A Distributional Analysis of Adopting the FairTax: A Comparison of the Current Tax System and the FairTax Plan

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Executive Summary

The U.S. federal tax code has undergone major changes since the last important attempt at tax simplification in 1986. In subsequent years, Congress enacted legislation to raise and then lower income tax rates, reduce the tax rates on capital gains and dividends, increase deductions for IRA contributions, create Roth IRAs and medical savings accounts, increase the earned income tax credit for the working poor, and make other changes. The result is over 60,000 pages of tax code, rules, and rulings that can confuse even the most adept tax professionals.

With federal tax reform again on the table, several groups and legislators have proposed alternative plans. The FairTax plan is the leading such proposal. It aims to replace most current federal taxes with a national retail sales tax. Representative John Linder introduced legislation in the form of H.R. 25, the Fair Tax Act of 2007.[1] Senator Saxby Chambliss is expected to introduce companion legislation in the Senate, as he did in the previous Congress.

While sales taxes have traditionally been considered to be "regressive" (i.e., placing a higher tax burden on the poor and a lower burden on the rich), the FairTax avoids regressivity by introducing what is called the "prebate." This is a rebate paid in advance, equal to the product of the sales tax rate and household consumption at the poverty level (as determined by the U.S. Department of Health and Human Services) plus an extra amount in the case of a married couple in order to prevent a marriage penalty.

In this report, we analyze the distributional effects that would result from the enactment of the FairTax, by determining the static and dynamic effects that the tax would have on income after taxes and on expenditures for both households and individuals when compared to the corresponding appropriate values under current law.

The most important findings are summarized in Table 0, which shows that the distributional effects of the FairTax depend on which measure is used to represent economic well-being: Expenditure or income. The left half of Table 0 allocates people to ten deciles based on the level of expenditure per person in 2001, sorted from poorest (decile 1) to richest (decile 10). Column (A) shows the level of annual spending per person under the laws in effect in 2001, and column (B) shows the level of expenditure (net of FairTax) that would be expected if the FairTax were to replace most current federal taxes. Poorer people would be better off; they would pay less tax under the FairTax (including the demogrant) than they currently pay in income, Social Security, and other federal taxes. Those in the richest two deciles would see a reduction in their expenditures. However, over time the FairTax would boost national income across the board. The results of incorporating this dynamic effect are shown in column (D), where it is clear that the FairTax would benefit all but those in the top expenditure category. Judged by these numbers, the implementation of the FairTax would be highly progressive.

The right half of Table 0 sorts people by income per capita (rather than expenditure per capita), and shows in column (F) the associated levels of expenditure for these income deciles under the tax rules in effect in 2001. The implementation of the FairTax would reduce the expenditure of those with the lowest incomes (column (G)), although this effect is attenuated substantially once

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[1] In the 109th Congress the bills were H.R. 25 and S. 25. In the 110th Congress, the Fair Tax Act is H.R. 25 in the House. As of February 12, 2007, it has 54 sponsors and co-sponsors but the bill has not yet been reintroduced in the Senate.

the dynamic gains from the FairTax are included (column (I)). The explanation is that even people with low incomes still have substantial levels of spending, so the introduction of the FairTax would collect more from them by taxing their spending than it would save them by reducing the taxes on their (low) income.

Table 0. Breakdown of Expenditure and Net Income per Capita by Decile, with and without the FairTax

Current Expenditure Survey: Expenditure per Capita											
Expenditure per Capita Deciles	**Under Current Laws**	**With FairTax Net of Tax (Static)**	**Change (%)**	**With FairTax Net of Tax (Year 25)**	**Change (%)**	**Income per Capita Deciles**	**Under Current Laws**	**With FairTax Net of Tax (Static)**	**Change (%)**	**With FairTax Net of Tax (Year 25)**	**Change (%)**
	(A)	(B)	(C)	(D)	(E)		(F)	(G)	(H)	(I)	(J)
1	3,437	5,040	47	5,246	53	1	16,406	12,980	-21	13,964	-15
2	5,900	7,911	34	8,265	40	2	13,535	11,133	-18	11,945	-12
3	7,985	9,854	23	10,333	29	3	15,761	13,378	-15	14,324	-9
4	10,184	11,996	18	12,607	24	4	16,701	14,749	-12	15,751	-6
5	12,725	14,545	14	15,309	20	5	18,222	16,483	-10	17,576	-4
6	16,027	17,366	8	18,328	14	6	19,525	18,399	-6	19,570	0
7	20,322	20,863	3	22,082	9	7	20,942	20,626	-2	21,883	4
8	26,404	26,337	0	27,921	6	8	25,801	25,593	-1	27,141	5
9	37,155	35,242	-5	37,471	1	9	30,390	31,697	4	33,520	10
10	92,652	83,638	-10	89,197	-4	10	55,500	67,747	22	71,077	28
Total	**23,278**	**23,278**	**0**	**24,675**	**6**	**Total**	**23,278**	**23,278**	**0**	**24,675**	**6**

We argue that current expenditure is a better measure of an individual's well-being than current income. This is because current expenditure is more closely related to lifetime income than is current income and is less subject to temporary shocks. Current expenditure is also a better measure of wealth, since people may live off their savings while undergoing a temporary drop in income. Therefore, we conclude that the FairTax, with the prebate, is more progressive than the current tax law.

I. Introduction

With the possibility of major federal tax reform under consideration, several groups and legislators have proposed alternative plans. The Fair Tax Act of 2007, H.R. 25, introduced before the U.S. Congress by Representative John Linder is among the proposed alternatives. Senator Saxby Chambliss is expected to introduce companion legislation in the Senate, as he did in the previous Congress.

The FairTax would replace most existing federal taxes with a comprehensive consumption tax in the form of a national retail sales tax levied at a tax-inclusive rate of 23 percent,[2] effective January 1, 2009. The act would repeal all federal personal, gift, estate, capital gains, alternative minimum, Social Security, Medicare, self-employment, and corporate taxes. The act is intended to be revenue neutral. In order to exempt the poor from tax under the FairTax plan, the government would issue a rebate (or “prebate”) to all households equal to the product of the sales tax rate and consumption at the poverty level (based on household size as determined by the Department of Health and Human Services) plus an extra amount in the case of married couples to prevent a marriage penalty.

This report addresses the question of who would benefit and who would lose in a shift to the FairTax? In other words, how progressive is the FairTax compared to the current tax system?

To anticipate our principal finding, the progressivity of the FairTax (with prebate) depends on how one views distribution: When households are sorted by expenditure per capita, as is appropriate when looking at long-term distribution, then the FairTax (with prebate) turns out to be highly progressive in the sense that it helps those at the bottom and middle of the expenditure distribution, while imposing a slightly higher burden on the most affluent members of society.

The issue is particularly important because, in the popular view, taxes on consumption are widely considered to be “regressive” – that is, they are seen as falling disproportionately on the poor. The proponents of the FairTax have responded to this concern by proposing that it be accompanied by the prebate, which would pay to every qualified household, in advance, the amount of FairTax that someone at the poverty line would be expected to have to pay. For instance, in 2007 the FairTax would exempt from tax the first $27,380 of spending by a married family of four. Assuming a 23 percent tax-inclusive FairTax rate, the annual prebate for such families would be $6,297. The prebate essentially allows spending up to the poverty level to be tax free.

The issue is also a point of significant dispute among economists and among politicians. Congressman Linder notes that the President’s Advisory Panel on Federal Tax Reform acknowledges that the FairTax is the only reform proposal that leaves the poor totally untaxed.[3] However, the report of the President’s panel argued that the burden on middle-income Americans would increase while the tax burden on the very rich would drop.[4] William Gale, a

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[2] Let a good sell for $100 without tax. Now impose a sales tax of $25 on this good. Similarly, the consumer may earn $125, pay $25 in income tax and have $100 left to spend. The tax rate may be expressed as 25% (=$25/$100) on a “tax exclusive” basis or 20% (=$25/$125) on a “tax inclusive” basis. The choice of how to present tax rates is arbitrary. In the United States, sales taxes are typically specified on a tax exclusive basis, and income tax on a tax inclusive basis.

[3] U.S. Congress, House Committee on Ways and Means (2005).

[4] President’s Advisory Panel on Federal Tax Reform (2005).

tax policy analyst for the Brookings Institution, claims that taxes would rise for the bottom 90 percent of the income distribution and drop only for the top 1 percent.[5] Neither the President's panel nor Gale, however, actually estimated the FairTax as introduced. Instead, each analyzed their own preferred variant of a sales tax, with various exemptions and other substantial changes. Their results, therefore, should not be regarded as results relating to the FairTax. On the other hand, Laurence Kotlikoff, Ph.D. and David Rapson conclude that "Compared with our existing federal tax system, the FairTax, as proposed in HR25, would significantly reduce marginal taxes on work, dramatically reduce marginal taxes on saving, and substantially lower overall tax burdens on current and future workers. Moreover, it would do this without limiting tax progressivity. Indeed, the FairTax would make our tax system more progressive."[6]

II. Methodology

In order to measure the progressivity of the FairTax, we first need to construct a data set that includes information, for a sample of households, on both expenditure and income. The next step is to construct variables that mirror the incidence of taxes on each household in the sample and to allocate the tax burden to each household. This then allows us to summarize the distributional effects of the proposed move to the FairTax. We now set out these steps in more detail.

A. Constructing the Data Set

The FairTax proposal would replace a number of taxes levied on income ("direct taxes") with a tax levied on expenditure ("indirect tax"). Thus, to measure the distributional effects of such a change, it is necessary to have a sample of households for which we have detailed information, both on income and expenditure.

Because there is no adequate, ready-made data set that would serve this purpose, we found it necessary to construct one for the purpose of this analysis. In this process we followed an approach similar to that taken by Feenberg, Mitrusi, and Poterba, in which they constructed a data set for 1991 with the express purpose of analyzing the distributional effects of replacing the federal income tax with a national retail sales tax.[7]

The first component of the database is the IRS Individual Public-Use Micro-Data files for individual federal income tax returns for 2001, the most recent year for which data are available. This file has records on 143,221 tax filers, who are typically households. We assume that each tax filer represents a household, although some couples file separately and other tax filers are members of a larger household. Nevertheless, the vast majority of tax returns filed each year represent households. (The numbers have been slightly masked to ensure that they cannot be used to identify any given taxpayer.) The IRS data set over samples high-income tax filers, but it provides weights that allow us to adjust for this over sampling.

The IRS data set provides a great deal of information on sources of income and on the direct taxes paid. However, the data set does not include information on non-filers. To fill this gap we

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[5] Gale (1998)
[6] Kotlikoff and Rapson (2006): 16.
[7] Feenberg, et al. (1997).

turned to the Current Population Survey (CPS) for 2001, from which we extracted records of households that did not file a federal tax return. By adding 12,532 non-filers from the CPS, we created a new data set with 155,753 observations. These non-filers typically have too little income to be required to file an income tax return, but some may have large amounts of non-taxable income (for instance, from tax-free bonds), or may be wealthy and living off their capital.

The CPS and IRS data sets have some variables in common, including income and "household" size. We were therefore able to combine them into a single data set. The CPS data are also weighted, and we adjusted the weights to ensure that the CPS component of the combined data set "represents" 15 million individuals and households; the IRS component has weights that ensure that it "represents" 130.3 million filers.[8]

At this point, the combined IRS-CPS data set was still incomplete, because it lacked information on expenditure (which households do not report on their income tax forms). It was therefore necessary to impute expenditure (and its main components) to each household. The procedure for doing this was to draw on information from the 2001 Consumer Expenditure Survey (CES), which has very detailed information on household expenditures, based on diaries that households keep for two-week periods, supplemented by interview data.

A practical problem arose, in that the households sampled in the CES are not the same as those in the IRS-CPS data set. So it was necessary to set up a "matching" procedure, as follows:

1. First identify those variables, such as income categories or household size, which are available in both the IRS-CPS and the CES data sets.
2. Next use the CES data to build a regression model that relates expenditure to these common variables, to make the subsequent matching as precise as possible.[9]
3. Based on the regression model, construct a "matching matrix" using the CES data. This is a cross-tabulation of income groups by household size in which the observations are grouped into cells. A typical cell has about 50 observations.
4. For each of the observations in the IRS-CPS data set, find the corresponding cell in the matching matrix and randomly pick one of the CES observations in that cell. Then:
    a. If the household income of the IRS-CPS observation is below $10,000, simply take the expenditure of the picked CES observation and consider that to be the appropriate expenditure level. This is because there is no statistically significant relationship between expenditure and income in the CES for households with annual incomes below $10,000.
    b. If the household income of the IRS-CPS observation exceeds $10,000, use the randomly-picked CES observation to compute the ratio *E/Y* according to the formula $E/Y = \min(E_{CES}/Y_{CES},\ 1+20{,}000/Y_{CES})$. This recognizes that the ratio of spending E to income Y declines as income rises and serves to avoid serious outliers.[10]

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[8] For the ratio of filers to non-filers, see Fleenor and Hodge (2005).

[9] The raw expenditure data in the CES are relatively noisy, being largely based on just two weeks of diary data per household. However, if the data are split into income centiles, a regression of expenditure on income has an *R*-squared of 0.68 and a coefficient on the income term of 0.45, both of which are reasonable.

[10] Out of a total of 5,060 records in the CES survey where income was above $10,000 annually there were just 152 cases where the ratio of expenditure to income exceeded 3.

The result of this matching procedure is a data set that has detailed information on income (in most cases) and tax payments, as well as information on expenditure, including some of the main types of expenditure such as food, rental payments, clothing, and educational expenditures.

The essential information is shown in Table 1; the top panel divides observations into expenditure classes, and the bottom panel divides observations into income classes. Each observation may be thought of as representing a household.[11] The table shows that as one goes from low to high levels of income (per household), the share of income devoted to expenditure falls markedly. The pattern shown here is very similar to that observed a decade earlier by Feenberg, et al.[12] The very high expenditure-to-income ratios observed for low-income households may reflect unreported income (e.g., from the underground economy or transfers from relatives), measurement errors, and/or households that have seen a temporary drop in their income but are maintaining their consumption levels close to a customary level.[13]

One of the most important sources of income, and (implicit) spending, is the rent on owner-occupied housing. While the CES reports data on rental payments, this does not cover most homeowners. So we imputed rental payments for owners in the following way: First we regressed rental payments on income for households paying positive amounts of rent. The result was as follows:

$$\begin{array}{llllll} \text{Rental payments} & = & 12871.3 & + & 0.040\ \text{Income} & \\ & & t = 45.2 & & t = 599.1 & (27{,}803\ \text{observations}) \end{array}$$

This equation shows a good fit ($R^2 = 0.928$), and we considered it to be satisfactory for imputing the rent that owners would have to pay in order to rent rather than own. Where households made mortgage payments that were in excess of the imputed rent we used the former.

Before we can turn to measuring the incidence of taxation, we need to ensure that the numbers are consistent with the National Income and Product Accounts (NIPA). This exercise may be done with the help of Table 2. When food expenditure from our combined IRS-CPS-CES data set is grossed up (using the weights) to the national level, it shows total spending of $767.5 billion, which is somewhat below the level of $967.9 billion reported in the NIPA tables for 2001.

It is a standard finding, both in the United States and elsewhere, that survey data on spending are understated, sometimes dramatically. So our procedure was to take the ratios of NIPA to IRS-CPS-CES spending from the final column in Table 2, and use these to gross up the IRS-CPS-CES spending and income levels. This assumes that every household understates spending and income by the same proportion as every other household; although this is unlikely, there is no obvious alternative to grossing up the numbers in this way.

Somewhat surprisingly, the level of rental payments in the IRS-CPS-CES data set is higher than that reported in the NIPA tables. The value of the imputed rental value of owner-occupied housing is twice the level of the NIPA number, owing, no doubt, to the fact that we were obliged to use a relatively crude imputation procedure. In this case we reduced the IRS-CPS-CES numbers in order to ensure consistency with the national accounts.

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[11] This is not strictly accurate, since married households filing separately are counted as two household units.

[12] Feenberg, et al. (1997): 16.

[13] We look at this issue in more detail in the next section.

Table 1. Ratio of Expenditure to Income, 2001

Expend. Group	By Expenditure Class ($)	Number of Filers	Percent of Total (%)	Mean Expenditure ($)	Mean Income ($)	Expenditure to Income Ratio
1	0 – 10,000	6,791	4.4	8,860	12,503	0.709
2	10,001 – 20,000	49,603	31.9	14,851	28,171	0.527
3	20,001 – 30,000	34,155	21.9	24,598	41,885	0.587
4	30,001 – 40,000	21,954	14.1	34,814	46,323	0.752
5	40,001 – 50,000	13,862	8.9	44,539	55,838	0.798
6	50,001 – 60,000	9,753	6.3	54,707	63,624	0.860
7	60,001 – 75,000	8,421	5.4	66,753	76,300	0.875
8	75,001 – 100,000	5,700	3.7	85,230	99,389	0.858
9	100,001 – 150,000	3,477	2.2	119,832	137,803	0.870
10	150,001 – 250,000	1,388	0.9	186,534	208,290	0.896
11	250,001 – 1,000,000	590	0.38	480,057	649,488	0.739
12	>1,000,000	58	0.04	2,804,198	5,683,178	0.493
	All classes	**155,753**	**100**	**36,736**	**51,459**	**0.714**

Income Group	By Income Class ($)	Number of Filers	Percent of Total (%)	Mean Expenditure ($)	Mean Income ($)	Expenditure to Income Ratio
0	<0	783	0.5	45,463	(90,052)	
1	0 – 10,000	14,865	9.5	28,861	6,234	4.630
2	10,001 – 20,000	32,046	20.6	23,276	15,017	1.550
3	20,001 – 30,000	25,437	16.3	25,236	24,750	1.020
4	30,001 – 40,000	18,724	12.0	28,667	34,735	0.825
5	40,001 – 50,000	13,736	8.8	33,757	44,831	0.753
6	50,001 – 60,000	11,416	7.3	37,962	54,803	0.693
7	60,001 – 75,000	11,823	7.6	41,970	67,006	0.626
8	75,001 – 100,000	12,172	7.8	47,910	86,084	0.557
9	100,001 – 150,000	9,043	5.8	64,655	119,647	0.540
10	150,001 – 250,000	3,638	2.3	74,620	185,438	0.402
11	250,001 – 1,000,000	1,854	1.2	152,334	410,008	0.372
12	>1,000,000	216	0.14	1,005,475	2,926,427	0.344
	All classes	**155,753**	**100**	**36,736**	**51,459**	**0.714**

Table 2. Reconciling Survey Data with the National Income and Product Accounts

Variable	Mean ($)	Total ($ billions)	2001 NIPA ($ billions)	NIPA to IRS/CPS/CES Ratio
Income	51,459	7,475	9,455	1.27
Expenditure	36,736	5,336	7,055	1.32
Finance	408	59	78	1.31
Food	5,284	768	968	1.26
Clothing	1,432	208	298	1.43
Education	542	79	178	2.26
Medical	1,656	241	1,114	4.63
Misc.	14,382	2,089	3,410	1.63
Housing cost	13,032	1,893	1,009	0.53
Memo items:				
House rent	2,472	359	241	0.67
Other house	10,560	1,534	769	0.50

Note: The IRS-CPS-CES file has 155,753 observations. The weights are designed so that these "represent" 145,255,160 consumer units (roughly, households).

B. Attributing Tax Incidence

Having constructed the data set and made it consistent with the NIPA accounts, the next step is to attribute the incidence of the different taxes to individual households. In other words, we need to answer the question, "For any given household, how large is their part of the burden of the personal income tax, or the payroll tax, or the FairTax?"

Our procedure is to first design a set of variables ("proxies") that mirrors the pattern of incidence for each of the taxes that we examine. These are then used to allocate the tax burden across both income and expenditure classes. Thus, for instance, if the estate tax is allocated in proportion to capital income and the top income class receives half of all property income, then half of all the estate tax is attributable to the top income class.

We now consider each tax in turn, and identify and quantify the proxies that we use to allocate the taxes.

1. ***Personal income tax.*** This tax is assumed to fall on the income earner. The IRS data include a measure of "total income tax" payments (variable E10605). So a household that pays 0.01 percent of all the total income tax is assumed to pay 0.01 percent of all personal income tax as measured by the NIPA accounts. The distribution of this variable is set out in Table 4. The total personal income tax collected in 2001 (net of refunds) was $994 billion, which is the amount that has to be allocated across all households.

2. ***Estate and gift tax.*** Following Feenberg, et al., we assume that this tax falls on persons with large amounts of "unearned" income.[14] Specifically, we construct a variable *capinc* that adds dividend income (IRS variable E00600), interest income (E00300), capital gains (E01000), tax-exempt interest (E00400), positive income from S-corporations and partnerships (E26390), and positive income from rents and royalties (E25850). The estate and gift taxes are then allocated in proportion to

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[14] Feenberg, et al., (1997): 27.

capinc. From Table 4 is it clear that the tax largely falls on households with annual incomes of $250,000 or more.

3. ***Payroll taxes.*** Social Security and Medicare taxes are levied on wages at a rate of 15.3 percent (including the employer's contribution) up to $80,400 (in 2001) and at a rate of 2.9 percent on wages above that level. For single individuals it is straightforward to compute the estimated payments of these taxes, but for married couples filing jointly it is more difficult, since we do not have information about the labor income of each. We adopted a rule that for married couples the tax is levied at 15.3 percent on the first $144,720 of wage income and at 2.9 percent thereafter, where the threshold represents 1.8 times the single-filer threshold. The estimated incidence of this tax is listed in the column labeled "Payroll/Est. SSI" in Table 3.

Table 3. "Proxies" for Tax Incidence

Tax to be Allocated:			**PIT***	**Gift/ Estate**	**Corporate Income Tax**				**Payroll**	**FairTax**	**Prebate**
Proxy Variable Used to Allocate Tax:				**Capital Income**	**House Rents**	**Corp. Profits**	**Interest**	**Labor Income**	**Est. SSI**	**Non-ed Expend.**	
Inc. class ($'000)	No. of filers	Percent of total	**$ Value of proxy variable per tax unit**								
< 0	783	0.5	3,399	21,895	9,354	2,427	6,489	10,820	1,497	79,459	2,778
0 - 10	7,974	5.1	44	303	10,697	91	123	3,114	476	39,411	2,705
10 - 20	25,648	16.5	47	453	8,285	109	242	4,329	662	31,922	2,779
20 - 30	23,652	15.2	420	958	9,220	172	565	8,995	1,376	30,649	3,026
30 - 40	18,514	11.9	1,512	1,111	9,497	230	583	15,912	2,434	32,671	2,952
40 - 50	14,507	9.3	2,834	1,316	10,075	263	708	22,991	3,517	35,499	2,936
50 - 60	11,205	7.2	4,077	1,942	10,909	375	967	29,393	4,497	41,590	2,984
60 - 75	13,908	8.9	5,550	2,515	10,673	542	1,158	37,046	5,667	48,576	3,172
75 - 100	15,187	9.8	7,831	3,160	11,195	642	1,318	49,510	7,579	54,410	3,387
100 - 150	14,385	9.2	12,467	5,435	12,085	1,155	1,970	70,326	10,795	66,649	3,615
150 - 250	6,773	4.4	23,806	13,211	14,049	2,660	3,724	103,919	15,947	92,321	3,678
250 - 1000	2,909	1.9	70,942	56,210	19,800	9,134	10,561	193,788	21,366	155,837	3,655
> 1000	308	0.2	629,296	970,377	101,390	93,010	117,188	862,759	40,503	1,066,530	3,506
Memo											
Tax revenue, $ per tax filer			6,843	158	1,040				4,778	15,910	3,091
Tax revenue, $ billions			994	23	151				694	2,512	650

Sources: The 2001 tax revenue numbers are from the Economic Report of the President. A FairTax rate of 25.2 percent is required to replace 2001 federal tax revenues replaced by the FairTax and fund the FairTax prebate.
*PIT = personal income tax.

4. ***FairTax.*** The FairTax is levied on household spending, excluding educational spending, state and local taxes (including state sales and excise taxes), and charitable contributions. In the absence of detailed data on charitable contributions, especially for non-filers, and on the assumption that state and local indirect taxes are levied in proportion to spending, it is appropriate to use non-educational household spending as the proxy for the *distribution* of this tax. Here, as elsewhere, the choice of proxy variable does not affect the overall burden of the tax – which is driven by the total revenue that the tax collects – but it is designed to show which households bear more or less of the tax. Note that the FairTax would be levied on the purchases of new

homes (and rent), while our expenditure data refer to imputed rent. However, this is appropriate when we consider households as a group; at any given moment, some are buying new homes (and paying the FairTax) or renting (and paying the FairTax), while others are not, but the average effect is equivalent to attributing the FairTax to imputed rent.

5. ***Prebate.*** We first calculated the size of the prebate assuming a tax-inclusive rate of 23 percent – the rate proposed in most legislation – for 2001 (the year of our data), and show the results in Table 4. Our data set has information about the number of household members for each tax filer and whether the tax filer is single or married. We are able to combine these two pieces of information to calculate the prebate for each household in our database.

   The figures are aggregated by income class in the last column of Table 3, where it may be seen that the prebate per household rises slightly as one moves from low- to high-income households, reflecting the somewhat larger size of high-income families. The last column in Table 3 serves as a proxy for the actual prebate; in other words, it tracks the pattern of the true prebate, but would only give the actual prebate payments if the FairTax rate happened to be exactly 23 percent. However, a FairTax in 2001 would need to have been levied at a rate of 25.2 percent in order to replace the appropriate taxes (which were higher then, prior to the 2001 and 2003 tax cuts, than they are now). The simulations of the distributional effects of the FairTax, reported below, are all based on the rate of 25.2 percent that would have been appropriate for 2001.

Table 4. Prebate for Households of Different Size and Status, 2001 ($)

Number of persons in household	1	2	3	4	5	6	7 or more
Filing single	1,975.70	2,670.30	3,364.90	4,059.50	4,754.10	5,448.70	6,143.30
Filing as couple		3,951.40	4,646.00	5,340.60	6,035.20	6,729.80	7,424.40

SOURCE: DHHS poverty guidelines, *Federal Register*, Vol. 66, No. 33, February 16, 2001, pp. 10695-10697 plus an amount to prevent a marriage penalty.

6. ***Corporate income tax.*** There is no consensus on the appropriate way to measure the incidence of the corporate income tax. The traditional view, as developed by Harberger, notes that although a tax on corporate profits appears to burden only the owners of corporations, in reality it hits all owners of capital.[15] The idea is that if corporate income is taxed, owners of capital will move their resources to the non-corporate sector (partnerships, residential houses, bonds, etc.). But this inflow of capital into the non-corporate sector will drive down the return to capital, at the margin, there.

   The traditional view assumes that capital is immobile internationally, which was barely plausible in the early 1960s, and is an untenable assumption now. If capital is perfectly mobile internationally, then the net return to capital will be equalized (on a risk-adjusted basis) throughout the world. If any one country raises its tax on capital, then there will be an outflow of capital, and owners of capital will not be hurt by the

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[15] Harberger (1962): 215-240.

> tax (if the country is small) or not hurt much (if the country, like the United States, is large).
>
> Although short-term capital is highly mobile, there is far less mobility, however, over the long term, which is why the real return to capital has not been equalized across countries – Japan's interest rates have, over the past decade, been consistently lower than those in the United States – and there continues to be considerable discussion of the "home bias" in investors' portfolios.
>
> Thus, we have taken an intermediate position between the extreme assumptions of perfect capital mobility on the one hand and perfect capital immobility on the other. We assume that half of the incidence of the U.S. corporate income tax is borne by capital owners in the U.S., and the remainder is shifted onto labor. Specifically, we assume that half of the incidence of the corporate income tax will fall on rental income ($167.4 billion in NIPA in 2001), corporation distributed and undistributed profits ($393.5 billion), and interest ($1,011 billion); the distribution of income from these sources, by household expenditure group, is shown in Table 3. And we assume that the other half of the burden of the corporate income tax is passed on to consumers through their labor income.
>
> A higher corporate income tax leads an owner of capital to plan to ship the capital overseas unless the firm pays a higher gross interest rate, but this in turn increases business expenses, which must be passed on to consumers in the form of higher prices. However, industries whose goods and services are open to international competition (tradable goods) can not raise their prices due above the international price. At the extreme, we can assume some industries operate in markets where capital is perfectly mobile, and their products are subject to perfect international competition and therefore neither capital nor prices can bear the burden of the corporate income tax. As a result, their labor costs must drop by enough to absorb the full weight of the corporate taxes paid by the industry.[16]
>
> In Appendix A we present a sensitivity analysis that explores the effects on the distributional analysis of different assumptions about the incidence of the corporate income tax. The differences turn out to be small, in large part because the corporate income tax in the U.S. is a relatively modest source of tax revenue.

Based on the proxy measures discussed above, we then allocate taxes to households. The resulting incidence, in dollars per taxpaying unit, is shown in Table 5; a similar table, showing each of the taxes as a percentage of income (or expenditure) is shown in Appendix B. The top panel breaks down the per-household incidence by expenditure group and the bottom panel does the same by income category. These are measures of absolute incidence; the average household in the lowest expenditure category pays an average estate/gift tax of $32, while those in the highest expenditure category pay an average of $28,856 for these taxes.

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[16] Harberger (2006): 10.

Table 5. The Incidence of Individual Taxes, 2001

Panel 1: Breakdown by Expenditure Category

Expend. $'000	No. of Filers	Percent of Total	PIT*	Estate / Gift	CIT*	Payroll	FairTax	Prebate	Pre-Tax Income	Expen-diture
			Dollars per Taxpaying Household Unit							
0 - 10	17,363	11.2	1,313	32	358	1,662	2,505	2,570	26,678	7,454
10 - 20	35,073	22.5	2,709	53	538	2,909	4,973	2,799	39,029	14,820
20 - 30	25,807	16.6	3,905	66	724	4,040	8,267	3,044	49,956	24,747
30 - 40	17,948	11.5	4,928	77	858	4,834	11,575	3,157	57,039	34,788
40 - 50	12,498	8.0	5,626	92	963	5,226	14,852	3,260	62,349	44,856
50 - 60	10,411	6.7	6,455	123	1,145	5,473	18,092	3,350	67,778	54,710
60 - 75	11,408	7.3	7,599	132	1,252	6,263	21,985	3,372	75,382	66,956
75 - 100	10,988	7.1	9,447	176	1,478	7,158	28,059	3,519	88,657	85,906
100 - 150	8,831	5.7	12,791	219	1,737	8,613	38,540	3,529	106,102	119,491
150 - 250	3,677	2.4	25,303	564	3,037	12,119	61,387	3,620	173,132	192,508
250 - 1000	1,558	1.0	77,660	2,405	7,908	15,114	132,699	3,633	392,699	411,647
> 1000	192	0.1	539,913	28,856	49,033	29,803	692,299	3,044	2,545,698	2,133,608
Total	**155,753**	**100**	**6,843**	**158**	**1,040**	**4,778**	**15,910**	**3,091**	**65,095**	**48,569**

*PIT = personal income tax; CIT = corporate income tax.

Panel 2: Breakdown by Income Category

Income $'000	No. of Filers	Percent of Total	PIT	Estate / Gift	CIT	Payroll	FairTax	Prebate	Pre-Tax Income	Expen-diture
			Dollars per Taxpaying Household Unit							
< 0	783	0.5	3,399	652	2,180	1,521	26,703	2,778	(113,916)	80,976
0 - 10	7,974	5.1	44	9	150	484	13,244	2,705	5,049	39,764
10 - 20	25,648	16.5	47	13	188	672	10,728	2,779	15,041	32,776
20 - 30	23,652	15.2	420	29	355	1,397	10,300	3,026	24,791	31,347
30 - 40	18,514	11.9	1,512	33	479	2,472	10,979	2,952	34,789	33,192
40 - 50	14,507	9.3	2,834	39	630	3,572	11,930	2,936	44,775	36,034
50 - 60	11,205	7.2	4,077	58	816	4,566	13,977	2,984	54,810	42,049
60 - 75	13,908	8.9	5,550	75	1,008	5,755	16,324	3,172	67,141	49,430
75 - 100	15,187	9.8	7,831	94	1,262	7,697	18,285	3,387	86,386	55,826
100 - 150	14,385	9.2	12,467	162	1,835	10,962	22,398	3,615	120,252	68,516
150 - 250	6,773	4.4	23,806	393	3,039	16,195	31,025	3,678	184,587	95,924
250 - 1000	2,909	1.9	70,942	1,674	7,169	21,698	52,370	3,655	405,146	164,061
> 1000	308	0.2	629,296	28,891	57,282	41,131	358,414	3,506	2,933,090	1,123,190
Total	**155,753**	**100**	**6,843**	**158**	**1,040**	**4,778**	**15,910**	**3,091**	**65,095**	**48,569**

The assumptions that we have made about the incidence of individual taxes are the conventional ones, but they necessarily represent simplifications that are largely, if not completely, accurate. For instance, a higher payroll tax may lead to a lower supply of labor, and the elasticity of labor supply is likely to differ by income group. Such a behavioral response would alter the *distribution* of the burden of the tax, as well as its total burden. However, the information required to incorporate such refinements is generally lacking, which is why we follow the route taken by most researchers – to make basically reasonable, straightforward assumptions about tax incidence.

III. The Incidence of the FairTax

A. Static Effects

The first set of results setting out the incidence of the FairTax is presented in Table 6. The top panel sorts households by expenditure and the second sorts them by gross-of-tax income. The number of filers column shows the distribution of households filing returns by category; in each case the top category has a relatively small number of households, but as a group these form an important source of revenue nonetheless.

Table 6. Static Incidence of the FairTax (i.e., without including effect of FairTax on Economic Growth), 2001

Panel 1: Breakdown by Expenditure Category

			Current Tax		FairTax	
Expend. $'000	**No. of Filers**	**Percent of Total**	**Pre-Tax Income**	**Net Income**	**Net Income with Prebate**	**Change in Net Income**
			Dollars per Taxpaying Household Unit			
0 - 10	17,363	11.2	26,678	23,313	26,743	3,430
10 - 20	35,073	22.5	39,029	32,820	36,855	4,035
20 - 30	25,807	16.6	49,956	41,220	44,732	3,512
30 - 40	17,948	11.5	57,039	46,343	48,621	2,278
40 - 50	12,498	8.0	62,349	50,443	50,757	313
50 - 60	10,411	6.7	67,778	54,582	53,036	-1,547
60 - 75	11,408	7.3	75,382	60,136	56,768	-3,368
75 - 100	10,988	7.1	88,657	70,397	64,117	-6,280
100 - 150	8,831	5.7	106,102	82,741	71,090	-11,651
150 - 250	3,677	2.4	173,132	132,110	115,365	-16,746
250 - 1000	1,558	1.0	392,699	289,613	263,633	-25,981
> 1000	192	0.1	2,545,698	1,898,092	1,856,443	-41,649
Total	**155,753**	**100**	**65,095**	**52,276**	**52,276**	**0**

Panel 2: Breakdown by Income Category

			Current Tax		FairTax	
Income $'000	**No. of Filers**	**Percent of Total**	**Pre-Tax Income**	**Net Income**	**Net Income with Prebate**	**Change in Net Income**
			Dollars per Taxpaying Household Unit			
< 0	783	0.5	-113,916	-121,667	-137,841	-16,173
0 - 10	7,974	5.1	5,049	4,363	-5,490	-9,853
10 - 20	25,648	16.5	15,041	14,120	7,092	-7,028
20 - 30	23,652	15.2	24,791	22,590	17,517	-5,073
30 - 40	18,514	11.9	34,789	30,293	26,762	-3,531
40 - 50	14,507	9.3	44,775	37,701	35,782	-1,919
50 - 60	11,205	7.2	54,810	45,293	43,817	-1,476
60 - 75	13,908	8.9	67,141	54,754	53,989	-765
75 - 100	15,187	9.8	86,386	69,503	71,488	1,986
100 - 150	14,385	9.2	120,252	94,825	101,469	6,644
150 - 250	6,773	4.4	184,587	141,155	157,240	16,085
250 - 1000	2,909	1.9	405,146	303,664	356,431	52,767
> 1000	308	0.2	2,933,090	2,176,491	2,578,182	401,691
Total	**155,753**	**100**	**65,095**	**52,276**	**52,276**	**0**

Net (i.e., disposable) income is shown in the middle column and is taken as the point of reference for further tax changes. The net income with prebate column shows the effect of removing the taxes on personal and corporate income, estate and gift taxes, and payroll taxes, and replacing them with the FairTax (and prebate) on household after-tax (i.e., disposable) income. The FairTax rate is calibrated so as to cover the revenue costs of replacing the taxes that are removed and also the cost of the prebate.

The distributional effects of the FairTax (with prebate) depend on how one views distribution. Using the distribution of expenditure (per tax filing unit), the change favors those at the bottom to the lower middle of the distribution, while leaving those at the middle and at the top of the distribution worse off. If the income distribution is used, the tax favors those with higher incomes (who pay far less in direct taxes) and hurts those with lower incomes (who now pay taxes on their expenditures but save little on direct taxes).

B. Dynamic Effects

The FairTax would not just redistribute resources; it would also boost economic growth, as has been widely documented elsewhere, including in our companion report.[17] Specifically, Tuerck, et al. find that the introduction of the FairTax would boost real output, relative to a baseline, by 7.9 percent in the first year, 10.9 percent by the 10th year, and 10.3 percent in the long run (the 25th year).

These "dynamic" effects have a substantial influence on the distributional consequences of the FairTax; the details are set out in two companion tables, which present the results for the income distribution (Table 7) and expenditure distribution (Table 8).

In Table 7, taxpaying household units are sorted by their income in 2001, from poorest to richest. The average level of expenditure, based on data from the Consumer Expenditure Survey, is shown in column (C). As a general rule, when incomes rise, so do expenditure levels. However, the expenditure level of households with the lowest income levels is curiously high, but this phenomenon has been noted before; some normally affluent households may, from time to time, report little or no (or even negative) income, perhaps due to a capital loss or some other anomalous "shock" to their income.

Column (D) of Table 7 shows what spending levels would be if there were no change in gross income, most current federal taxes were repealed, and the FairTax (with prebate) were put in place. Spending by low-income households would be squeezed, since they would save little on income-related taxes yet spend enough to be hit by the tax on expenditure.

The bottom panel of Table 7 incorporates the dynamic effects of the FairTax, by allowing expenditure to change over time in response to the new incentives inherent in the structure of the FairTax. Expenditure would fall slightly in year 1 (as households save more), but would rise by 6 percent by year 25, relative to a baseline scenario of no change to the FairTax. The expenditure levels shown in column (M) reflect these increases, and the most important numbers are those shown in column (O); the FairTax would raise the spending levels of those in the top half of the *income* distribution while reducing those of the poorer half.

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[17] Tuerck, et al. (2007).

Table 7. Distributional Effects on Expenditure (Static and Dynamic) by Income Category

			Expenditure (based on Consumer Expenditure Survey)			
Income $'000	**No. of Filers**	**Percent of Total**	**Current Law CES Expenditures**	**FairTax Expenditures (net of FairTax) (Static)**	**Change in Expenditures ($)**	**Change (%)**
	(A)	**(B)**	**(C)**	**(D)**	**(E)**	**(F)**
			Dollars per Taxpaying Household Unit			
< 0	783	0.5	80,976	64,803	-16,173	-20
0 - 10	7,974	5.1	39,764	29,911	-9,853	-25
10 - 20	25,648	16.5	32,776	25,748	-7,028	-21
20 - 30	23,652	15.2	31,347	26,274	-5,073	-16
30 - 40	18,514	11.9	33,192	29,661	-3,531	-11
40 - 50	14,507	9.3	36,034	34,115	-1,919	-5
50 - 60	11,205	7.2	42,049	40,573	-1,476	-4
60 - 75	13,908	8.9	49,430	48,666	-765	-2
75 - 100	15,187	9.8	55,826	57,812	1,986	4
100 - 150	14,385	9.2	68,516	75,160	6,644	10
150 - 250	6,773	4.4	95,924	112,009	16,085	17
250 - 1000	2,909	1.9	164,061	216,828	52,767	32
> 1000	308	0.2	1,123,190	1,524,882	401,692	36
Total	**155,753**	**100**	**48,569**	**48,569**	**0**	**0**

… continued

	FairTax Expenditures (net of FairTax)								
Income $'000	**Year 1**	**Change ($)**	**Change (%)**	**Year 10**	**Change ($)**	**Change (%)**	**Year 25**	**Change ($)**	**Change (%)**
	(G)	**(H)**	**(I)**	**(J)**	**(K)**	**(L)**	**(M)**	**(N)**	**(O)**
< 0	64,317	-16,659	-21	68,285	-12,691	-16	69,662	-11,315	-14
0 - 10	29,672	-10,092	-25	31,621	-8,143	-20	32,297	-7,467	-19
10 - 20	25,551	-7,225	-22	27,157	-5,619	-17	27,715	-5,062	-15
20 - 30	26,085	-5,261	-17	27,621	-3,725	-12	28,154	-3,192	-10
30 - 40	29,462	-3,730	-11	31,089	-2,104	-6	31,653	-1,539	-5
40 - 50	33,899	-2,135	-6	35,665	-370	-1	36,277	243	1
50 - 60	40,320	-1,728	-4	42,381	332	1	43,095	1,047	2
60 - 75	48,369	-1,061	-2	50,791	1,361	3	51,631	2,201	4
75 - 100	57,477	1,651	3	60,213	4,386	8	61,162	5,335	10
100 - 150	74,749	6,233	9	78,106	9,590	14	79,271	10,755	16
150 - 250	111,433	15,510	16	116,133	20,210	21	117,764	21,840	23
250 - 1000	215,844	51,783	32	223,883	59,822	36	226,672	62,611	38
> 1000	1,518,143	394,953	35	1,573,179	449,989	40	1,592,273	469,083	42
Total	**48,278**	**-291**	**-1**	**50,658**	**2,089**	**4**	**51,484**	**2,914**	**6**

Table 8 reports the results of an exercise similar to that of Table 7, except that this time taxpaying household units are *sorted by expenditure rather than income* per unit. Columns (E) and (F) show that those in the lower expenditure categories would gain from the introduction of the FairTax. When the dynamic effects are factored in, the eventual effect of the FairTax would be to allow for higher expenditure levels in almost all expenditure groups, covering 85 percent of taxpaying household units (column (O)). However, there would be modest losses among those in the upper-middle expenditure groups (with annual expenditure ranging from $75,000 to $250,000).

Table 8. Distributional Effects on Expenditure (Static and Dynamic) by Expenditure Category

			Expenditure (based on Consumer Expenditure Survey)			
Expenditure $'000	**No. of Filers**	**Percent of Total**	**Current Law CES Expenditures**	**FairTax Expenditures (net of FairTax) (Static)**	**Change in Expenditures ($)**	**Change (%)**
	(A)	**(B)**	**(C)**	**(D)**	**(E)**	**(F)**
			Dollars per Taxpaying Household Unit			
0 - 10	17,363	11.2	7,454	10,884	3,430	46
10 - 20	35,073	22.5	14,820	18,855	4,035	27
20 - 30	25,807	16.6	24,747	28,259	3,512	14
30 - 40	17,948	11.5	34,788	37,066	2,278	7
40 - 50	12,498	8.0	44,856	45,169	313	1
50 - 60	10,411	6.7	54,710	53,164	-1,547	-3
60 - 75	11,408	7.3	66,956	63,588	-3,368	-5
75 - 100	10,988	7.1	85,906	79,626	-6,280	-7
100 - 150	8,831	5.7	119,491	107,840	-11,651	-10
150 - 250	3,677	2.4	192,508	175,763	-16,746	-9
250 - 1000	1,558	1.0	411,647	385,667	-25,981	-6
> 1000	192	0.1	2,133,608	2,091,958	-41,650	-2
Total	**155,753**	**100**	**48,569**	**48,569**	**0**	**0**

… continued Dynamic Income Effects

	FairTax Expenditures (net of FairTax)								
Expend. $'000	**Year 1**	**Change ($)**	**Change (%)**	**Year 10**	**Change ($)**	**Change (%)**	**Year 25**	**Change ($)**	**Change (%)**
	(G)	**(H)**	**(I)**	**(J)**	**(K)**	**(L)**	**(M)**	**(N)**	**(O)**
0 - 10	10,840	3,386	45	11,205	3,751	50	11,332	3,878	52
10 - 20	18,766	3,946	27	19,493	4,673	32	19,745	4,924	33
20 - 30	28,111	3,364	14	29,323	4,576	18	29,744	4,997	20
30 - 40	36,857	2,069	6	38,562	3,774	11	39,153	4,365	13
40 - 50	44,900	44	0	47,098	2,242	5	47,860	3,005	7
50 - 60	52,836	-1,875	-3	55,516	806	1	56,447	1,736	3
60 - 75	63,186	-3,770	-6	66,467	-489	-1	67,605	649	1
75 - 100	79,111	-6,796	-8	83,320	-2,586	-3	84,781	-1,126	-1
100 - 150	107,123	-12,368	-10	112,978	-6,513	-5	115,010	-4,481	-4
150 - 250	174,608	-17,901	-9	184,040	-8,468	-4	187,313	-5,195	-3
250 - 1000	383,197	-28,451	-7	403,367	-8,280	-2	410,365	-1,282	0
> 1000	2,079,157	-54,451	-3	2,183,704	50,096	2	2,219,975	86,367	4
Total	**48,278**	**-291**	**-1**	**50,658**	**2,089**	**4**	**51,484**	**2,914**	**6**

These results probably understate the proportion of people who would benefit from the FairTax, because they assume that households remain in a single expenditure (or income) category throughout their lives. When expenditure (or income) mobility is allowed, fewer households would lose from the FairTax, because few would remain for long in the expenditure (or income) brackets where there are net losses.

IV. Distribution on a per Capita Basis

The analysis up to now has taken the taxpaying household unit as its base. There is a rough correspondence between poor households and poor people, but some large households may have high income *per household* but relatively low income *per person*. It is more satisfactory to examine the incidence of the change to the FairTax based on the distribution of per capita expenditure or income.

To do this we first compute expenditure (and income) per person and then sort the data set into ten deciles. Each decile represents an equal number of persons (not households), labeled from 1 for the poorest group to 10 for the most affluent. Then we show the level of expenditure (or income) under the base case for each decile and for the case where the FairTax (and prebate) replaces the direct taxes.

The results are shown in Table 9, which is the most important and interesting table in this report. The top panels sort individuals into ten equal groups from poorest (decile 1) to richest (decile 10), *as measured by expenditure per capita*, which we argue below is the most satisfactory measure of well-being. Column (A) shows the level of expenditure per capita under the laws in effect in 2001 and may be compared with the level that would be found if current federal taxes were replaced by the FairTax (column (B)). Most people would see a rise in spending, except for those in the top two deciles. But this does not take into account the dynamic effects of the FairTax, which would lift spending by 6 percent (relative to the case of no FairTax). The net effect is that expenditure per capita would rise in all but the top decile. The top right panel of Table 9 shows the level of disposable ("net") income under current law (column (G)) and with the FairTax (columns (H) and (J)) and leads to the same conclusion: The FairTax would help poor people, as measured by expenditure per capita, more than rich people and so would be distinctly progressive.

The bottom panels of Table 9 sort people into ten equal groups by *income per capita*. As noted before, even people in the poorest income per capita deciles have relatively high levels of expenditure per capita. The introduction of the FairTax would not favor these people; they would gain little from the abolition of taxes on income (because their incomes are low), but would pay the FairTax (because their expenditures are substantial), as shown in column (M). This effect is attenuated when the dynamic expenditure-expanding effects of the FairTax are taken into account, but the poorest half of the population (as measured by income per capita) would be worse off due to the FairTax. A similar conclusion emerges from an examination of the pattern of income per capita, shown in columns (Q) through (V) in Table 9. Note the very low average income of those in the poorest income per capita decile – just $1,243 in 2001 – which is surely a poor measure of the well-being of this group of the population.

Table 9. Breakdown of Expenditure and Net Income per Capita by Decile, with and without the FairTax

Expenditure per Capita Deciles	Current Expenditure Survey: Expenditure per Capita					Income per Capita					
	Under Current Laws	With FairTax Net of Tax (Static)	Change (%)	With FairTax Net of Tax (Year 25)	Change (%)	Gross, under Current Laws	Net of Tax, under Current Laws	Net of Tax, under FairTax (Static)	Change (%)	Net of Tax, under FairTax (Year 25)	Change (%)
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
1	3,437	5,040	47	5,246	**53**	11,768	10,245	11,849	16	13,057	27
2	5,900	7,911	34	8,265	**40**	17,486	14,903	16,914	13	18,710	26
3	7,985	9,854	23	10,333	**29**	19,333	16,235	18,104	12	20,089	24
4	10,184	11,996	18	12,607	**24**	21,925	18,183	19,995	10	22,247	22
5	12,725	14,545	14	15,309	**20**	25,610	21,048	22,868	9	25,498	21
6	16,027	17,366	8	18,328	**14**	27,481	22,340	23,679	6	26,502	19
7	20,322	20,863	3	22,082	**9**	29,731	24,012	24,553	2	27,606	15
8	26,404	26,337	0	27,921	**6**	34,770	27,769	27,701	0	31,272	13
9	37,155	35,242	-5	37,471	**1**	41,862	33,207	31,293	-6	35,592	7
10	92,652	83,638	-10	89,197	**-4**	82,028	62,612	53,598	-14	62,023	-1
Total	**23,278**	**23,278**	**0**	**24,675**	**6**	**31,199**	**25,055**	**25,055**	**0**	**28,259**	**13**

Income per Capita Deciles	Current Expenditure Survey: Expenditure per Capita					Income per Capita					
	Under Current Laws	With FairTax Net of Tax (Static)	Change (%)	With FairTax Net of Tax (Year 25)	Change (%)	Gross, under Current Laws	Net of Tax, under Current Laws	Net of Tax, under FairTax (Static)	Change (%)	Net of Tax, under FairTax (Year 25)	Change (%)
	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(T)	(U)	(V)
1	16,406	12,980	-21	13,964	-15	1,243	619	-2,807		-2,680	
2	13,535	11,133	-18	11,945	-12	8,376	7,584	5,181	-32	6,042	-20
3	15,761	13,378	-15	14,324	-9	11,540	10,230	7,847	-23	9,032	-12
4	16,701	14,749	-12	15,751	-6	14,872	12,817	10,865	-15	12,393	-3
5	18,222	16,483	-10	17,576	-4	18,322	15,626	13,887	-11	15,769	1
6	19,525	18,399	-6	19,570	0	22,660	19,010	17,884	-6	20,211	6
7	20,942	20,626	-2	21,883	4	28,229	23,278	22,962	-1	25,862	11
8	25,801	25,593	-1	27,141	5	35,720	28,967	28,759	-1	32,428	12
9	30,390	31,697	4	33,520	10	48,460	38,655	39,962	3	44,939	16
10	55,500	67,747	22	71,077	28	122,569	93,765	106,012	13	118,600	26
Total	**23,278**	**23,278**	**0**	**24,675**	**6**	**31,199**	**25,055**	**25,055**	**0**	**28,259**	**13**

The numbers in Table 10 make another important point: Whether one sorts the population by expenditure per capita or income per capita, the amount of FairTax paid rises as one goes from poorer to richer. This is particularly striking when people are sorted by expenditure per capita (the left half of Table 10), but even when sorted by income per capita, those in the top decile would pay more than four times as much in FairTax (net of prebate) as those in the bottom decile.

Table 10. Gross FairTax Collections and Prebate, by Expenditure and Income per Capita Deciles

Expenditure per Capita Deciles	Expenditure per Capita	FairTax per Capita	Prebate per Capita	Income per Capita Deciles	Expenditure per Capita	FairTax per Capita	Prebate per Capita
1	3,437	1,153	1,234	1	16,406	5,447	1,396
2	5,900	1,973	1,401	2	13,535	4,484	1,289
3	7,985	2,665	1,436	3	15,761	5,184	1,492
4	10,184	3,394	1,464	4	16,701	5,447	1,440
5	12,725	4,229	1,487	5	18,222	5,917	1,482
6	16,027	5,307	1,505	6	19,525	6,340	1,564
7	20,322	6,683	1,505	7	20,942	6,826	1,559
8	26,404	8,620	1,552	8	25,801	8,471	1,511
9	37,155	12,157	1,587	9	30,390	10,033	1,535
10	92,652	30,074	1,644	10	55,500	18,103	1,547
Total	**23,278**	**7,625**	**1,481**	**Total**	**23,278**	**7,625**	**1,481**

A. Summary Measures of Incidence

Some additional insight into the distributional effects may be obtained from Table 11, which reports a number of summary measures of incidence. The Gini coefficient is a widely-used measure of inequality that varies from 0 (perfect equality) to 1 (perfect inequality). Based on our IRS-CPS-CES data set, we find the Gini coefficient for current expenditure per capita to be 0.51, which is indicative of relatively high inequality. The introduction of the FairTax (with prebate) would reduce the inequality of expenditure to 0.48, which is a substantial improvement. On the other hand, the FairTax would raise the inequality of measured income, which again mirrors the findings of Table 9.

The bottom part of Table 11 shows a number of *concentration coefficients*. These are somewhat like Gini coefficients in the sense that they are usually between 0 and 1, and a larger value represents greater inequality. (See Box 1 for further technical details.) But they show the distribution *of the taxes*. Thus the *higher* the concentration coefficient, the more unequally distributed – and hence more “progressive” – the tax. So, for instance, gift and inheritance taxes are very unequally distributed, hitting the rich relatively more than the poor, which makes them “progressive,” as reflected in the high concentration coefficients. At the other extreme, payroll taxes have a low concentration coefficient, which means that they hit everyone more or less equally, representing a high relative burden on the poor.

Without the prebate, the FairTax would be in an intermediate position; its burden would be spread somewhat unequally, with a concentration coefficient (using expenditure to rank individuals) of 0.505. When the prebate is included, the incidence of the tax would be more unequal (concentration coefficient of 0.617). This simply shows that with the prebate in place, poorer people would pay a smaller part of the total FairTax (zero in fact!) while richer people would pay relatively more, so the prebate would make the FairTax substantially more progressive (in the sense of representing a greater relative burden on the rich rather than the poor).

The final column of Table 11 shows that the FairTax is distributed more equally than income is distributed, implying that it represents a relatively higher burden on low incomes than on high incomes. But the middle column of Table 11 shows that the FairTax is distributed less equally than expenditure is distributed, so it represents a relatively higher burden on high incomes than on low incomes. In the next section we discuss which of these two findings should be given more weight.

Table 11. Summary of Measures of Inequality

	Gini Coefficient	**Concentration Coefficient**	
		By Expenditure per Capita	By Income per Capita
Expenditure per capita			
Baseline	0.510		
With FairTax (static)	0.476		
With FairTax (year 25)	0.477		
Income (if > 0)			
Baseline, net of tax	0.473		
With FairTax (static)	0.541		
With FairTax (year 25)	0.536		
Current taxes			
Personal income tax		0.497	0.719
Gift and inheritance taxes		0.663	0.771
Payroll taxes		0.224	0.432
Corporate income taxes		0.391	0.533
Combination of the above		0.388	0.598
FairTax proposal			
FairTax		0.505	0.235
Prebate		0.039	0.024
FairTax net of prebate		0.617	0.286

Source: Based on merged IRS-CPS-CES file. All magnitudes are in per capita terms.

Note: For a tax, a higher concentration coefficient implies greater “progressivity.” But for other items (expenditure, income, subsidies), a lower concentration coefficient (or Gini coefficient) implies greater progressivity.

The key result of the foregoing discussion is that it matters fundamentally how one frames the discussion of the distributional effects of the FairTax. When people are sorted by expenditure per capita, the FairTax is progressive; when they are sorted by income per capita, it is regressive. In the next section we ask which approach better captures the true distributional effects of the FairTax.

Box 1
Measuring the Progressivity of a Tax: Gini and Concentration Coefficients

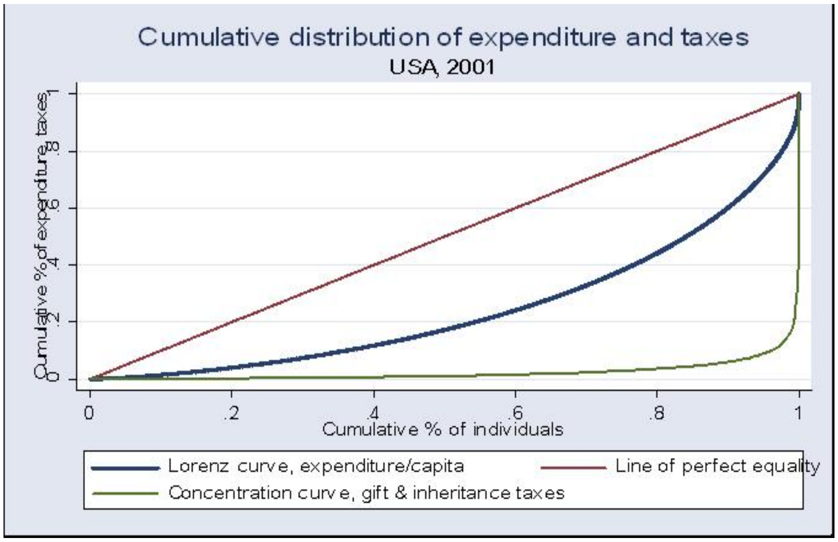
A tax is considered to be *progressive* if the proportion of income (or expenditure) that a person pays in taxation rises as that person's income (or expenditure) rises; otherwise a tax may be *proportional* or *regressive*.

> *Example:* If a worker's income is $1,000 and he pays $100 in tax, his tax rate is 10 percent. If his income doubles to $2,000 and his tax rises to $150, his effective tax rate is just 7.5 percent. Although he is paying more tax in dollar terms, the important point is that he is paying *relatively* less tax, so this tax is regressive. On the other hand, if his tax had risen to $250 then the tax would be progressive, as the new tax rate would be 12.5 percent.

The easiest way to observe tax progressivity is to compute the burden of a tax (or tax system), as a percentage of expenditure or income, for each quintile or decile of the population. The bottom decile consists of the tenth of the population whose expenditure per capita is lowest; the bottom decile is the poorest tenth, and so on.

A more complete, visual appreciation of the progressivity of a tax may be had by examining ***Lorenz curves*** and ***tax concentration curves***. Quite generally, the Lorenz curve is a cumulative frequency curve that compares the distribution of a specific variable (e.g., expenditure per capita) with the uniform distribution that represents equality. To construct the Lorenz curve, we graph the *cumulative* percentage of individuals (starting from lowest expenditure or income per capita and going on to the highest) on the horizontal axis and the *cumulative* percentage of expenditure on the vertical axis. The Lorenz curve, shown by the heavy line in the figure below, is based on U.S. data for 2001. The diagonal line represents perfect equality. Lorenz curves may also be defined for income per capita, or assets per capita, or tax payments per capita.

Let A represent the area between the Lorenz curve and the line of perfect equality and B the area underneath the Lorenz curve. Then the ***Gini coefficient*** is defined as $G_X = A/(A+B)$. If $A=0$, the Gini coefficient becomes 0 which means perfect equality, whereas if $B=0$ the Gini coefficient becomes 1 which means complete inequality. In this example, the Gini coefficient for expenditure per capita is about 0.510, which represents moderately high inequality; the Gini coefficient for (non-negative) after-tax income per capita is 0.480, which represents slightly lower inequality. In practice, Gini coefficients for per capita expenditure or income range from about 0.25 (in Sweden) to about 0.60 (in some Latin American countries); the World Bank's annual *World Development Report* is a convenient source for comparative data on this measure.



The progressivity of a tax may be summarized by comparing the inequality of the tax burden with the inequality of expenditure (or income) per capita. If the tax paid per capita is distributed more unequally than expenditure (or income) per capita, then the tax is progressive, because a relatively large part of the burden is borne by better-off households.

A formal way to show this is by using a ***tax (or expenditure) concentration curve***. On the horizontal axis we sort households from poorest to richest, and on the vertical axis we put the cumulative proportion of tax paid, as shown in the figure. Let D be the area between the tax concentration curve and the line of perfect equality and E the area below the tax concentration curve. Then the quasi-Gini (or concentration) coefficient for the tax is defined as $C_{T,X} = D/(D+E)$. In our case, this takes on a value of 0.693 for gift and inheritance taxes. This means that the burden of these is highly unequal; in effect these taxes fall largely on the well-to-do. The concentration curve for gift and inheritance taxes is shown in the figure.

A concentration curve can also be constructed for government spending – including transfers or rebates such as the prebate – provided that the spending can be allocated across households. The concentration curve for the prebate (not shown here) is very close to the line of perfect equality, indicating that the prebate is distributed relatively evenly across the population (as sorted by expenditure per capita). The concentration coefficient for the prebate is 0.039. In the case of an expenditure, this low number indicates a high degree of progressivity.

B. Income or Expenditure?

Up to now, we have presented the effects of the FairTax on the distributions of both income and expenditure. Typically, the traditional approach has been to examine distributional effects using income; in this section we argue that it is more appropriate to look at the effects on expenditure, and so the FairTax may be considered to enhance equity.

A number of economists have rightly pointed out that annual income may be a poor indicator of ability to pay.[18] Ideally, we would like to measure the effect of a tax or policy change on a household's "permanent income," which reflects lifetime income and hence long-term potential well-being; but this is unrealistic, since we need a more immediate measure and cannot wait for years to determine whether someone is truly poor or not. So in practice, the issue reduces to the question of whether households should be classified based on current expenditure per capita or on current income per capita.[19]

The practice in most developed countries is to classify households by income. This is because income appears to be easier to measure in societies where most activity is in the formal sector and where few people are self-employed. Also, in such countries information on income is readily available.

However, one can safely say that the use of income per capita to sort individuals prior to computing the tax burden has the effect of overstating tax regressivity. This is because a significant fraction of those in the lowest income deciles are there only because they are temporarily poor – the result of a bad harvest, a layoff, a new baby, going to college – and their current income does not properly reflect their "permanent" income.

There is thus a strong case for constructing deciles using expenditure per capita. To the extent that households are willing and able to smooth their consumption stream, this should better mirror permanent income. Moreover, the use of expenditure deciles typically gives more reasonable results in the "poorest" decile. When income is used, many of the households in that decile report no income or negative income, which is clearly not a sustainable situation.

It is possible that the use of expenditure per capita deciles leads to an overadjustment, and so may understate tax regressivity. Gilbert Metcalf makes this argument based on his efforts to measure permanent income using longitudinal data from the United States. He finds that households do not appear to be able or willing to smooth their expenditure streams so completely that they fully reflect permanent income. Therefore, he argues that expenditure is a noisy proxy for permanent income.

If, at all points in time, a lower income were matched by a lower expenditure, then it would not matter which measure – income or expenditure – we use to sort the households. But in practice, the correlation between income per capita and expenditure per capita is not close. This may be seen very clearly in Table 12, which cross-tabulates all of the taxpaying units in our sample by income per capita deciles against expenditure per capita deciles. If income and spending were

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[18] Metcalf (1997).

[19] There are other possibilities. For instance, one could sort households by expenditure per adult equivalent, putting more weight on adults than children. In practice the most important decision is about whether to use expenditure or income.

perfectly aligned, we would expect all individuals to fit into the boxes along (or close to) the diagonal, in which case each diagonal element would be 10 (percent). Instead, many individuals are found far from the diagonal. For instance, almost a quarter of those who are in the lowest per capita expenditure group are in the fifth-highest per capita income group or above. And conversely, 49 percent of those in income category 1 (the poorest) are in spending category 4 or above.

Table 12. Percentage Distribution of Households by Expenditure per Capita and Income per Capita Deciles, 2001

Income Group	Expenditure per Capita Deciles										
	1 (poor)	2	3	4	5	6	7	8	9	10 (rich)	Total
1	**2.4**	1.5	1.2	1.2	0.9	0.7	0.6	0.5	0.4	0.6	10.0
2	2.3	**1.6**	1.4	1.2	1.0	0.8	0.6	0.4	0.3	0.4	10.0
3	1.8	1.3	**1.5**	1.2	1.1	1.0	0.8	0.6	0.3	0.5	10.0
4	1.3	1.2	1.3	**1.4**	1.2	1.0	1.1	0.8	0.5	0.3	10.0
5	0.9	1.2	1.1	1.2	**1.2**	1.2	1.2	1.0	0.8	0.4	10.0
6	0.6	1.0	1.1	1.0	1.1	**1.2**	1.2	1.2	1.2	0.5	10.0
7	0.4	0.9	0.8	1.0	1.1	1.2	**1.2**	1.4	1.3	0.7	10.0
8	0.2	0.6	0.6	0.7	1.0	1.1	1.4	**1.4**	1.7	1.3	10.0
9	0.1	0.4	0.6	0.8	0.8	0.9	1.1	1.5	**1.9**	1.8	10.0
10	0.0	0.2	0.3	0.5	0.8	0.8	0.9	1.2	1.8	**3.5**	10.0
Total	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	100.0

Note: The figures in the table show the percentage of individuals in each cell.

There are three main explanations for these findings: Noisy or faulty data from the CES, the fact that the people in the lowest income classes are not necessarily poor, and the fact that many of them are borrowers.

Sabelhaus and Groen studied the consumption patterns visible in the CES.[20] Only about half of the 1,500 families covered by the 1992 survey completed all four interviews and answered all the income questions. The authors based their work largely on the completed surveys, which are likely to suffer from sampling bias and thus be less reliable. Despite this problem, and other technical issues (such as how to account for "expenditures" on consumer durables), it has been found that except for the under-reporting of property income, the CES shows consistency with other surveys such as the CPS.[21]

The available research suggests that the people in the lowest income deciles are not necessarily poor. In line with the Permanent Income Hypothesis (PIH), some base their consumption on their usual income and keep a constant standard of living even though their incomes vary from month to month or year to year. Sabelhaus and Groen simulate consumption-to-income ratios under the PIH and find that in the bottom-income decile, the ratio is 1.67 rather than the 2.30 they found in the CES.[22] However, in the top-income decile, the PIH predicts a ratio of 0.76 as compared with the ratio of 0.64 in the CES.

People in the lower-income categories often have income from the "underground economy" or they are simply borrowers. Feenberg, et al. explain that unreported income could be from

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[20] Sabelhaus and Groen (2000): 438.

[21] Branch (1994): 47-55.

[22] Sabelhaus and Groen (2000): 434.

activities not within the current income tax reporting system and that this income is used to purchase goods in the formal economy.[23] The high ratios of consumption to income also occur because people are borrowing money now – perhaps for education or housing – and will pay it back over a long time period once they are making a salary. This is highly likely for college or postgraduate students who borrow to pay for school but will eventually have a full-time job.

These results, which are not unique to our study, bolster our argument that sorting by current expenditure per capita is more appropriate than sorting by income per capita when considering the long-term distribution of well-being. People spend money relative to their lifetime income, or their lifetime wealth, and are only partly constrained by their *current* income.

In short, if it is accepted that expenditure is a better measure of "lifetime well-being" than income, it follows that it is more useful to focus on the distribution of expenditure (per capita). The Gini coefficient for expenditure per capita falls from 0.51 under the current tax code to 0.48 under the FairTax, which represents, on average, an increase in progressivity.

V. Conclusion

The purpose of this paper is to determine the distributional effects of the FairTax. For this purpose we have built a database that includes both income and expenditure information on households and individuals. We have also extended our analysis to include not only the static effects on distribution, but also dynamic effects, by considering the effect that the FairTax would have on the economy as a whole. We argue that it is most appropriate to sort households and individuals on the basis of expenditure, on the grounds that this best represents "lifetime" well-being. On this basis, we show that the FairTax benefits households and individuals in the lower expenditure categories, while imposing a higher burden on those in the higher expenditure brackets. When the dynamic effects of the FairTax are included, only those households in the top per-capita-expenditure decile would be worse off after the 25th year of the implementation of the tax, and then by a relatively small amount. Thus, we conclude that replacing income and payroll taxes with the FairTax would make the United States federal tax system more progressive than it is now and would benefit the average individual in almost all expenditures deciles.

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[23] Feenberg, et al. (1997): 18.

Appendix A. Sensitivity of the Results to Different Assumptions about the Incidence of the Corporate Income Tax

There is limited agreement on the appropriate way to model the incidence effects of the corporate income tax. In this appendix we report the results using two extreme alternative assumptions:

- First, we assume that the economy is closed, so capital does not enter or leave the U.S. (the "closed economy" assumption).
- Second, we assume that the economy is so open that capital enters and leaves easily (the "open economy" assumption).

Table A1. Sensitivity of Distributional Effects, Measured by Expenditure per Capita, to Changes in Assumptions about the Incidence of the Corporate Income Tax

Panel 1. Using expenditure per capita

Expenditure per capita deciles (by persons)	**Base Case**	**FairTax (Year 25)**	**Change (%)**	**FairTax (Year 25)**	**Change (%)**	**FairTax (Year 25)**	**Change (%)**
		Closed economy		Open economy		Prefered assumptions	
1 (poorest)	3,437	5,182	51	5,311	55	5,246	53
2	5,900	8,207	39	8,323	41	8,265	40
3	7,985	10,244	28	10,422	31	10,333	29
4	10,184	12,553	23	12,662	24	12,607	24
5	12,725	15,239	20	15,378	21	15,309	20
6	16,027	18,270	14	18,385	15	18,328	14
7	20,322	21,987	8	22,178	9	22,082	9
8	26,404	27,870	6	27,971	6	27,921	6
9	37,155	37,490	1	37,453	1	37,471	1
10 (richest)	92,652	89,718	-3	88,677	-4	89,197	-4

Panel 2. Using income per capita

Income per capita deciles (by persons)	**Base Case**	**FairTax (Year 25)**	**Change (%)**	**FairTax (Year 25)**	**Change (%)**	**FairTax (Year 25)**	**Change (%)**
		Closed economy		Open economy		Preferred assumptions	
1 (poorest)	16,406	14,026	-15	13,902	-15	13,964	-15
2	13,535	11,925	-12	11,965	-12	11,945	-12
3	15,761	14,298	-9	14,350	-9	14,324	-9
4	16,701	15,700	-6	15,802	-5	15,751	-6
5	18,222	17,503	-4	17,649	-3	17,576	-4
6	19,525	19,490	0	19,650	1	19,570	0
7	20,942	21,795	4	21,971	5	21,883	4
8	25,801	27,010	5	27,271	6	27,141	5
9	30,390	33,417	10	33,624	11	33,520	10
10 (richest)	55,500	71,587	29	70,568	27	71,077	28

As discussed in the text, the truth is probably between these two extremes. Interestingly, the choice of incidence assumption does not have a major effect on distribution, as Table A1 makes clear.

Appendix B. Supplemental Tables

Table B1. The Incidence of Individual Taxes as a Percent of Income, 2001

Panel 1: Breakdown by Expenditure Category

Expenditure Class ($)	Freq.	Percent (%)	PIT	Estate / Gift	CIT	Payroll	FairTax Net of Prebate	Pre-Tax Income	Expen-diture
			As Percent of Pre-Tax Income						
0 – 10,000	17,363	11.2	4.9	0.1	1.3	6.2	-0.2	100.0	27.9
10,001 – 20,000	35,073	22.5	6.9	0.1	1.4	7.5	5.6	100.0	38.0
20,001 – 30,000	25,807	16.6	7.8	0.1	1.5	8.1	10.5	100.0	49.5
30,001 – 40,000	17,948	11.5	8.6	0.1	1.5	8.5	14.8	100.0	61.0
40,001 – 50,000	12,498	8.0	9.0	0.1	1.5	8.4	18.6	100.0	71.9
50,001 – 60,000	10,411	6.7	9.5	0.2	1.7	8.1	21.8	100.0	80.7
60,001 – 75,000	11,408	7.3	10.1	0.2	1.7	8.3	24.7	100.0	88.8
75,001 – 100,000	10,988	7.1	10.7	0.2	1.7	8.1	27.7	100.0	96.9
100,001 – 150,000	8,831	5.7	12.1	0.2	1.6	8.1	33.0	100.0	112.6
150,001 – 250,000	3,677	2.4	14.6	0.3	1.8	7.0	33.4	100.0	111.2
250,001 – 1,000,000	1,558	1.0	19.8	0.6	2.0	3.8	32.9	100.0	104.8
>1,000,000	192	0.1	21.2	1.1	1.9	1.2	27.1	100.0	83.8
All classes	**155,753**	**100**	**10.5**	**0.2**	**1.6**	**7.3**	19.7	**100.0**	**74.6**

Panel 2: Breakdown by Income Category

Income Class ($)	Freq.	Percent (%)	PIT	Estate / Gift	CIT	Payroll	FairTax Net of Prebate	Pre-Tax Income	Expen-diture
			As Percent of Pre-Tax Income						
<0	783	0.5	-3.0	-0.6	-1.9	-1.3	-21.0	100.0	-71.1
0 – 10,000	7,974	5.1	0.9	0.2	3.0	9.6	208.7	100.0	787.6
10,001 – 20,000	25,648	16.5	0.3	0.1	1.2	4.5	52.8	100.0	217.9
20,001 – 30,000	23,652	15.2	1.7	0.1	1.4	5.6	29.3	100.0	126.4
30,001 – 40,000	18,514	11.9	4.3	0.1	1.4	7.1	23.1	100.0	95.4
40,001 – 50,000	14,507	9.3	6.3	0.1	1.4	8.0	20.1	100.0	80.5
50,001 – 60,000	11,205	7.2	7.4	0.1	1.5	8.3	20.1	100.0	76.7
60,001 – 75,000	13,908	8.9	8.3	0.1	1.5	8.6	19.6	100.0	73.6
75,001 – 100,000	15,187	9.8	9.1	0.1	1.5	8.9	17.2	100.0	64.6
100,001 – 150,000	14,385	9.2	10.4	0.1	1.5	9.1	15.6	100.0	57.0
150,001 – 250,000	6,773	4.4	12.9	0.2	1.6	8.8	14.8	100.0	52.0
250,001 – 1,000,000	2,909	1.9	17.5	0.4	1.8	5.4	12.0	100.0	40.5
>1,000,000	308	0.2	21.5	1.0	2.0	1.4	12.1	100.0	38.3
All classes	**155,753**	**100**	**10.5**	**0.2**	**1.6**	**7.3**	19.7	**100.0**	**74.6**

Table B2. The Incidence of Individual Taxes as a Percent of Expenditure, 2001

Panel 1: Breakdown by Expenditure Category

Expenditure Class ($)	Freq.	Percent (%)	PIT	Estate / Gift	CIT	Payroll	FairTax Net of Prebate	Pre-Tax Income	Expen-diture
			As Percent of Expenditure						
0 – 10,000	17,363	11.2	17.6	0.4	4.8	22.3	-0.9	357.9	100.0
10,001 – 20,000	35,073	22.5	18.3	0.4	3.6	19.6	14.7	263.4	100.0
20,001 – 30,000	25,807	16.6	15.8	0.3	2.9	16.3	21.1	201.9	100.0
30,001 – 40,000	17,948	11.5	14.2	0.2	2.5	13.9	24.2	164.0	100.0
40,001 – 50,000	12,498	8.0	12.5	0.2	2.1	11.6	25.8	139.0	100.0
50,001 – 60,000	10,411	6.7	11.8	0.2	2.1	10.0	26.9	123.9	100.0
60,001 – 75,000	11,408	7.3	11.3	0.2	1.9	9.4	27.8	112.6	100.0
75,001 – 100,000	10,988	7.1	11.0	0.2	1.7	8.3	28.6	103.2	100.0
100,001 – 150,000	8,831	5.7	10.7	0.2	1.5	7.2	29.3	88.8	100.0
150,001 – 250,000	3,677	2.4	13.1	0.3	1.6	6.3	30.0	89.9	100.0
250,001 – 1,000,000	1,558	1.0	18.9	0.6	1.9	3.7	31.4	95.4	100.0
>1,000,000	192	0.1	25.3	1.4	2.3	1.4	32.3	119.3	100.0
All classes	**155,753**	**100**	**14.1**	**0.3**	**2.1**	**9.8**	**26.4**	**134.0**	**100.0**

Panel 2: Breakdown by Income Category

Income Class ($)	Freq.	Percent (%)	PIT	Estate / Gift	CIT	Payroll	FairTax Net of Prebate	Pre-Tax Income	Expen-diture
			As Percent of Expenditure						
<0	783	0.5	4.2	0.8	2.7	1.9	29.5	-140.7	100.0
0 – 10,000	7,974	5.1	0.1	0.0	0.4	1.2	26.5	12.7	100.0
10,001 – 20,000	25,648	16.5	0.1	0.0	0.6	2.1	24.3	45.9	100.0
20,001 – 30,000	23,652	15.2	1.3	0.1	1.1	4.5	23.2	79.1	100.0
30,001 – 40,000	18,514	11.9	4.6	0.1	1.4	7.4	24.2	104.8	100.0
40,001 – 50,000	14,507	9.3	7.9	0.1	1.7	9.9	25.0	124.3	100.0
50,001 – 60,000	11,205	7.2	9.7	0.1	1.9	10.9	26.1	130.3	100.0
60,001 – 75,000	13,908	8.9	11.2	0.2	2.0	11.6	26.6	135.8	100.0
75,001 – 100,000	15,187	9.8	14.0	0.2	2.3	13.8	26.7	154.7	100.0
100,001 – 150,000	14,385	9.2	18.2	0.2	2.7	16.0	27.4	175.5	100.0
150,001 – 250,000	6,773	4.4	24.8	0.4	3.2	16.9	28.5	192.4	100.0
250,001 – 1,000,000	2,909	1.9	43.2	1.0	4.4	13.2	29.7	246.9	100.0
>1,000,000	308	0.2	56.0	2.6	5.1	3.7	31.6	261.1	100.0
All classes	**155,753**	**100**	**14.1**	**0.3**	**2.1**	**9.8**	**26.4**	**134.0**	**100.0**

Note: The FairTax rate is reported on a tax-exclusive basis, net of demogrant.

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