
3 FAMILY ECONOMIC INCOME AND OTHER INCOME CONCEPTS USED IN ANALYZING TAX REFORM

Susan C. Nelson

I. INTRODUCTION

In analyzing the distributional consequences of the Tax Reform Act of 1986 (TRA86), the choice of the income measure by which taxpayers are classified into income groups is an important one. The effects of a particular set of tax changes can look very different under different definitions of income. Similarly, the choice of the population to be examined—taxpayers under current law or all potential taxpayers—and the way people are grouped—by tax units as defined by current law filing rules or by natural family units—also influence the apparent impact of tax reform.

In order to analyze tax changes in a meaningful way, the income classifier should be as consistent as possible with the principles of equity that will be applied to the tax system. The members of each income class should be viewed as being about equally well off, and those in higher-income classes should be considered consistently better off than those in lower income groups.

Since the release of Tax Reform for Fairness, Simplicity, and Economic Growth in November 1984, the Treasury Department has used a measure termed "family economic income" (FEI) in its distributional analyses of tax proposals. This paper explains what is meant by family economic income and how that measure attempts to implement the theoretical concept of income commonly endorsed by economists for use in tax analysis. The paper also discusses some of the limitations of using FEI for public policy analyses. The paper compares family economic income with other measures used in tax analysis for classifying taxpayers according to their relative well-being, specifically adjusted gross income (AGI) and the version of expanded income currently used by the Joint Committee on Taxation (JCT), which is referred to here as

The author is very grateful to Don Fullerton, James Nunns, Eugene Steuerle, Eric Toder, participants of the OTA Work in Progress Seminar Series, and other past and present members of the OTA staff for comments on this paper. James Cilke provided invaluable programming assistance, and Carolyn Greene was extremely helpful in preparing the manuscript and tables.

"modified expanded income" or MEI. Finally, the apparent distributional effects of TRA86 with each of the three income measures as the classifier are presented and examined.

In brief, FEI differs from AGI and MEI in several ways:

- Family. FEI uses the family unit rather than the tax return for analyzing the distributional effects of taxation. Families with nearly equal incomes are more likely to be viewed as being in "equal" circumstances, a requirement for equity analyses, than are tax units with equal incomes. Dependents who file their own tax returns are, for analytical purposes only, combined with those who support them, and the family is put in the appropriate income class.
- Nonfilers. Families and individuals who do not file tax returns under present law are included in analyses based on FEI and MEI, whereas they are usually excluded from analyses using AGI.
- Income. FEI is a comprehensive measure of income, independent of the prevailing tax law. To the extent feasible, it approximates economists' notion of income as consumption plus change in real net worth. It includes many forms of income not reported on tax returns, it measures more accurately other forms of income that are subject to tax, it attempts to avoid double-counting of income, and it adjusts for inflation.

In examining the distributional consequences of the Tax Reform Act of 1986—an act which substantially broadened the tax base and restructured the tax system—family economic income provides a useful standard because of its independence from a particular tax law, as well as its solid conceptual foundation in a comprehensive definition of income.

II. BACKGROUND

Quantifying family economic income in a microdata file suitable for analyzing alternative tax proposals as the Treasury Department has done may be a recent occurrence, but the concept of economic income has been a fundamental part of economic thought for decades. Under the Haig-Simons definition of income (named after its use by Haig (1921) and Simons (1938)), income is the amount that a family or individual consumes in a particular time period plus the net increase or decrease in the value of their assets. This definition is cited repeatedly in academic discussions of income.¹ It reflects economic well-being, or command over resources, because it is the amount that could be consumed without reducing net worth.

In spite of the wide acceptance within the economics profession of the concept, empirical tax analyses have seldom attempted to measure economic income because of a lack of data. Many of the components of economic income

are reported neither on tax returns nor on other national surveys. The Treasury Department's first large-scale attempt at overcoming the data problems and approximating economic income came in 1976 in preparation for Blueprints for Basic Tax Reform. That report moved towards a comprehensive measure of economic income, although a narrower concept termed "comprehensive income" was often used to classify tax units for distributional analyses. In congressional testimony in 1982², the Treasury Department analyzed the effect of "flat tax" proposals on the distribution of the tax burden by "uniform income" class, an income definition similar to economic income.

As part of the Treasury Department's 1984 study of tax reform that led to Tax Reform for Fairness, Simplicity, and Economic Growth, substantial improvements were made in the data base used for analysing tax reform proposals.³ The new data base permitted a closer approximation of the theoretical notion of economic income and enabled tax units to be grouped into families.

III. WHAT IS FAMILY ECONOMIC INCOME?

"Family economic income," as developed by the Office of Tax Analysis (OTA), is an income measure that applies to all members of the U.S. population according to the family in which they live, regardless of whether or not they file a tax return under current law.

A. Families

For many people, the tax unit and the family are the same. A family can, however, consist of several tax filing units if dependents have incomes of their own. If children who are dependents for tax purposes have jobs or have investment funds in their own names, they may have to file returns to pay taxes or to receive refunds of taxes that were withheld. Yet, the standard of living of these "dependent filers" derives less from their own income than from the income of their families. Similarly, the family may support other family members who do not qualify for the dependent's tax exemption. In these instances, the family is more meaningful than the tax-filing unit for classifying people in similar circumstances and for assessing the distributional burden of the tax system.⁴

For example, in a family with income of \$50,000 a year a teenager may have a part-time job and show the same income on his or her tax return as a welfare mother working occasionally for the minimum wage. The child and the economic unit headed by the mother are not, in a meaningful sense, in similar economic circumstances, however.

In order to analyze the distributional consequences of tax proposals that include any form of consumption tax—such as excise taxes or a value-added tax (VAT)—using the family is particularly important. While most income and income taxes can be attributed to separate family members, it is unclear how

to allocate the family's consumption spending, and the accompanying consumption taxes, among individuals. Much family spending is jointly consumed—such as housing—and even individual consumption—such as food and clothing—is unlikely to be related to the income of the dependent family member.

Therefore, for analyzing income and consumption tax proposals, family economic income combines the incomes and the taxes of dependents with the incomes and taxes of those (usually parents) who support them. In 1983, there were 96 million tax returns filed, but the returns came from only 78 million different families.

B. Nonfilers

Since current law does not require all families and adult individuals to file tax returns, using the tax return unit as the basis for analyzing the distributional effects of tax reform omits the effect on current-law nonfilers. Some nonfilers have too little income, or only nontaxable forms of income. Of 92 million families (including unrelated individuals who live alone or in groups) in 1983, over 13 million were nonfilers. Almost half of the elderly and most families below the poverty line are nonfilers.

In many cases the differences between filers and nonfilers are rather arbitrary. Many nonfilers have incomes from nontaxable sources—such as social security, welfare, and tax-exempt interest—as high as tax filers who receive income only from taxable sources. Other filers may have the same amount of income from the same source as nonfilers, but file simply to receive refunds of withheld taxes or of the Earned Income Tax Credit. Since assessments of tax equity should depend on how alternative tax systems treat individuals and families with similar amounts of income regardless of the sources, it is important to include both filers and nonfilers in any distributional analyses. Moreover, proposals to broaden the tax base might impose taxes on some who are nonfilers under current law and exempt some who presently file from paying tax. Tax analyses based solely on tax returns could not provide any information on nonfilers.

C. Definition of Family Economic Income

In attempting to quantify the Haig-Simons concept of income as consumption plus change in net worth, family economic income, as developed by OTA for the 1984 Treasury report, adds together all the forms of income reported on individual tax returns (making adjustments where necessary for correct economic measurement) plus estimates of forms of income not reported on tax returns. Where possible, income is measured on an accrual basis; where that is not possible, realizations are used as a proxy. Family economic income attempts to allocate to individuals all the pre-tax income in the economy from resources owned by individuals.

Family economic income can perhaps be most easily understood through

comparisons with two commonly-used measures of income: "personal income" and "adjusted gross income."

1. Comparison with Personal Income

In the aggregate, the measure to which economic income is most similar is personal income (PI) as defined and measured in the National Income and Product Accounts (NIPA). Like personal income, "economic income" attempts to account for all the income of persons in the economy.

There are a few notable differences between personal income and family economic income, however, as Table 3.1 indicates. The largest difference is that FEI includes real retained pretax corporate earnings, which amounted to \$155 billion in 1983. This reflects the view that corporations are not separate from their stockholders, but that the income of a corporation is

Table 3.1 COMPARISON OF PERSONAL INCOME AND FAMILY ECONOMIC INCOME, 1983

	(Billions)
<u>Personal Income</u>	<u>\$2,744.2</u>
<u>Plus:</u> Items in Family Economic Income Not in Personal Income	<u>259.8</u>
Personal contributions for social insurance	119.6
Real pretax corporate retained earnings	154.6
Inflation adjustments on:	
Interest expenses, including mortgage	51.9
Interest received	-88.0
Real net gain from sale of noncorporate assets	21.7
<u>Minus:</u> Items in Personal Income Not in Family Economic Income	<u>101.5</u>
Federal hospital and supplementary medical insurance	57.2
Miscellaneous government transfers	19.3
Investment income received by nonprofit institutions or retained by fiduciaries	25.0
<u>Minus:</u> Miscellaneous differences in measurement and definition—net	<u>20.4</u>
<u>Equals:</u> "Family Economic Income"	<u>\$2.882.1</u>

Source: Office of Tax Analysis, and Survey of Current Business, July 1984, April 1985, and July 1985.

income to the individuals who own it, either directly or indirectly through pensions and life insurance funds. On the other hand, the \$25 billion of income of nonprofit institutions and fiduciaries, which is part of PI, is excluded from FEI. Although income of nonprofits does become income to someone—the student paying below-cost tuition, the poor receiving charity—there is no obvious way to allocate it to individuals.

The next largest difference is that family economic income includes the \$120 billion of "personal contributions for social insurance," whereas personal income does not. FEI is the family's pre-tax economic income. Inclusion is consistent with the view that the link between present contributions and future benefits is weak and uncertain, that the contributions are in effect taxes and that the social security benefits are transfer payments. Excluding the contributions from income suggests that the contributions and the benefits are viewed more like pension contributions and pension benefits.

Some of the other differences between PI and FEI also relate to the characterization of transfer payments. Family economic income includes cash transfer payments but excludes in-kind payments (except for food stamps which function so much like cash), primarily because of the problems of valuation. Family economic income, therefore, excludes the \$57 billion of "federal hospital and supplementary medical insurance," and the \$19 billion of "miscellaneous government transfer payments" that are included in personal income.

Other differences reflect the fact that personal income, like all NIPA concepts, ignores changes in asset and liability values. In the aggregate, the gains should offset the losses with no income generated for the economy as a whole. Ultimately, product produced must equal income generated. One of the fundamental objectives of family economic income, however, is to capture changes in the purchasing power of assets and liabilities. Family economic income, therefore, includes real capital gains and losses, adjusting the nominal values for inflation, while personal income includes neither capital gains nor inflation adjustments. Although most real gains net to zero in the aggregate since gains are generally matched by losses, for distributional analysis knowing who the winners and losers are is important.

2. Comparison with Adjusted Gross Income

Family economic income differs from AGI in concept and in magnitude. AGI is an artifact of the Tax Code in that it represents only income that lawmakers have decided in a particular year should potentially be subject to tax. Family economic income, on the other hand, is independent of changes in tax law and is useful for analyses of tax policy as well as of other subjects.

Although it is the starting point for deriving family economic income, AGI of tax filers accounts for only about two-thirds of FEI. (See Table 3.2)⁵

° FEI first adds to AGI estimates of the income in the economy that is not reported on tax returns. This consists of income of the nonfilers who do not need to submit returns because their income is so low

**Table 3.2 DERIVATION OF FAMILY ECONOMIC INCOME
FROM AGI, 1983**

	(Millions)
AGI of filers at 1983 incomes defined by pre-TRA 1986 law	\$1,939,430
+ Unreported/underreported income of filers	122,414
+ Unreported income of:	
Legitimate nonfilers	25,492
Delinquent nonfilers	103,952
+ Adjustments: IRA & Keogh contributions, dividend exclusion, second-earner deduction, other	59,452
+ Transfers:	
Nontaxable social security and railroad retirement	162,377
Nontaxable unemployment compensation	15,909
Nontaxable workmen's compensation	11,868
Veterans' benefits	12,731
Food stamps	12,266
Welfare benefits (SSI, AFDC, etc.)	22,333
+ Untaxed employer contributions to:	
Pensions and profit sharing	97,120
Health and medical insurance	76,960
Life insurance	6,937
Military benefits and "fringe benefits"	21,908
Other	2,427
- Taxable pensions	-77,496
+ Earnings on pension funds	89,430
+ Earnings on life insurance, IRA, and Keogh funds	22,823
+ Tax-exempt interest	11,005
+ Real net rent on owner-occupied homes	55,357
+ Real pre-tax corporate economic income	223,617
- Dividends before exclusion	-49,587
- Dividend earnings of pension and life insurance funds	-19,410
- Capital gains in AGI	-44,594
+ Real net capital gains (except on corporate stock and other securities)	21,665
+ Inflation adjustment for net interest of:	
Rentals, SBC's, partnerships, and Schedule A	9,995
Schedules C & F	5,977
+ Inflation adjustment for interest received	-88,012
+ Excess depreciation (tax depreciation minus economic depreciation) of:	
Rentals and SBC's	3,171
Partnerships (gainers and losers)	3,049
Schedules C & F	5,162
+ Adjustment for percentage depletion and IDC's	2,297
+ Netting of other losses and miscellaneous adjustments	14,060
Equals: Family Economic Income, 1983	\$2,882,085

Note: Some figures differ from those in Chapter 4 of this volume. Here the derivation of Family Economic Income starts with AGI under 1986 law, whereas in Chapter 4 it starts with AGI under 1983 law.

(legitimate nonfilers), as well as income that should be reported, but is not, by filers and by delinquent nonfilers.

- FEI also adds back to AGI certain "adjustments to income" reported on the tax return, principally IRA and Keogh contributions and the second-earner deduction.
- Since FEI aims to measure income in the current year, it adds back net operating losses carried over from previous years.
- FEI includes cash and certain near-cash transfers that are not subject to tax, principally social security benefits, welfare payments, unemployment and workers' compensation, veterans' compensation, and food stamps. Conceptually, "economic income" could include the cash value of in-kind transfers such as housing subsidies, and medicare and medicaid. These were omitted because of the difficulty of valuing them. Studies of the value of such in-kind transfers have found a substantial difference between the cost of the subsidies and the value the recipients attach to the transfer.⁶
- FEI adds in the untaxed portion of compensation such as employer contributions for pensions, health and life insurance, and other fringe benefits. So that pension income will not be double-counted, it excludes pension income as received but includes the accrual of earnings on pension and life insurance plans, and on IRA and Keogh accounts.
- A homeowner's investment in a house implicitly yields net rental income equal to the excess of the gross rental value of the house over costs, with costs including mortgage interest, depreciation, property taxes, and maintenance. This net rental income, adjusted for inflation, is included in FEI. (Personal income also includes net rent, but with no inflation adjustment.)
- As mentioned earlier, FEI allocates pre-tax corporate profits both to individuals who own stock directly and to those who own stock indirectly, for example, through shares of pension or life insurance funds. Implicit in this attribution of pre-tax profits to shareholders is an assumption that the corporate income tax—part of pre-tax profits—is borne by shareholders, rather than, for example, by owners of capital in general, consumers, or labor. This assumption reflects the short-run more than the long-run incidence. (An adjustment in the incidence of a tax could theoretically require adjustment of the pre-tax earnings.) To avoid double counting the portion of earnings that is distributed as dividends, FEI subtracts dividends received, both directly and indirectly. Similarly, since retained earnings tend to be reflected in the price of corporate shares, capital gains in AGI that come from corporate stock are also removed to avoid double counting.⁷
- Family economic income attempts to measure capital income correctly by removing the inflation component of nominal income and additional amounts of tax preference. It indexes interest receipts and expenses, and capital gains and losses. It replaces tax depreciation with real

economic depreciation, and attempts to adjust for the indexed tax-preference component of intangible drilling costs and percentage depletion allowances.

D. Issues in Defining Family Economic Income

Translating the Haig-Simons concept of income as consumption plus change in net worth into a quantifiable measure for tax analysis presents a number of instances where either the correct theoretical treatment is not clear, where imperfections in the data require compromises to be made, or where the correct conceptual treatment of income produces a mismatch in the timing of income and taxes reported. In the areas discussed below, the approach reflected in FEI may not be the only correct one, but a better one is not obvious.

1. Pensions

Pension benefits appear in FEI on an accrual basis; that is, a worker is credited with receiving income as the employer contributes to the pension fund and as that fund earns income. In this way, pensions are treated just like other income that is received currently, but saved. Conversely, pensions are not counted as income as they are received, since the pension benefits represent withdrawals of past earnings, rather than current income. Taxes are attributed to taxpayers at the time they are paid. This failure to attribute taxes to holders of tax-deferred pension plans until the time of withdrawal, even though no income is recognized then, can produce the anomalous result that tax is collected from those who have little or no current "income," especially the elderly. It understates the taxes of workers receiving the employer contributions or earnings on their pension funds by failing to recognize their future tax liability.

The treatment of pensions in FEI also makes no distinction between vested and nonvested workers, nor between contributions to defined benefit or defined contribution plans. Ignoring vesting would overstate the income of younger workers, who are less likely to be vested. However, since studies indicate that most workers with employer pension contributions ultimately vest, this approach is reasonable for most workers and avoids attributing all the past contributions whenever vesting occurs. Treating employer contributions and earnings on defined benefit plans in the same manner as additions to defined contribution plans mismeasures the income associated with defined benefit plans in many cases. On average, the value of additions to defined benefit plans probably equals the amount of the additions, but the value may differ substantially from the amount of the addition, depending on the circumstances of the particular plan and worker.

These problems with the treatment of pensions—the mismatch in the timing of pension income and taxes, and the lack of a distinction between vested and nonvested workers or between defined benefit and defined contribution plans—arise because family economic income is an annual measure rather than a life-

time measure. On a lifetime basis, pension income and taxes would be matched appropriately. Employer contributions for workers who did not vest in a plan would not be counted as income. And the total additions to a defined benefit plan would equal the benefits received.

In an annual measure of income, pension income could be treated in several alternative ways, but none of them seem satisfactory either. The simplest approach would be to include pension income as it was received in retirement, on a realized basis instead of on an accrual basis. This would eliminate the three problems noted above, but it would seriously understate Haig-Simons income to the extent employer contributions for pensions and earnings on pension funds represented increases in net worth. A second alternative would be to include pension income both as it accrued and when it was received. This would alleviate the mismatch between income and taxes for retirees, but would overstate the aggregate amount of pension "income" in the economy and not solve the income measurement problems for current workers. A third approach would count both income and taxes on an accrual basis, associating deferred taxes with deferred income and removing from tax liability the taxes actually paid on pension benefits received. This would solve the mismatch of taxes and income, but calculating deferred taxes would involve uncertainty about the future tax system and the tax rate the individual worker would face.

2. Corporate Income

Allocating corporate income to individuals is one of the more controversial parts of FEI. Many people, particularly noneconomists, implicitly subscribe to the notion of a "corporate veil" and view the corporation as distinct from its stockholders. To them, corporate earnings do not belong to individuals until they are distributed. Others who see through the corporate veil may still disagree with the way FEI allocates corporate income among individuals. Rather than distributing the income on the basis of the direct and indirect ownership of stock (as FEI does), other assumptions of the incidence of the corporate tax would imply distributing the income on the basis of ownership of capital in general, or consumption, or labor income. For the long run, a corporate tax borne by all capital is a particularly popular view.⁸

Whether the incidence of corporate income and the corporate tax falls on stockholders or on owners of all capital, a problem arises with the share allocated to defined benefit pension plans. Should the corporate stock owned by defined benefit plans be attributed to the workers with rights to the pension benefits, or to the owners of the firms sponsoring the pension plans? If corporate income or taxes change, the firm's contribution to the plan changes but not the pension benefits. This suggests that the corporate income and taxes allocated to defined benefit pension plans should be ascribed to the firm and not to the workers with rights to the plan. However, if the firm holds the worker's total compensation fixed, it would increase or decrease nonpension income in response to changes in net corporate income of the

pension fund, and the incidence of corporate income and taxes would appropriately fall on the worker. Further analysis of defined benefit plans is necessary before this issue can be resolved.

The inclusion of corporate income in FEI also leads to a possible mismatch between income and taxes in two respects. The first mismatch arises because capital gains on corporate stock are removed from a taxpayer's AGI when corporate income is attributed to the return (in order to avoid double counting of retained earnings in the aggregate), but the taxes on those gains remain. The taxes appear as realized, but the corporate income is included in FEI as it accrues. The result is that some taxpayers may have large tax liabilities from capital gains that accrued over many years but a relatively small amount of corporate income accruing in the tax year.

A second mismatch may occur because corporate taxes have generally not been included in distributional analyses even though the income classifier includes corporate income.⁹ Whether or not this treatment is viewed as inconsistent depends in part on the question being addressed and on the role assigned to the income classifier. If the question is the distribution of Federal income taxes (or the effects of the Tax Reform Act of 1986), then the answer should include both corporate and individual income tax burdens. However, this is not the only approach useful in tax policy analysis. Examining individual income taxes alone provides an extremely important part of the distributional picture, and one that is more clearly defined and less controversial than the combined effect of individual and corporate taxes. Furthermore, an income classifier is intended to discriminate among people on the basis of their levels of economic well-being, to put people into the "right boxes" for analyzing the impact of any taxes: individual, consumption, even social security taxes. Including corporate income in the classifier but not in the taxes being examined adds no inconsistency to that analysis.

Corporate taxes can of course be distributed along with individual taxes, given an incidence assumption. Table 3.3 presents the distribution of family economic income, corporate income (the portion not attributable to foreigners, government or nonprofit institutions) as included in FEI, and the distributions of pre-TRA income tax liabilities with and without corporate taxes, assuming that corporate taxes are borne in proportion to the ownership of corporate income. The table shows that although corporate income is more concentrated in higher income classes than family economic income, combining corporate taxes with individual income taxes has relatively little effect on the distribution of the tax burden. From columns (1) and (2), the top two income classes receive 26 percent of all corporate income but only 12 percent of FEI; families with incomes of \$20,000 or less receive only 7.5 percent of corporate income but 15 percent of FEI. In spite of this disparity between the two distributions of income, columns (3) and (4) show that the distributions of individual income taxes and individual plus corporate income taxes are quite similar. This results from the fact that corporate income happens to be distributed much like individual income tax liabilities, and from the

Table 3.3 DISTRIBUTIONAL COMPARISONS OF CORPORATE AND FAMILY ECONOMIC INCOME, AND INDIVIDUAL AND CORPORATE INCOME TAX LIABILITIES
(1983 income levels, 1988 law)

Family Economic Income (\$1,000's)	Distribution of 1988 Pre-TRA Law Tax Liabilities:			
	Corporate FEI	Corporate Income	Individual & Corporate*	
	(1)	(2)	Individual (3)	(4)
			(Percentage)	
< 0	-.24	0.23	0.10	0.12
0 - 10	3.23	1.24	0.47	0.58
10 - 15	5.28	2.29	1.67	1.77
15 - 20	6.85	3.76	3.22	3.30
20 - 30	16.08	10.65	10.51	10.53
30 - 50	29.88	23.26	26.29	25.83
50 - 100	26.85	31.89	30.98	31.12
100 - 200	6.15	12.70	10.63	10.94
200+	5.89	13.99	16.13	15.81
Total	100.0	100.0	100.0	100.0

*Assumes corporate income taxes are distributed in proportion to corporate income in family economic income.

fact that corporate income taxes only amount to about 20 to 25 percent of individual income taxes. The inclusion of corporate taxes is likely to have a bit more effect on the conclusions about the distributional consequences of the Tax Reform Act of 1986, however, because individual taxes were lowered while corporate taxes were raised.

3. Capital Gains

In theory, Haig-Simons income includes capital gains as they accrue on all assets in the economy, adjusted for changes in purchasing power. Unfortunately, the necessary data on accruals on many types of assets are not available at the individual level. Tax returns provide data on realizations of gains on various types of assets, with information necessary to adjust for inflation during the holding period. Realized gains, however, may not reflect accruals very well since tax laws clearly influence the timing of the realization of gains and losses. FEI therefore contains only a proxy for an ideal measure of real accrued gains.

For owners of corporate stock, retained earnings adjusted for inflation should represent real accruing capital gains. The only real gains or losses that would not be reflected in real retained earnings would be "unexpected gains." Theoretically, there is no reason why in the aggregate these unanticipated gains and losses should be either positive or negative, so we assume that they net out to zero. FEI includes real gains or losses on corporate stock on an accrual basis in the allocation of corporate income. Unfortunately, this approach eliminates the difference between successful and unsuccessful investors.

For noncorporate assets, gains were estimated on a realization basis, in spite of the influence that tax laws have on decisions to realize gains, for two main reasons. First, there is no evidence on ownership of noncorporate assets that is as reliable as the receipt of dividends from corporate stock. Second, there is no measure of accruing gains on noncorporate and personal assets comparable to retained earnings on corporate stock. Family economic income, therefore, includes estimates of realized capital gains, adjusted for inflation over the estimated holding periods, on noncorporate assets identified as securities other than corporate stock, real estate, livestock, and "other assets." In an attempt to offset some of the distortion in the timing of realizations caused by the tax laws, FEI followed the Tax Code's example and limited total real losses to \$3,000 per return.

4. Implicit Income

Ideally, economic income would be measured before any effects of distorting taxation. Since markets tend to equalize after-tax rates of return, tax preferences can depress the pre-tax rate of return on a preferred asset, and comparatively heavy taxation can raise the pre-tax rate of return, relative to the returns that would prevail under a system of neutral taxation. This implies that the observed earnings on assets bearing different rates of tax do not necessarily reflect true pre-tax earnings, and that in computing economic income, adjustments should be made to measured incomes (with implicit income added or subtracted) for the effects of the tax structure on before-tax returns. For example, the tax exemption on municipal bonds lowers the interest earned on those holdings. The owners of the bonds receive implicit income that ideally would be counted in economic income. (They pay implicit taxes as well.) Similarly, if corporate assets are heavily taxed, then corporate income would be lower in the absence of distorting taxation. The distribution of this change in income among individuals depends on the incidence of the corporate tax that is adopted. For consistency, the incidence assumptions used to adjust pre-tax earnings should coincide with the assumptions used to distribute taxes.

In practice, this type of adjustment to pre-tax earnings was not made in computing family economic income because of the complexities in modeling the rates of return that would prevail in a world with neutral taxation.

IV. EXPANDED INCOME AND MODIFIED EXPANDED INCOME

While the Treasury Department has used family economic income for analyzing recent tax proposals, the Joint Committee on Taxation (JCT) developed its own broad measure of income. Understanding the Joint Committee's income concept ("modified expanded income" or MEI) is particularly important since the official congressional estimates of the distributional impact of the Tax Reform Act of 1986, and the House and Senate proposals leading up to it, were based on MEI.

A. Definitions

Since tax analysts have long recognized the limitations of using AGI as an income classifier, the Treasury Department, the Joint Committee, and others used "expanded income" through much of the 1970's as a measure that improved upon AGI and that could be derived solely from information reported on tax returns. Expanded income adds back identifiable items of tax preference that are excluded from AGI but that are subject to the minimum tax, and then subtracts investment interest deductions up to the amount of investment income. The tax preferences are primarily the excluded portion of nominal capital gains, and preferences such as excess amounts of depreciation, intangible drilling costs, and percentage depletion, for taxpayers filing minimum tax returns. (The preferences are measured as the excess over tax amounts, not over economic amounts.)

Modified expanded income is similar to expanded income in that it adds back tax preferences reported on minimum tax returns and the excluded portion of capital gains; however, MEI makes no adjustment for investment interest expenses. MEI makes further adjustments to AGI, as shown in Table 3.4. Modified expanded income adds in some of the income of nonfilers. It adds back to AGI the IRA and second-earner deductions. It includes estimates of tax-exempt interest, employer contributions for health and life insurance, nontaxable social security benefits and some other transfers. MEI excludes losses arising from rental and royalty properties, estates, small business corporations, and from partnership interests that appear to be "passive." These exclusions are based on the fact that investments in certain passive activities may result in losses for tax purposes that do not represent real economic losses. Rather than attempt to separate real from tax losses, MEI simply sets all these passive losses equal to zero and excludes them.

Modified expanded income applies to the traditional unit of tax analysis—the tax return—with two exceptions: the analyses exclude taxpayers under age 16, and they include nonfilers as well as filers. The reason for excluding young taxpayers is that:

"[t]his reflects the view that income of children under 16, who tend to have relatively low incomes, should, if possible, be added to that of

Table 3.4 DERIVATION OF MODIFIED EXPANDED INCOME
FROM AGI, 1983

	(Millions)
AGI, 1983 levels defined by pre-TRA 1986 law	\$1,939,430
+ Partial income of nonfilers ^a	10,604
+ Adjustments: IRA's, second-earner deduction, other	53,156
+ Losses on:	
Rents	25,333
Passive partnerships	25,988
Royalties, estates, SBC's, misc.	8,042
+ Excluded capital gains	73,084
+ Minimum tax preferences, adjusted	5,452
+ Tax-exempt interest	11,005
+ Transfers:	
Nontaxable social security benefits	156,258
Nontaxable workman's compensation	11,868
Nontaxable unemployment compensation	15,909
+ Employer contributions for health & life insurance	83,905
+ Earnings on life insurance funds	13,415
+ Miscellaneous, including dividend and interest exclusion	5,360
Equals: Modified Expanded Income, 1983	\$2,439,877

^aThis reflects the income of nonfilers that could be estimated from the Census Bureau's Current Population Survey.

their parents in order to achieve a more accurate measure of the distributional impact of tax change." (Joint Committee on Taxation (1985).)

B. Comparison Between Modified Expanded Income and Family Economic Income

The major differences between MEI and FEI stem from the fact that FEI attempts to quantify a broad definition of income that is theoretically sound but difficult to estimate, whereas MEI extends AGI in modest ways that can be estimated with greater ease and confidence. To begin, FEI is a more comprehensive—and larger—measure of income than MEI: \$2.9 trillion vs. \$2.4 trillion, respectively. As Table 3.5 shows, FEI includes more sources of income than does MEI.

FEI attempts to separate the real economic values from the amounts of income or loss reported for tax purposes. It does so by adjusting all returns with business income for estimated amounts of the major tax preferences, such

**Table 3.5 DERIVATION OF FAMILY ECONOMIC INCOME
FROM MODIFIED EXPANDED INCOME**

	(Millions)
Modified Expanded Income	\$2,439,877
+ Transfers:	
Welfare & Food Stamps	34,599
Railroad retirement	6,119
Veterans' benefits	12,731
+ Pensions:	
Employer contributions & profit sharing	97,737
Earnings on pension, IRA, Keogh funds	98,838
Taxable Pensions	-77,496
+ Unreported income of filers & nonfilers	240,194
+ Real net rent on owner-occupied homes	55,357
+ Real pre-tax corporate economic income	223,617
- Dividends before exclusion	-49,587
- Dividend earnings of pension and life insurance funds	-19,410
+ Preference adjustments:	
Passive losses	-59,363
Excess depreciation (tax depreciation minus economic depreciation)	11,426
+ Inflation adjustment for net interest of noncorporate business	15,972
+ Net adjustment in other preferences	-3,155
+ Capital gains adjustments:	
Realized capital gains	-117,678
Real net capital gains (except on corporate stock and other securities)	21,665
+ Inflation adjustment for interest received	-88,012
+ Netting of other (carryover) losses	12,391
+ Miscellaneous (including other fringe benefits, military benefits, Keogh contributions)	26,387
Equals: Family Economic Income	\$2,882,085

as accelerated depreciation and intangible drilling costs, that create losses for tax purposes but that are not real economic losses. Although the FEI approach cannot claim to adjust every tax return appropriately, on average and overall it removes the amount of tax preferences independently estimated to be present. MEI, on the other hand, disallows all losses in categories where tax shelters are most heavily concentrated. This approach makes no attempt to separate "real" from "artificial" losses individually or overall, and it removes none of the benefit of tax preferences from profitable businesses.

Family economic income attempts to measure Haig-Simons income correctly. Consequently, it adjusts for inflation, raising the income of taxpayers with large interest expenses and lowering the income of many with long-term capital gains and interest income. In addition, FEI attributes corporate income to its shareholders. Modified economic income makes no such allocation.

Family economic income in general relies heavily on estimates of income and adjustments to income ("imputations") from sources other than tax returns, whereas only a few components of MEI are based on imputations: social security and the other transfer benefits, employer contributions, tax-exempt interest, earnings on life insurance funds, and the determination of which partnership losses are passive. MEI reflects a concern with variation added through the imputation process, whereas FEI aims more for the correct expected value of a theoretically sound measure. Capital gains provides an example of the contrasting approaches reflected in FEI and MEI. FEI attempts to include the best feasible estimate of the expected value of real accruing capital gains. Replacing gains on corporate stock with real retained earnings is a theory-based proxy for accruing capital gains but one that omits much of the real variation among stockholders in accruing gains and losses. MEI, on the other hand, maintains the variance reported on tax returns among winning and losing stockholders. However, its inclusion of 100 percent of nominal capital gains will always with certainty overstate the real (after inflation) capital gain.

Beyond the definition of income, FEI and MEI differ in the unit of analysis to which they apply: FEI applies to families, whereas MEI applies to tax units in which the taxpayer is at least 16 years of age. Again, the MEI approach is more certain. Age of the taxpayer is known, whereas the family to which an individual who files his or her own tax return belongs cannot readily be identified. Rather, for FEI a family similar to the one to which the individual is likely to belong must be picked by information from other sources. In spite of the imprecision of "imputing" families to members who file their own tax returns, the income of the related individuals is typically a poor indicator of their standard of living or well-being, even for dependent taxpayers over age 16. Whereas 92 percent of dependent filers have AGI of no more than \$10,000, over half live in families with economic income over \$50,000. Removing dependent filers under age 16 removes only 6 percent of all dependent filers, as Table 3.6 shows. Most dependent filers are between 16 and 25 years old.

V. IMPLICATIONS OF THE DIFFERENCES BETWEEN FAMILY ECONOMIC INCOME AND MODIFIED EXPANDED INCOME

For all the differences between the income classifiers discussed above, how do the measures differ quantitatively, and what are the implications for tax policy analysis?

Table 3.7 presents a simple comparison of the three income measures, the alternative units of analysis, and the inclusion of nonfilers. It confirms,

for example, that the broader the measure of income and the unit of analysis, the higher the distribution of income appears: families classified by economic income (column 9) tend to fall into much higher income classes than do returns of people at least age 16 classified by MEI (column 6), which in turn are in higher income classes than returns from all age groups classified by AGI (column 3). Only 29 percent of all families have economic income under \$15,000, while over half the tax units headed by people age 16 or older have MEI below \$15,000, and 60 percent of total tax units have AGI below this level. By family economic income \$15,000 is clearly a low-income class, whereas it is a middle-income class according to the two other approaches. At the other end of the income scale, 15 percent of the families have economic incomes above \$50,000, but only 4 percent of the tax units have that much AGI and only 6.5 percent of the units not headed by children have that much MEI.

Nonfilers clearly lower the distribution of income under each of the three approaches, although less so for family economic income than for the other two measures. This occurs mainly because of the income sources included in FEI but excluded from AGI and MEI, such as means-tested transfer payments and unreported income from the underground economy.

A question that Table 3.7 does not answer is whether the differences in the three approaches stem mainly from the income classifiers or from the unit of analysis. Table 3.8 addresses this issue. Table 3.8 compares the distribution of adult tax units by MEI (column 1) with the distribution of families by

**Table 3.8 DISTRIBUTION OF TAX UNITS
AGE 16+ BY MODIFIED EXPANDED INCOME,
FAMILIES BY MODIFIED EXPANDED INCOME
AND BY ECONOMIC INCOME
(1983 Levels of Income)**

Income Class (\$1,000s)	Age 16 & over by MEI (1)	Families by MEI (2)	Families by Economic Income (3)
	(Percentages)		
< 0	0.4	0.3	0.3
0 - 10	39.7	24.1	15.6
10 - 15	12.8	12.7	13.2
15 - 20	10.2	11.8	12.2
20 - 30	6.5	19.3	20.2
30 - 50	15.5	21.1	23.6
50 - 100	5.5	9.1	12.8
100 - 200	0.7	1.2	1.5
200+	.3	.4	.4
Total	100.00	100.00	100.00

MEI and FEI (columns 2 and 3, respectively). The largest differences among the three columns appear in the \$0-\$10,000 class: 40 percent of the tax units fall in this MEI class, compared to 24 percent of the families, and only 16 percent of the families if classified by FEI instead of MEI. (These figures include nonfilers, but the conclusion is the same for filers alone.) These figures suggest that both the unit of analysis—adult tax unit vs. family—and the income classifier affect the analysis, with the unit of analysis apparently having a slightly larger effect than the choice of income classifier.

The crucial question for tax policy analysis is how do the different approaches to measuring income and classifying people alter the conclusions about tax changes. The answer for the Tax Reform Act of 1986 appears to be that the choice of approach matters a lot.¹⁰

Table 3.9 compares individual income tax liabilities under 1988 law before and after TRA86 under the three classification approaches, estimated at 1983 levels of income. Under both old and new law, the family economic income approach shows income classes below \$50,000 bearing a smaller fraction of the

**Table 3.9 INDIVIDUAL TAX LIABILITIES UNDER 1988 LAW,
BEFORE AND AFTER THE TAX REFORM ACT OF 1986,
BY ECONOMIC INCOME OF FAMILIES, MODIFIED
EXPANDED INCOME OF RETURNS AGE 16 AND OVER,
AND AGI OF RETURNS
(1983 Levels of Income)**

Income Class (\$1,000s)	AGI of Returns			MEI of Returns Age 16 and over			Economic Income of Families		
	Prior Law	TRA Law	Percent Change	Prior Law	TRA Law	Percent Change	Prior Law	TRA Law	Percent Change
	(Percentages)								
0 - 10	1.9	1.7	-15.6	1.2	1.0	-17.7	.5	.4	-24.3
10 - 15	4.8	4.3	-14.6	3.6	2.8	-25.8	1.7	1.2	-34.1
15 - 20	6.5	6.4	-6.5	5.3	4.9	-13.0	3.2	2.7	-18.9
20 - 30	16.5	16.4	-4.9	14.1	13.8	-6.7	10.5	10.2	-7.1
30 - 50	29.5	29.8	-3.5	28.9	28.6	-5.9	26.3	26.3	-4.8
50 - 100	19.2	20.2	.2	22.5	23.7	.0	31.0	32.3	-.8
100 - 200	8.6	8.7	-3.7	8.9	9.3	-.1	10.6	11.2	.1
200+	12.9	11.9	-12.3	15.4	15.9	-1.8	16.1	15.5	-8.5
Total	100.0	100.0	-4.7	100.0	100.0	4.7	100.0	100.0	-4.7
Addendum:									
Negative Income	.1	.5	.1	.0	.0	.0	.1	.3	.1

tax burden and classes with at least \$50,000 of income paying a larger share than either of the other two methods. This pattern is consistent with the conclusion of Table 3.7 that the distribution of income appears higher with the broader measure of income.

In terms of the percentage change in personal tax liabilities, the three approaches provide notably different conclusions at the bottom and the top of the income scale. First, while the lowest income classes receive the largest percentage tax cuts under all three methods, the size of the percentage reductions varies substantially. Classifying families by FEI shows the largest reductions, with the MEI approach next, and the standard method of AGI of returns showing the smallest cuts. This variation probably stems more from the different units of analysis than from the different income classifiers. The increases in the personal exemptions, the zero bracket amounts, and the Earned Income Tax Credit in TRA86 were particularly beneficial to lower-income taxpayers filing joint or head of household returns, while little of the base broadening affected them. Removing the personal exemption on dependent filer returns, on the other hand, tended to increase taxes for dependent filers, who represent a large portion of taxpayers with low AGI, a smaller fraction of taxpayers with low MEI, but who are grouped with their families in the economic income columns.

The second substantial difference in implication of the three approaches appears in the top income class. According to the FEI and AGI approaches, taxpayers with incomes of \$200,000 or more receive above-average personal tax cuts, whereas they get below-average cuts under MEI. Differences among the classifiers probably account for more of this contrast than do differences among the units of analysis, since virtually any return in the top class would also belong to a family with very high income.

In particular, the full taxation of capital gains and the passive loss provisions of TRA86, combined with the ways the various income classifiers treat these forms of income, provide much of the explanation. These two provisions broadened the tax base of anyone with capital gains or passive losses and thereby tended to increase their taxes. By treating passive losses and capital gains almost as they are in the new tax law, MEI moves into higher-income classes taxpayers with these forms of income, who also tend to have tax increases. Since pre-TRA AGI includes only 40 percent of nominal capital gains, classifying by AGI puts taxpayers with capital gains (and the associated tax increases) into above-average income classes, but not into as high a class as under MEI. AGI puts taxpayers with passive losses into much lower-income classes than does MEI. The FEI treatment of capital gains (adjusting for inflation and substituting a share of corporate income for realized gains on stock) and passive losses (adjusting all business income, gains as well as losses, for tax preferences) would put taxpayers in much lower classes than does MEI but probably not as low as AGI. Consequently, the general reduction in tax rates benefits the taxpayers in the top FEI and AGI classes much more than base broadening hurts them, whereas the opposite is true for taxpayers classified in the top MEI category.

VI. CONCLUSION

This paper has explained the measure of family economic income, which recent Treasury analyses have used, and compared it to alternative income classifiers. Table 3.9 confirms that the distributional impact of individual income tax reform can vary significantly with, among other things, the income classifier and unit of analysis on which the comparisons are based.

Several implications for policy analysis can be drawn from the disparate pictures of tax reform painted by Table 3.9. First, there is no single "right" way to give quantitative answers to questions about equity. Indeed, not only can the conclusions vary with different income classifiers and units of analysis, the conclusions depend on how the tax laws are modeled (whether behavioral adjustments are incorporated, whether all provisions are included), whether corporate taxes are included or just individual taxes, the year for which the analysis is performed (TRA86 has a number of phase-ins), as well as more technical issues such as the year to which the data base applies (OTA has used 1983 income levels because of the difficulties of extrapolating into the future).

Second, although there is no single right way, it is important for analysts to resolve among themselves as many of the differences in approaches as possible. The alternative is that the choice among approaches would fall to policymakers who lack the background or expertise to judge technical alternatives. The choice of the unit of analysis—family vs. return—may be one exception where the policymaker's sense of the appropriate basis for equity comparisons could be quite useful.

FOOTNOTES

¹ Among standard references are Musgrave (1959) and Goode (1976). Musgrave states on p. 165: "The concept of taxable income which has gained increasing acceptance among fiscal theorists is that of total accretion. Income is defined to equal consumption during a given period, plus increase in net worth. According to this concept, all accretions to wealth are included, in whatever form they are received or from whatever source they accrue."

Recent users of this definition of income include David Bradford (1983), p. 231; and Pechman (1985), p. 11.

² Testimony of John E. Chapoton, Assistant Secretary of the Treasury for Tax Policy, before the Senate Finance Committee, September 28, 1982.

³ For further discussion, see "The Treasury Individual Income Tax Simulation Model," by Cilke and Wycarver. Chapter 2 in this volume.

⁴ Many surveys, including those conducted by the Bureau of the Census, often use the household as the basis of observation. A household is based on living arrangements and can include unrelated individuals living together. The family as used by OTA requires that all members not only live together but also be related, or meet the dependency test in the tax code, or be married filing separate returns. This definition seems appropriate for analyzing tax liabilities.

⁵ Since the concept of "family economic income" was developed for *Tax Reform for Fairness, Simplicity, and Economic Growth* in 1984, the adjusted gross income used as the starting point

refers to pre-TRA law. FEI can be derived just as well from AGI under TRA, but some of the adjustments would differ.

⁶See U.S. Census Bureau Technical Paper No. 50, *Alternative Methods for Valuing Selected In-Kind Transfer Benefits and Measuring Their Effect on Poverty*, March 1982.

⁷As is discussed in the following section, this adjustment is not precise since it removes realized gains and replaces them with accruing gains.

⁸This view is generally traced to Harberger (1962). For more recent examples, see Pechman (1985) and Feldstein (1987).

⁹Treasury analyses using FEI have been criticized for not including the corporate taxes as part of the individual tax burden. See Ballentine (1986).

¹⁰This analysis considers changes only to individual income taxes. As indicated above (Section III.D.2 and Table 3.3), OTA can and does analyze distributional effects of tax changes with imputations for corporate taxes paid by each group. Such calculations are not provided here, however, for several reasons. The focus of this paper is the income classifier, not alternative ways to measure changes in tax burdens from tax reform (which could be the subject of a separate paper). Distributions of individual income taxes alone were the standard analyses examined during the tax reform debates. In addition, the incidence of the corporation income tax is still hotly debated by economists. The distribution of taxes is much more sensitive to the assumption chosen than is the distribution of an income measure that includes corporate income.

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