income tax rates, filing status, and household size, the effective income tax rate for a quintile of households is a function of the relative proportions of married and unmarried households that make up that quintile. This may have had an important impact on the reported change in tax progressivity because the proportion of returns using the married filing joint status fell from 61.5% in 1967, to 58.1% in 1977, to 44.6% in 1987.

The third reason for the decrease in income tax progressivity is that tax rates were reduced throughout the period. While these reductions were essentially proportional for all income classes, those households that did not have sufficient income to pay income taxes did not (directly) benefit from these reductions. Thus, tax rate reductions decreased tax progressivity during the 1980s as the maximum tax rates fell from 70% in the 1970s, to 31% at the end of the 1980s.

Summary

The review of the empirical procedures used by the CBO to calculate effective tax rates indicates that it significantly understates the extent of tax progressivity, and/or overstates the decline in progressivity for three reasons. First, the CBO considers social security to be a welfare system, which implicitly assumes that contributors do not have any claim to future benefits. Second, the CBO incorrectly accounts for social security benefits by labeling them as income, instead of a negative tax. Third, the CBO omits implicit taxes from household tax liabilities, an omission that is estimated to have a dramatic effect on the extent of tax progressivity. Further, because the CBO fails to control for changes in the proportions of households filing joint returns, it is impossible to determine the extent to which any change in tax progressivity is the result of changes in tax law, or changes in demographic diversity. Because of these shortcomings in its empirical procedures, the CBO's estimates of tax progressivity are not reliable estimates of the actual distribution of tax burdens.

SUMMARY AND POLICY RECOMMENDATIONS

This paper reviewed the empirical methods used by the CBO to conduct tax distribution studies and found that the CBO's measures of income inequality and tax progressivity are not unbiased estimates of the actual distributions of income and taxes. Instead, the CBO's methods were found to produce results that systematically overstate the extent of income inequality and understate the degree of tax progressivity. Further, because of weaknesses in its experimental design, users of CBO tax distribution studies are not able to make valid inferences about the causes of through-time changes in income inequality or tax progressivity.

With respect to income inequality, the CBO's definition of income is fundamentally flawed in at least four ways. First, by failing to use a comprehensive definition of economic income, the CBO's results are sensitive to the changes in income mix that occurred during the 1980s. Second, by not correcting for the effects of inflation and by ignoring implicit taxes, the CBO misstates the gains and losses derived from property transactions. Third, because the CBO does not adjust household income for differences in regional costs of living, its measure of income does not reflect purchasing power (i.e., ability to pay). Fourth, by using an annual measure of income, an inconsistent sample of households, and a single base year, the CBO's results do not control for the income mobility experienced by households over time, the changing proportions of different household types, or the non-synchronous pattern of economic growth that occurred across the various regions of the United States. Because these measurement errors are neither small, random, nor stable, they cause the CBO to systematically overstate the extent of, and change in, income inequality.

Regarding the relation between taxes and income, the CBO's estimate of tax progressivity is also fundamentally flawed in at least three ways. First, it measures social security taxes in the most regressive manner possible by assuming that contributing households have no claim to future benefits. Second, within the welfare model of social security, the CBO mislabels the benefits received by retiree households as income, instead of negative taxes. Third,

the CBO omits implicit taxes from household tax liabilities, an omission that substantially understates the tax burden of households that own and occupy a residence. Further, because the CBO fails to control for changes in the proportions of married households, it is not possible to identify the causes of through-time changes in tax progressivity. As in the case of its measure of income, the CBO's errors in measuring taxes are not small, random, or stable over time.

POLICY RECOMMENDATIONS

In its description of the empirical procedures used to conduct tax distribution studies, the CBO acknowledges the importance of the assumptions that underlie the definitions of income and taxes.

> The results of this study necessarily depend on assumptions that are subject to challenge. There is no definitive way in which to assign combined federal taxes to particular family income groups. Neither is there a definitive way in which to measure family incomes. Both require methodological judgments and compromises that bear critically on the results obtained. (CBO, 1987, pp. 2)

Consistent with the CBO's observation, and with the understanding that there is no single right way to measure income and taxes, the following policy recommendations are suggested.

(1) A more comprehensive definition of household income that includes in-kind benefits should be employed.

(2) Property gains and losses should be computed on an inflation-adjusted basis and implicit taxes should be included in income and taxes.

(3) Household income should be adjusted for regional costs of living.

(4) A consistent panel of households should be included in the sample so that multi-year measures of income inequality and tax progressivity can be measured.

(5) Data for years before 1977 should be developed so alternative benchmark years are available.

(6) The sample of households should be balanced to control for through-time changes in demographics. Households should be controlled along at least five dimensions: (1) household size, (2) age of household head, (3) number of earners and work hours, (4) household filing status, and (5) education of household head.

(7) Social security should be accounted for under both the welfare and pension models. Within the welfare model, benefits received should be labeled as negative taxes rather than income. The pension model should also be used to compute the net benefit or cost of social security to each household on an annual basis.

(8) Consideration should be given to the inclusion of foreign taxes and state and local income taxes, and the allocation of government services beyond social security and transfer payments (e.g., national defense, criminal justice, etc.).

By employing these alternative empirical procedures, tax distribution studies will not only report less biased and more reliable estimates of income inequality and tax progressivity, but they will also enable policy makers to identify the factors that cause the distributions of income and taxes to change. Without implementing such procedures, it is unlikely that reliable results will be produced and useful policy recommendations can be made.

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TAX FOUNDATION BACKGROUND PAPER #1

Record-Keeping Requirements Affecting Foreign-Controlled U.S.-Based Corporations and the Response of Foreign Governments

By:

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October 18, 1991

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ABSTRACT

Current U.S. tax policy towards U.S.-based foreign-controlled entities seeks to make such entities more accountable to U.S. tax authorities. Major tax acts since the Tax Reform Act of 1986 have sought to combine rigid record-keeping requirements with stiff penalties for noncompliance. Much controversy, however, surrounds the implementation of such provisions. One recent study indicates that Congressional fixation on foreign-controlled entities in the U.S. may be based on data of questionable validity. Many American and foreign critics are concerned about the potential long-term economic and political effects of a policy that is adverse to U.S.-based foreign-controlled entities. These effects include reduced foreign investments in the U.S. and the possibility of retaliatory measures by foreign tax authorities. Korean authorities recently proposed rules mirroring the U.S. legislation. This may be an indication of a possible trend towards retaliation by foreign trading partners.

RECORD-KEEPING REQUIREMENTS AFFECTING FOREIGN-CONTROLLED U.S.-BASED CORPORATIONS AND THE RESPONSE OF FOREIGN GOVERNMENTS

INTRODUCTION

In recent years, foreign-controlled businesses operating in the United States have come under increasing levels of scrutiny with respect to allegations of tax avoidance practices. Members of Congress have issued statements and press releases indicating that U.S. companies controlled by foreigners have experienced significant increases in assets and revenues while showing declines in federal income tax payments.[1]

Although the approach has been somewhat piecemeal, recent tax acts in the U.S. have sought to increase the accountability, and to reduce the tax avoidance opportunities, of foreign-controlled entities in the United States.[2] Critics argue that Congress may be inviting retaliation by foreign taxing authorities. This paper reviews the alleged tax avoidance practices targeted by recent U.S. tax legislation. The final section of the paper contains a discussion of reactions from both foreign and domestic critics.

THE DRIVE FOR ADDED ACCOUNTABILITY

The U.S. Treasury Department's most recent data for the 1979-1987 taxable years show that U.S.-based foreign-controlled businesses in the U.S. have significantly higher costs of goods sold and overhead expenses as a percentage of revenues than comparable U.S.-controlled businesses.[3] As a result, U.S.-based foreign-controlled entities appear to have a lower effective tax rate than comparable U.S.-controlled entities.

The much cited recent data for 1986 in the Internal Revenue Service's *Statistics of Income* (SOI) shows that collectively, U.S.-based foreign-controlled taxpayers reported over $500 billion in gross revenues. Table 1 shows that this produced taxable income of $12.7 billion offset by losses of $14.3 billion resulting in an aggregate deficit of approximately $1.5 billion.[4] Congressional sources misreported the negative taxable income as a negative tax liability of $1.5 billion. The same SOI 1986 data, nevertheless, showed collective federal tax liabilities of some $3 billion from those companies that had taxable income, a fact usually omitted from Congressional and press reports.

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[1] Committee on Ways and Means Before the Sub-Committee on Oversight, 101st Congress (Tuesday, July 10, 1990).

[2] Public Law 101-508 (November 5, 1990).

[3] Office of Tax Analysis.

[4] Committee on Ways and Means Before the Sub-Committee on Oversight, 101st Congress (Tuesday, July 10, 1990); Office of Tax Analysis.

TABLE 1

NET INCOME AND U.S. TAX LIABILITY FOR FOREIGN-CONTROLLED DOMESTIC ENTITIES

($billions)

	1983	1984	1985	1986	1987
Net Income					
Net income for firms with income	12.4	15.4	14.5	12.7	19.8
Net deficit for firms with deficit	-10.6	-10.8	-11.5	-14.3	-14.2
Combined net income less deficits	1.8	4.5	3.0	-1.5	.6
Net U.S. tax liability	3.4	0.5	3.6	3.0	4.2

Source: Smith, Linden C., Policy Economics Group, KPMG Peat Marwick, *Review of Internal Revenue Service Statistics on Taxable Income and Tax Liability of Foreign-Controlled Domestic Corporations.*
Note: Published data on FCDC available from the IRS cover the period 1983 through 1985. Unpublished data on FCDC was obtained from the IRS for this report. FCDCs account for approximately 1 percent of all active corporations filing income tax returns with the IRS and about 5 percent of total assets. They tend to be concentrated in 3 broad industry groups: (a) manufacturing; (b) wholesale and retail trade; and (c) finance, insurance, and real estate.

Indeed, a recent study raised questions about the wisdom of using a single year's tax data as a guide for formulating tax policy.[5] This study showed that for 1987, the aggregate figures produced a net positive income figure of $5.6 billion with a corresponding increase in tax liability to $4.2 billion. Based on a five-year analysis, the above SOI figure for 1986 seems an aberration. The negative numbers may, in fact, be partly due to the drastic decline in the value of the dollar *vis a vis* foreign currencies that took place in 1986.

In fact, Table 2 indicates that for the period 1983 through 1987, the effective income tax rates for U.S.-based foreign-controlled corporations were similar to that of all U.S.-based corporations. However, U.S. policymakers appear to be more interested in how the basis of comparisons are determined rather than the raw numbers.

[5] *Review of Internal Revenue Service Statistics on Taxable Income and Tax Liability of Foreign Controlled Domestic Corporations*, by Linden C. Smith of KPMG Peat Marwick's Policy Economics Group.

TABLE 2

COMPARISON OF EFFECTIVE INCOME TAX RATES USING NET WORTH AND TOTAL ASSETS

	1983	1984	1985	1986	1987	1983-87 Average
Effective U.S. Tax Rate						
Total Assets						
FCDC[a]	0.6	0.8	0.5	0.4	0.4	0.5
AOC[b]	0.5	0.6	0.5	0.5	0.5	0.5
Net Worth						
FCDC	2.5	2.9	2.0	1.4	1.6	2.1
AOC	2.0	2.2	1.9	2.1	2.1	2.1
Effective Worldwide Tax Rate[c]						
Total Assets						
FCDC	0.8	1.0	0.7	0.5	0.5	0.7
AOC	0.7	0.8	0.7	0.7	0.7	0.7
Net Worth						
FCDC	3.0	3.4	2.4	1.6	1.9	2.6
AOC	2.7	3.0	2.7	2.7	2.7	2.8

[a] FCDC: Foreign-Controlled Domestic Corporations.

[b] AOC: All other corporations. The AOC designation applies to active corporations filing income tax returns with the IRS exclusive of FCDC and S-corporations.

[c] The effective world-wide tax rate computation assumes that reported foreign tax credits claimed are equal to foreign taxes paid. To the extent firms are in an excess credit position the world-wide effective tax rate may be understated.

Source: Smith, Linden C., Policy Economics Group, KPMG Peat Marwick, *Review of Internal Revenue Service Statistics on Taxable Income and Tax Liability of Foreign-Controlled Domestic Corporations.*

OVERVIEW OF RECENT TAX LEGISLATION

The Tax Reform Act of 1986 (TRA'86) introduced several changes designed to enhance the federal tax accountability of U.S.-based, foreign-controlled entities. The U.S. Congress continued this trend in the Technical and Miscellaneous Revenue Act of 1988, Omnibus Budget Reconciliation Act of 1989 (OBRA'89) and Omnibus Budget Reconciliation Act of 1990 (OBRA'90). To date, U.S. tax policy regarding foreign direct investment in the U.S. has focussed primarily on: 1) so-called "earnings stripping" from U.S. subsidiaries through supposedly excessive interest paid on related foreign company debt, 2) allocating income or, in some cases, apportioning profits from cross border (related company) transactions, and 3) increasing the power of the Internal Revenue Service (IRS) to scrutinize foreign records and conduct audits of related foreign companies.

New Provisions Under OBRA'90

The primary policy objectives of OBRA'90 with respect to U.S.-based foreign-controlled corporations are found in two major provisions. First, new requirements concerning information reporting and record maintenance were added in Internal Revenue Code (IRC) Section 6038C. Second, the law suspends the statute of limitations during the pendency of court proceedings to enforce a "designated" summons. This also applies to domestically owned companies.

Under the newly added IRC Section 6038C, all foreign corporations that conduct a trade or business in the U.S. must comply with the information reporting and record-keeping requirements. In particular, IRC Section 6038C applies the information reporting and associated requirements of IRC Section 6038A to any taxable year for which the statute of limitations has not expired. For most tax returns, the statute of limitations runs for a period of three years (plus extensions) from the due date of taxpayers' returns.[6]

IRC Section 6038C and the regulations thereunder cover, but are not be limited to, information regarding the allocation and apportionment of deductible expenses to the U.S. branch of a foreign corporation. These provisions also are applied to any foreign corporation that conducts a trade or business in the U.S. (such as through a branch) and are extended to all tax-related items, not only transactions with related parties.

OBRA'90 also specifies that the monetary penalty provisions of IRC Section 6038A(d) apply to failures to furnish information or to maintain appropriate records. For example, if a reporting corporation engaged in a U.S. trade or business fails to furnish information required by the Secretary of the Treasury or fails to maintain other appropriate records, the corporation will be assessed a penalty of $10,000 per taxable year in which a failure occurs.

Moreover, if the Secretary of the Treasury notifies a reporting corporation of such a failure, and if the failure continues for more than 90 days after the notification, an additional $10,000 penalty will be assessed for each 30-day period during which the failure continues. However, a reasonable cause exception similar to that contained in IRC Section 6038A(d)(3) applies. The following example demonstrates the application of the monetary penalty for non-compliance:

> Example: Machine Tools International (MTI) is a calendar year U.S.-based foreign-controlled corporation with income that is effectively connected with a U.S. trade or business. In 1990, MTI failed to file the required Form 5472 information return. The initial $10,000 fine would be assessed by the due date of the return (plus any extensions). If MTI failed to file an extension and was notified of its failure to file Form 5472 on May 15, 1991, another $10,000 penalty would be assessed for every 30-day period that it did not file the required return. MTI could possibly take advantage of a "reasonable cause exception," however, if it were unable to determine some of the required information for Form 5472.

OBRA'90 also requires that a U.S. corporation must be designated to act as a limited agent in the U.S. for each related foreign corporation. Such a United States-based agent will, among other

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[6] The statute is extended to six years in cases of substantial omission, specifically, an amount in excess of gross income reported, and in cases of fraud, the statute does not expire.

things, be responsible for providing certain records to the Internal Revenue Service.[7] Failure to designate a reporting corporation as its agent can result in the application of the non-compliance rule in computing tax liability for taxable years beginning after July 10, 1989. As a result, the IRS would be able to summarily deny deductions on cost of goods sold on a discretionary basis.

OBRA'90 permits prompt judicial review of a summons,[8] as in the case of a summons concerning a related party transaction of a 25-percent foreign-controlled United States corporation. Taxpayers receiving summons related to the examination of a reportable transaction are allowed to petition in a federal court to quash the summons. Such an opportunity ensures that the non-compliance rules under IRC Section 6038C are applied only when the summons is properly issued by the Internal Revenue Service. The petition should be made no later than the 90th day after such summons is received.

TREASURY REGULATIONS

The most problematic issue for the U.S. Treasury in promulgating regulations under IRC Section 6038A has been the determination of what specific records and information to mandate. The Treasury must balance the desires of U.S. tax auditors with the need to conform with worldwide tax audit standards. The diversity of accounting principles used by trading nations raises the possibility that some records or information requested may not be readily available or easily producible.

Recently, the U.S. Treasury released final regulations under IRC Sections 6038A of the Internal Revenue Code.[9] These regulations modified some of the more controversial provisions earlier proposed and waived the record maintenance requirements for many more entities. The primary concern of the regulations appears to be the enforcement of IRC Section 482.[10]

Many believe that the enforcement of IRC Section 482 is often frustrated by the inability to obtain books and records from foreign affiliates. Moreover, it is widely believed among U.S. policymakers that foreign-controlled U.S. corporations are understating their taxable income due to improper pricing on intercompany transactions with their foreign affiliates.[11] The primary vehicle for this alleged *understatement* of income is the *overstatement* of the price of imported inventory.

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[7] IRC Sections 7602, 7603, and 7604.

[8] During an audit, the IRS frequently requests informally that the taxpayer provide additional information necessary to arrive at a fair and accurate tax audit adjustment, if an adjustment is warranted. Not all taxpayers cooperate by providing the requested information on a timely basis. In some cases, the IRS is compelled to seek information by issuing an administrative summons.

[9] DTR No. 116, Internal Revenue Service Final Regulations (Treasury Decision 8353), Information with Respect to Certain Foreign-Owned Corporations, filed June 14, 1991.

[10] Section 482 permits the IRS to apportion or allocate gross income, deductions, and credits among or between related organizations owned or controlled by the same interests.

[11] Statement of Patrick G. Heck, Assistant Council, House Ways and Means Committee (July 10-11, 1990); *Tax Notes International*, 90: 29-21 (Acc Serve and microfiche: Doc. 90-4765).

The case of Toyota Motor Corp.[12] has been cited as an example of how difficult it can be to obtain information from foreign affiliates.[13]

Notwithstanding the problems facing the IRS in enforcing IRC Section 482, it seems questionable whether the record-keeping regulations are appropriate in achieving better enforcement. U.S. trading partners had earlier asserted that the regulations,[14] in proposed form, extended an extra-territorial U.S. jurisdiction that is unprecedented under modern international law.[15] Some of these concerns have been addressed by the final regulations; however, many areas of controversy still exist.

Under the proposed regulations, many affected companies estimated that they would have spent a minimum of 30 to 100 hours on the record maintenance requirements alone.[16] To address this concern, the final regulations include an all inclusive safe-harbor rule which provides that an individual taxpayer or foreign person is required to maintain only those records that are relevant to its particular industry or business and to the U.S. taxation of transactions with foreign related parties. The safe-harbor rule limits the number of potential profit and loss statements or other documents that a reporting corporation might otherwise be required to maintain. As such, there is no requirement for the maintenance of all the documents listed. The safe harbor simply provides a list of documents from which the IRS can request information.

Without a safe-harbor rule to establish which documents are material, any product or service sold or provided within the U.S., irrespective of its economic importance to the reporting corporation, might be the subject of a profit and loss statement. Moreover, the final regulations also point out that profit and loss statements will not be used to determine the precise U.S. tax liability of reporting corporations.

Another concern with the record-keeping requirements under the proposed regulations was that they applied to all transactions, not just to reportable transactions. Under the final regulations, all records that may be relevant to the tax treatment of transactions between a reporting corporation and any foreign related party are subject to the record-keeping requirements. An important exception was incorporated, however, for certain small corporations.

The new small corporation exception exempts entities with less than $10 million in U.S. gross receipts from the record maintenance and authorization requirements of Treasury Regulation Sections 1.6038A-3 and 1.6038A-5. Corporations that make less than $5 million of payments to foreign-related parties (or receive less than $5 million in payments therefrom) on related party transactions are also exempted from these provisions if the value of such transactions is less than 10 percent of U.S. gross income. These corporations are, nevertheless, subject to the information

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12 United States of America, v. Toyota Motor Corporation, et al, 561 Supp. 354; 83-1 U.S. Tax Cases (CCH) p. 9302, April 8, 1983; In the Toyota case, the IRS requested 15 different documents and the Appellate Court denied all except one of the requests on the grounds that the requests were too vague. In particular, the Court denied the request for unit selling prices.

13 *Senate Report for Revenue Reconciliation Act of 1989* (101st Congress 1st Sess), p. 112.

14 55 Federal Report 50706, December 10, 1990.

15 Many of the major industrialized nations, such as the U.K., France, and Japan, charge that the new record-keeping requirements are in violation of existing tax treaties. In this regard, the regulations would seem to increase the probability of retaliation by complaining nations.

16 Based on a letter from Stephan P. Hannes of Deloitte & Touche to the IRS (February 11, 1991).

reporting requirements of Treasury Regulation Section 1.6038A-2 and the general record maintenance requirements of IRC Section 6001.

Another area of concern with the record-keeping requirements under the proposed regulations was that they ignored non-discrimination clauses under existing tax treaties. Under typical tax treaties, foreign-based subsidiaries are not subject to discrimination by host countries. Most tax treaties recognize that parent corporations and their affiliates normally conduct transactions under arm's-length pricing principles. Likewise, under most tax treaties additional information for scrutinizing inter-country transactions is obtained through mutual assistance between national governments.

To address this concern, the final regulations provide that a treaty exchange of information agreement (TEIA) provision will be used ahead of a summons under IRC Section 6038A and the associated regulations. However, the information sought must be obtained on a timely and efficient basis. Moreover, the absence or pendency of a treaty or TEIA request may not be asserted as grounds for refusing to comply with a summons or as a defense against the assertion of the noncompliance penalty adjustment under Treasury Regulation Section 1.6038A-7.[17]

In response to numerous concerns that the annual election to maintain records outside the United States was too burdensome, the final regulations provide that records may be maintained outside the United States (without making an election). However, in situations in which documents are kept outside the U.S., IRS requests for documents must be satisfied within 60 days (90 days for profit and loss statements) and be translated within 30 days of the request. Alternatively, the taxpayer can move the documents to the U.S. within 60 days and provide the IRS with details about the location and the custodian of the records. Finally, the rules describing how the record maintenance requirements are to be applied to banks and other financial institutions will be coordinated with future regulations under IRC Section 6038C.

Problems with the Treasury Regulations

The regulations depart substantially from the statute by requiring the actual preparation of profit and loss statements. In this regard, the U.S. Treasury has exercised its power of issuing legislative regulations by significantly expanding the scope of the statute.[18] The result is the imposition of overly complex and cumbersome provisions that will impose significant compliance burdens on affected companies.

Of the final regulations, the most problematic are those that require the creation and maintenance of records for preparing income statements. In this regard, the regulations retain the three-part test for determining the materiality of profit and loss statements. The test is complex and it affects a wide scope of documents that will require significant time and effort.

The final regulations cover documents of any related party involving transactions for goods or services with any related or unrelated party. This list of documents is all encompassing and will no doubt result in much disagreement between the IRS and taxpayers as to what documents are relevant.

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[17] Under Treas. Reg. Sec. 1.6038A-7, the amount of deductible expenses or property acquisition costs to or from a related corporation may be determined in accordance with the sole discretion of the District Director.

[18] Treasury Regulation Section 1.6038A-3(c). The statute made no reference to profit and loss statements.

REACTIONS TO LEGISLATION AFFECTING FOREIGN CORPORATIONS

Recent U.S. tax policy regarding foreign investments in the U.S. has been criticized by both foreign and U.S. constituents. U.S. critics are primarily concerned about the possibility of retaliation against foreign-based U.S. investments and the possibility of a negative impact on foreign investments in the United States. In contrast, foreign critics see U.S. tax policy as a blatant case of treaty override. The breadth of this concern is expressed by a number of our trading partners.

BRITISH RESPONSE

The United Kingdom is by far the largest investor in the United States, with direct investment of $119.1 billion (see Tables 3 and 4). As such, the U.K. was concerned that the information requirements added under IRC Section 6038A would be extended retroactively to cover all tax years under IRS audit or subject to audit. In particular, the U.K. holds that the information provisions constitute an unjustifiable element of extra-territoriality. OBRA'89 imposed provisions requiring certain records held in the U.K. to be made available to U.S. authorities and requiring certain U.K. companies to name United States-based affiliates as their agents for receiving information demands from the Internal Revenue Service.

TABLE 3

FOREIGN DIRECT INVESTMENT IN THE UNITED STATES FOR SELECTED COUNTRIES, 1989

Country	$Billions	Percent
All Countries	$400.8	100.0
Europe	262.0	65.4
European Community	234.8	58.6
United Kingdom	119.1	29.7
Netherlands.	60.5	15.1
Germany	28.2	7.0
Other E.C.	27.0	6.7
Other Europe	27.2	6.8
Japan	69.7	17.4
Canada	31.5	7.9
All Other	37.6	9.4

Source: Russell Scholl, "The International Investment Position: Component Detail for 1989," *Survey of Current Business*, U.S. Department of Commerce, Bureau of Economic Analysis, Vol. 7, No. 6, June 1990.

TABLE 4

U.S. DIRECT INVESTMENT POSITION ABROAD AT YEAR END FOR SELECTED COUNTRIES, 1989

Country	$Billions	Percent
All Countries	$373.4	100.0
Europe	176.7	47.3
European Community	150.0	40.2
United Kingdom	60.8	16.3
Netherlands	17.2	4.6
Germany	23.1	6.2
Other E.C.	48.9	13.1
Other Europe	26.7	.1
Japan	19.3	5.2
Canada	66.8	17.9
All Other	110.6	29.6

Source: Russell Scholl, "The International Investment Position: Component Detail for 1989," *Survey of Current Business*, U.S. Department of Commerce, Bureau of Economic Analysis, Vol. 7, No. 6, June 1990.

The Director General of the Confederation of British Industry also maintains that both OBRA'89 and OBRA'90 are extra-territorial.[19] He warned that these two pieces of legislation could seriously damage future investment and trade between the United Kingdom and the United States. Specifically, there was a fundamental objection to the record maintenance requirements of IRS Section 6038A. The Director General argued that the information article in the U.S./U.K. tax treaty already sets the parameters mutually agreed upon between the two countries for the exchange of information about their respective taxpayers. Yet, the new IRC Section 6038A unilaterally imposes additional record-keeping requirements reaching, potentially, far beyond what the treaty agreement contemplates.

According to the Director General, IRC Section 6038A makes a mockery of the treaty article since the article is made obsolete from the U.S. standpoint. Such is the case, even though the treaty continues to set limits on the information that U.K. authorities can obtain about U.K.-based U.S.-controlled companies. Finally, the Director General stated that the present balance between the U.K. and the U.S. will be destroyed and can only be restored by the unilateral enactment of corresponding legislation in the United Kingdom.

At the very least, the U.K. was hoping that a full and all-embracing country-based exception would apply to the United Kingdom. The Director General reiterated the concern about the possible

[19] John M.M. Banham is the Director General of the Confederation of British Industry (CBI), Publication date July 24, 1990. CBI is Britain's largest national business organization representing 250,000 companies in all sectors of the economy, many of whom have major interests in the United States.

effects of the U.S. legislation. Moreover, he stated that as new pieces of adverse legislation appear, a consensus among European governments to pass retaliatory legislation may soon develop.

GERMAN RESPONSE

At a hearing before the U.S. Ways and Means Committee, the Fiscal Counsellor for the German Embassy also expressed concerns about the enhanced record-keeping provisions of U.S. tax laws.[20] He stated that Germany understood the United States revenue authorities' desire for strict rules and noted that German law also contains tough record-keeping rules. According to the Counsellor, German rules do not involve foreign parent companies beyond an investigation of the foreign parent's own tax liability in Germany.

The Counselor added that during the past few years, U.S. international tax laws appeared to show a trend of rigid legislation, mitigated by moderate regulations, but ultimately depended on uncertain practical application of the rules. The resulting uncertainty, coupled with high U.S. penalties, played to the advantage of the United States revenue authorities. As such, U.S.-based companies may be inclined to allocate more income to the United States than to European community members.

JAPANESE RESPONSE

Japan seems to be the most affected with respect to tax audits of transfer prices. For example, U.S.-based subsidiaries of three leading Japanese electrical manufacturers, Matsushita Electric Industrial Co., Ltd, Hitachi, Ltd, and Toshiba Corporation have been subjected to tax audits by the IRS on suspicion that they have underestimated U.S. taxes by manipulating transfer prices. In response to these investigations, Hitachi and Matsushita are urging the Japanese Government to talk with the U.S. tax authorities about setting common rules for the enforcement of transfer prices on trans-border transactions between the U.S. and Japan. Matsushita believes the question boils down to revenue sharing for corporate profits arising from trans-border transactions between U.S. and Japan.

This belief is shared by Japanese academics who recently stated that Japan and the U.S. are fighting for the huge tax revenues from multinational companies.[21] At issue are allegations by the U.S. tax authorities that from 1984 through 1987, U.S.-based Japanese companies vastly under-reported their taxable income in the United States. The Japanese companies have denied the allegations, and some have charged that the debt-strapped U.S. is unfairly targeting their firms. So controversial has the issue become that a former U.S. Treasury Department official[22] recently stated that for most Japanese firms operating in the U.S., it is a question of when, not if, they will be audited and investigated by the Internal Revenue Service.

Some Japanese firms argue, however, that U.S. transfer pricing regulations make little sense. Under U.S. tax law, parent corporations must charge the same prices that their subsidiaries would pay in the open market, or so called "arm's-length prices." The problem, they contend, is how

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[20] Friedman, Jacob, Fiscal Counsellor at the German Embassy, *Tax Notes International* (October 22, 1990), 43-5.

[21] The Nihon Keizai Shimbun, *Japan Economic Journal*, August 11, 1990.

[22] Formerly with the U.S. Department of Treasury, George N. Carlson is now an economist with Arthur Andersen and Co.

arm's-length prices are determined. Japan's Ministry of Finance (MOF) says the sales figure being used by the IRS is an aggregate amount. That means such a figure does not take into account how the performance of individual firms might have skewed the numbers.

The head of MOF's international tax affairs division argued that it seems unfair to step up tax audits on Japanese companies based solely on aggregate figures. The MOF also claims that the legislation targeting foreign affiliates violates the Japan-United States tax agreement, which calls for equal treatment of foreign and U.S. companies. Moreover, they warned that their own tax audits of U.S. firms operating in Japan may well be increased. However, the effectiveness of such measures may be meaningless, because a large portion of U.S. direct investment in Japan is in the form of joint ventures with Japanese companies.

SWISS RESPONSE

During the OBRA'90 Congressional hearings, the Swiss government expressed "great concern" over U.S. tax policy towards U.S. foreign-controlled corporations. In particular, the Swiss contend that U.S. tax policy towards foreign-controlled corporations operating in the U.S. is discriminatory. The Swiss Economic Minister, Jean-Pascal Delamuraz, delivered the message to U.S. officials in Washington D.C. during a meeting in early August 1990.[23]

The Swiss found IRC Section 6038C objectionable to the extent that it expanded the reporting rules of IRC Section 6038A to include foreign branches in the United States. Most, if not all, Swiss banks operate in the United States in branch form. Swiss officials told U.S. tax policy-makers that the administrative burdens imposed by the proposal could "scare-off" potential foreign trading partners contemplating, or increasing, business presence in the United States.

KOREAN RESPONSE

The Korean National Tax Administration (NTA) recently supplemented its transfer pricing tax laws[24] by proposing detailed pricing guidelines for transactions between related parties.[25] This law also contained new reporting requirements for certain Korean corporations. Several features of these proposals resemble IRC Section 6038. The Korean legislation may well be in response to the U.S. legislation.

A Korean corporation that engages in related-party transactions with a foreign corporation must submit a detailed statement to the NTA about these transactions. Additionally, if the Korean corporation's (including foreign invested corporations and branch operations) intercompany transactions exceed five billion won per year, a summarized income statement and a business report of the overseas related party also must be submitted to the NTA. Unlike the U.S. Regulations under IRC Section 6038, these rules do not require such financial statements to be presented in conformity with Korean accounting principles. Moreover, these documents are to be attached to the Korean corporation's annual tax return.

Corporations that do not comply with these documentation requirements are not subject to a monetary penalty, but the failure to comply on a timely basis is the decisive factor in selecting a

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[23] "Switzerland Takes Aim at Foreign Tax Equity Act," *Tax Notes International* (November 1, 1990).

[24] Article 20 of the Corporation Tax Law (CTL) and the Corporate Income Tax Law Enforcement Decree (CITL-ED).

[25] NTA Order No. 1062, January 24, 1990.

company for tax audit. Specifically, if a corporation fails to file the required information with its annual tax return, it will be included in the list of corporations subject to either a detailed document analysis (a desk analysis) or a field audit.[26]

In the event of a desk audit, the following information may be requested by the NTA:

- product price lists;
- product manufacturing costs;
- details of transaction by major product;
- sales contracts; and
- transfer deeds.

Should a field audit occur, documents that may be requested include (in addition to those listed above):

- an organizational chart of affiliated companies;
- data used for determining international transaction prices;
- international pricing policies;
- descriptions of functions performed by affiliates;
- prevalent international industry patterns.

If a corporation, upon audit, fails to submit the requested information, the NTA may recompute the arm's-length price of the related-party transaction(s) by using the method that the NTA considers the most appropriate and may determine or redetermine the corporation's taxable income and associated tax liability.

OFTII RESPONSE

The Organization for Fair Treatment of International Investment (OFTII)[27] also expressed concern about the record-keeping requirements of IRC Section 6038A. OFTII expressed its concern that unreasonable record-keeping requirements that generate inordinate computer and other administrative costs for foreign-owned corporations may be matched, in kind, by foreign taxing authorities [28] OFTII expressed concern that a new industry devoted to compliance could be required as a result of these new regulations. According to OFTII, additional accountants would be needed to create statements, economists would be needed for transactions between related parties, and lawyers would be needed to handle the inevitable appeals and litigation.

U.S. RESPONSE

The American Bankers Association (ABA) members responded to the new reporting rules by arguing that the extension of the statute of limitations for foreign-controlled corporations is inappropriate and should be deleted. The ABA is concerned about the broad and far-reaching effects of these provisions on international tax policy, the international economy, and U.S. tax policy. Separately, the Institute of International Bankers has warned that the extension of the

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[26] Brooks, Janet "Transfer Pricing Regulations Introduced in Korea" *Tax Notes International*, (August 1990), 802-803.

[27] The Organization for Fair Treatment of International Investment is composed exclusively of U.S. subsidiaries of foreign-based multinational companies. OFTII members cover virtually the entire spectrum of modern technology, including automotive, electronics, chemicals, food products, metallurgy and petroleum extractive and refining.

[28] Based on a letter from James M. Carter, executive director of OFTII, to the Internal Revenue Service (March 19, 1991).

record-keeping and reporting requirements to foreign corporations with U.S. branches would needlessly violate U.S. treaty non-discrimination clauses.

CONCLUSION

Current U.S. tax policy towards United States-based foreign-controlled entities seeks to make such entities more accountable to U.S. tax authorities. Current policy partly owes its genesis to the 1960s, but TRA'86 vastly expanded the scope of existing federal tax provisions. Major tax acts since TRA'86 have sought to combine rigid record-keeping requirements with stiff penalties for non-compliance. However, there is much controversy surrounding the implementation of such provisions.

One recent study indicates that Congressional fixation on foreign-controlled entities in the U.S. may be based upon data of questionable validity. The reactions of foreign governments provide evidence that U.S. trading partners think these provisions are unfair. In addition, many foreign and American critics are concerned about the potential long-term economic and political effects of the legislation. These effects include a reduction in foreign investments in the U.S. and the possibility of retaliatory measures by foreign taxing authorities. Korean authorities recently proposed rules mirroring the U.S. legislation. This may be an indication of a possible trend towards retaliation by foreign trading partners.

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