Tax Administration and Collection Costs: The FairTax vs. the Existing Federal Tax System

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Executive Summary

Representative John Linder and Senator Saxby Chambliss filed legislation in the form of H.R. 25/S. 1025, the Fair Tax Act of 2007 (from here on H.R. 25). This legislation calls for abolishing most existing federal taxes, including the personal and corporate income taxes, payroll taxes, and the estate and gift taxes and replacing them with a progressive national consumption tax. Under the FairTax, the federal government would raise almost all of its revenue by taxing consumer purchases at a "tax-inclusive" rate of 23 percent.[1] The FairTax is progressive, as it provides for a rebate of taxes (called a "prebate") to be paid to each household on its spending up to the poverty level.

H.R. 25 has several objectives, including tax simplification and economic growth. It abolishes the Internal Revenue Service (IRS), the federal agency that currently collects and administers federal taxes, and shifts the vast majority of these responsibilities to the individual state sales tax authorities.[2] Adopting such a fundamental reform would have implications for the entire process of collecting and administering taxes in the United States. The roles and responsibilities of governments at all levels, businesses, and individuals would change under the FairTax. Individuals would no longer file tax returns, businesses would be responsible for collecting and remitting the tax to the states, and state governments would process the revenue collections and forward the appropriate revenue amount to the federal government.

These changes prompt important questions pertaining to the cost of administering and complying with the FairTax:

(1) What are the administration, collection, and filing costs under the FairTax, and whom do they fall upon?

(2) How do these costs compare to costs under the current system?

(3) Would these costs increase or decrease under the FairTax when compared to the current system?

This report attempts to provide answers to these questions.

For this study, BHI estimates the net (additional) administration, collection, and filing costs (usually called simply "administrative costs") of the FairTax by considering each of the revenue collection layers individually – retailers and service providers (sellers), state governments, and the federal government. BHI also accounts for the savings the private sector would enjoy because of no longer having to file the income, estate, gift, and payroll taxes that are replaced by the FairTax. We do our analysis for 2005, the most recent year for which there are data on states' collection agencies' operating costs or budget appropriations.

[1] This means that the tax on a good priced at $77.00 would be $23.00, so that the total price is $100.00. The "tax-exclusive" rate would be about 30 percent (= 23/77).

[2] H.R. 25 prohibits any funding of the IRS three years after its enactment. It provides for collection of the FairTax by state sales tax authorities and specifies how the federal government and the states will jointly administer the tax. It requires the Secretary of the Treasury to establish an Office of Revenue Allocation to arbitrate any disputes between states regarding the destination of sales for purposes of allocating sales tax revenue among the states.

As shown in Table 1, we find that the FairTax saves $346.51 billion in administrative costs in 2005 when compared to the administrative costs of the taxes it replaces. This implies a saving of $14.70 per $100 of the gross revenue the FairTax would collect. We find these estimates robust enough to ensure that even if any additional spending is needed under the FairTax to hold avoidance and evasion to their current levels, this increased spending would never overcome the savings the FairTax brings when compared to the current taxation system.

Table 1: FairTax Net Administrative Costs (Savings)

Cost component	$ billions
1. Net sellers' FairTax collection costs	60.31
2. Net state governments' FairTax collection costs	9.66
3. Net federal savings	(9.38)
4. Private sector savings	(407.11)
5. Total FairTax costs (savings) [1. + 2. + 3. + 4.]	***(346.51)***
6. Total FairTax costs (savings) per $100 of revenue	***(14.70)***
Billions of $ except per $100 figures. Numbers may not add up because of rounding.	

I. Introduction

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 one such proposal. Essentially, it aims to replace most current federal taxes with a national retail sales tax. In 2005, Representative John Linder and Senator Saxby Chambliss filed legislation in the form of H.R. 25. Such a fundamental overhaul of the federal tax system would impact nearly every individual and institution in the United States. The tax collection, administration, and filing processes would be completely revamped under the FairTax.

Under current tax law, individuals are required to file income, estate, and gift tax returns. Under the FairTax, these obligations disappear as individuals pay the FairTax when they buy goods and services, but the obligation of filing would shift to the retailer or service provider selling those goods and services.

Businesses currently file corporate income taxes and both file and collect payroll (employment) and personal income taxes. Instead, under the FairTax, businesses would collect the FairTax from their retail customers and remit the revenue to the state sales tax authority.

The federal government currently collects the taxes that would be replaced under the FairTax. At the same time, it processes personal income taxes and payroll taxes for its employees and pays employer payroll taxes. Under the FairTax, the federal government would pay the FairTax on its purchases and collect it on the wages and salaries of its employees.

State and local governments currently process the personal income tax and payroll tax for their employees. Under the FairTax, these governments pay the FairTax on all their purchases and on the wages paid to their employees. Moreover, state governments, if they so choose, would administer and collect the FairTax from the sellers.

In this report, we estimate how replacing the above-mentioned federal taxes with the FairTax would affect the costs of tax administration, collection, and filing. In our analysis, we do not consider tax evasion or avoidance issues that could be raised when replacing the tax system, although we recognize that these matters affect the cost of tax revenue collection. Our purpose is to estimate the effect of adopting the FairTax on costs, assuming tax avoidance and evasion remain at their current levels. Our estimates also assume that the FairTax would have been in place for a long time, so we do not estimate the start-up costs that would be incurred in establishing the FairTax. The motivation for this is that we want to compare apples to apples. Were we to compare the costs of both establishing and running the FairTax with only the costs of running the existing system, we would be comparing apples to oranges, not apples.

The paper is organized into ten sections. The following section reviews the literature on the matter. Section III presents the estimation of the revenues to be collected under the FairTax. Section IV explains the FairTax revenue collection process. Section V estimates the net costs to the sellers, while section VI does the same for state governments and section VII for the federal government. Section VIII estimates the net savings of the private sector, and section IX puts it all together with an estimate of the total costs/savings that the FairTax brings about. Section X summarizes our conclusions.

II. Literature Review

A review of the academic literature indicates that no consensus exists regarding the costs of administration, collection, and filing for different types of tax systems. Some researchers conclude that income taxes are less costly compared to sales taxes, while others find the opposite. Researchers even disagree over the factors that determine the relative administrative cost of a tax. However, there is consensus, as suggested by Shlomo Yitzhaki, that one goal of tax policy is to reduce the "social cost" of taxation by minimizing administrative costs and, thus, the deadweight loss of the system.[3]

The obvious obstacle to comparing the administrative costs of the current system with the FairTax, as William Gale and Janet Holtblatt note, is that no system like the FairTax has ever been in place.[4] Therefore, any study attempting to make this comparison would need to make assumptions about the administrative costs of a hypothetical sales tax and then estimate those costs, as we do here.

Joel Slemrod states that the costs of administering sales taxes are generally lower than the costs of administering the federal income tax, and notes that, for a commodity tax system, administrative costs are less the more uniform the rates are, concluding that moving toward an optimal system would entail making tax rates more uniform.[5] He adds that a national retail sales tax could, however, entail higher costs than a federal income tax, owing to enforcement problems that arise with a much higher rate than the currently enforced ones. Matthew N. Murray argues that a national retail sales tax would have high administrative and enforcement costs much like the current income tax system.[6] He argues that a radical improvement in compliance cannot be expected with a national retail sales tax. However, he does point out that available evidence does not support a claim that higher sales tax rates would drastically increase administrative costs and noncompliance.

Researchers also link the growth in compliance costs seen over the last century with the growing complexity of the existing federal tax code. Scott A. Hodge, J. Scott Moody, and Wendy P. Warcholik contend that the intricacy (complexity) of the tax code increases the administrative costs.[7] Their study calculated that the number of sections in a subchapter of the income tax code increased by 615 percent from 1954 to 2005. Evidence of this kind suggests that the FairTax,

[3] Yitzhaki (1979).
[4] Gale and Holtblatt (1998).
[5] Slemrod (2000).
[6] Murray (1997).
[7] Hodge, Moody, and Warcholik (2005).

with its single rate and absence of complex rules, would significantly reduce administrative costs.

The tax structure can increase compliance costs by increasing noncompliance due to complexity. James Alm, Roy Bahl, and Matthew N. Murray note that the structure of a tax system provides incentives for tax evasion and that, in considering tax reform, it is therefore important to consider how taxpayers will respond to changes in the tax structure.[8] Marsha Blumenthal and Joel Slemrod note that only a few studies account for the relationship between changes in the tax structure and changes in compliance.[9] Their study found that certain features of tax reform influenced compliance costs for individual taxpayers. For example, reducing the fraction of itemizers reduced compliance costs, because calculating itemized deductions is time consuming. Nevertheless, the authors say they could not determine if greatly simplifying the tax system would greatly reduce compliance costs.

It is important to specify how administrative costs are measured. Blumenthal and Slemrod delineate filing cost as being the monetary value of time spent on tasks related to filing tax returns as well as expenditures on goods and services used to facilitate the filing procedure.[10] Most studies measure administration and collection costs of tax systems in terms of cost per dollar of revenue collected. The lower the cost per dollar of revenue collected, the more efficient the tax system.

Although studies do not exist which compare a national retail sales tax with the current tax system, many studies do estimate the administrative costs of the existing state sales taxes and the current federal system. John F. Due and John L. Mikesell provide the most recent estimate of administrative costs for state sales taxes.[11] They surveyed eight states from 1991 to 1993 and reported administrative costs ranging from $0.41 to $1.00 per $100 of revenue collected. As a quick comparison, we note that the IRS reports a collection and administration cost of $0.60 per $100 of revenue collected in 1993 and of $0.44 in 2005.

Government administration and collection costs capture only a portion of the administrative costs of a tax system. Individuals and businesses also incur costs of paying and filing their taxes, and a complete estimate of administrative costs should include all three components. Moody estimates individual filing costs to have been $104 billion in 2002 at a rate of $30 per hour.[12] Slemrod has a lower dollar estimate for individual compliance costs in 2004; $85 billion at a rate of $20 per hour.[13]

The Government Accountability Office's 2005 report cites a number of studies of business compliance costs with the federal income tax such as the already-mentioned study by Moody, wherein he estimated that retailers spent $85 billion in 2002 at an estimated cost per hour of $37.26.[14] Joel Slemrod and Varsha Venkatesh put the number much lower, at $22 billion in

[8] Alm, Bahl, and Murray (1990).
[9] Slemrod and Blumenthal (1992).
[10] Ibid.
[11] Due and Mikesell (1994).
[12] Moody (2002).
[13] Slemrod (2004).
[14] Moody (2002).

2001; however, this study excluded the largest 1,350 corporations and all businesses with less than $5 million in assets.[15] Slemrod later reviewed his previous studies and estimated that retailers spent a total of $40 billion, at a rate of $20 per hour, complying with the federal income tax in 2004.[16]

PricewaterhouseCoopers conducted the first national estimate of retailer compliance with local and state retail sales tax over the period of August 2004 through March 2005.[17] This study found that in 2003 the average annual state and local retail sales tax compliance costs were $3.09 per $100 of sales tax revenue collected. As a percentage of taxable sales, costs for smaller businesses were found to be more than six times greater than those for the large retailers.

Robert J. Cline and Thomas S. Nuebig asked how compliance costs for multi-state retailers are affected by the different complexities of the sales tax.[18] In their analysis, they use the 1998 Washington Department of Revenue study as the base for estimates of the compliance costs for companies with different sizes and serving different states.[19]

Hodge, Moody, and Warcholik note that compliance costs vary by type of taxpayer, income level, and state.[20] They estimate that individuals, businesses, and nonprofits spent an estimated 6 billion hours, at a cost of $265.1 billion, in 2005 complying with the federal income tax code – a figure that they expect to rise dramatically over the next decade.

In 1996, the Tax Foundation estimated the total compliance costs of the current federal tax system, the flat tax, the USA Tax system (a business cash flow tax), and the national retail sales tax.[21] They found that the current federal system cost $225 billion in 1996, while all three alternatives would reduce costs dramatically. They estimate that the flat tax would cost $9.2 billion, the USA Tax $36 billion, and the national retail sales tax just $8.2 billion.

Building on the work of these studies and using estimates of our own, we calculate the cost of administration, collection, and filing for governments, businesses, and individuals for the FairTax and for the current system. We next proceed to estimate FairTax revenue collections.

III. FairTax Revenue Collections

In this section, we estimate the tax revenue that would have been collected under the FairTax. To do this, we calculate the FairTax base in 2005 and the spending-neutral tax rate, following the

[15] Slemrod and Venkatesh (2002).
[16] Slemrod (2004).
[17] PricewaterhouseCoopers. "Retail Sales Tax Compliance Costs: A National Estimate," Volume One: Main Report 9, April 2006. Prepared for Joint Cost of Collection Study. Available at http://www.pwc.com/Extweb/pwcpublications.nsf/docid/E1F22DB30D07DBA785257164006DDE9E/$file/jccs-part-1-vol-.pdf.
[18] Cline and Nuebig (1999).
[19] Washington State Department of Revenue. "Retailers' Cost of Collecting and Remitting Sales Tax," December 1998. Available at http://dor.wa.gov/docs/reports/Retailers_Cost_Study/retailstudy.doc.
[20] Hodge, Moody, and Warcholik (2005).
[21] Hall (1996).

methodology set forth in Bachman, et al.[22] We then present the corresponding estimates of the gross and net FairTax revenue that would have been collected in 2005. The reason for selecting 2005 is that it is the most recent year for which there are data on the operating costs of state government revenue collection agencies, data on budget appropriations, or other data necessary for our calculations.

At first glance, the FairTax is a revenue-neutral proposal and may be seen as a proposal to replace the amount of revenue that the federal government would have under current law dollar-for-dollar. However, because the imposition of a sales tax is likely to affect prices, simply replacing the dollar value of the current tax revenue may not allow the federal government to maintain the real value of the services it currently provides. The tax-inclusive FairTax rate for 2007 is set to be 23 percent in H.R. 25, but many authors have argued that this rate would not raise enough revenue to keep the federal government's purchasing power constant. Besides keeping current spending constant in real terms, the estimated rate must also ensure raising enough additional revenue to finance the FairTax rebate of taxes on poverty level spending (prebate) and the administrative credit paid to businesses and governments collecting the tax.

Table 2: FairTax Base and Rate Estimates

A. Revenue	$ billions
1. Revenue to be replaced	1,943.14
2. IRS savings	(9.74)
3. Net revenue to be replaced [1. + 2.]	***1,933.40***
B. Base	
4. Private consumption	8,274.10
5. Federal government consumption	834.10
6. State and local government consumption	969.74
7. Gross tax base [4. + 5. + 6.]	***10,077.93***
C. Base adjustments	
8. Non-taxed transfers adjustment	249.51
9. Prebate base adjustment	(2,011.30)
10. Administrative credit base adjustment	(48.02)
11. Adjusted tax base [7. + 8. + 9. + 10.]	***8,268.12***
12. Tax-inclusive rate [3. ÷ 11.]	***23.38%***
13. Tax-exclusive rate [3. ÷ (11. - 3.)]	***30.52%***

Billions of $ except percentage figures. Numbers may not add up because of rounding.

Source: Authors' estimations using CBO and IRS data for 2005.

Bachman and his coauthors accounted for these facts when estimating the base and rate that would be needed for 2007.[23] However, because we had selected 2005 as our reference year for

[22] Bachman, et al. (2006).
[23] Ibid.

this study, we needed to calculate the base and the rate that would have been needed in 2005 to then estimate the revenue that the FairTax would have raised that year. For this, we apply the methodology used by Bachman, et al. to 2005.[24]

Table 2 presents our estimates of the FairTax base and the rates for 2005. We start on line 1 with the net revenue collected by the taxes that would be replaced by the FairTax in 2005, which the IRS reports to be $1,943.14 billion.[25] Since the IRS will neither be responsible for administering the taxes that are being replaced nor for most of the FairTax administrative operations, this will reduce the revenue needed to finance the IRS.[26] We estimate these "savings" to be $9.74 billion and reflect them on line 2.[27] Therefore, the net revenue to be replaced in 2005, as shown on line 3, is $1,933.40 billion. As mentioned before, there are other items that would adjust the revenue needed under the FairTax. Such items are: Non-taxed federal government transfers, the prebate, and the administrative credit to be given to sellers and state and local governments. However, the spending needed in these categories depends on the rate in place. Since we are calculating the rate at this point, we have to make the corresponding adjustments to the base, not the revenue itself, in order to accommodate for these changes in spending.

We now consider the FairTax base. In very basic terms, this base is composed of all private and government final consumption of goods and services, except for spending on education. In section B of Table 2, we present the estimation of the FairTax base for 2005.[28] Private consumption is estimated at $8,274.10 billion, federal government consumption at $834.10 billion, and state and local government consumption at $969.74 billion. The gross base calculated by adding these three numbers is estimated to be $10,077.93 billion, as shown on line 7.

We now present the estimates of the adjustments made to the base to accommodate for changes in the revenue that are related to the FairTax rate. The first adjustment is to account for the fact that the change of tax system reduces the nominal amount of federal government transfers needed. Since there is lower spending in real dollars in this category, this is equivalent to increasing the base. Consequently, on line 8 we present an estimate of an increase to the base of $249.51 billion to accommodate for the lower revenue needed for federal transfers. The FairTax must also raise sufficient revenue to fund the FairTax prebate and the administrative credit. The prebate is a rebate of taxes (albeit in advance, giving rise to the term "prebate") to qualified households that effectively exempts all households' purchases up to the poverty level. The administrative credit is the amount that the sellers and the state and local governments will keep from the revenue they collect. Since these are both increases in the revenue to be collected, we accommodate for them when calculating the tax rate by decreasing the base. On line 9 we show

[24] The explanation of the methodology used to estimate the gross base, the adjusted base, and the rates is beyond the scope of this study so we refer the reader to the work of Bachman, et al. (2006).
[25] IRS Data Book, FY 2005, Publication 55b.
[26] Note that these savings only require an adjustment of the revenue, and not an adjustment of the base of the FairTax. Less spending by the federal government implies lower taxes paid by taxpayers, which implies a higher disposable income. Marginal propensity to consume is very close to 1 for the United States, which implies that this drop in federal consumption will be picked up by private consumption. Finally, since the tax base for the FairTax is all consumption (except education), this means that the base does not need to be adjusted.
[27] We explain how we estimated the IRS savings in Section VII.
[28] The estimates for this section of the table were obtained using the same CBO estimates as in Bachman, et al. (2006) but for 2005. We refer the reader to Table 2 on page 667 of that paper for the specific sources.

an estimate of ($2,011.30) billion for the adjustment needed in the base because of the prebate, and on line 10 we present an estimate of ($48.02) billion for the adjustment needed because of the administrative credit. By adding lines 7 through 10, we obtain the estimate of the adjusted FairTax base, which is $8,268.12 billion as presented on line 11.

By dividing the estimate on line 3 by the estimate on line 11, we calculate the estimated tax-inclusive FairTax rate for 2005 of 23.38 percent (line 12), which implies a tax-exclusive FairTax rate for 2005 to be 30.52 percent (line 13). With the tax-inclusive FairTax rate estimate, we now calculate the tax revenue that would have been collected by the FairTax in 2005. We should note at this point that since the federal government will reimburse households with the prebate, we can consider the amount of revenue collected inclusive of the prebate as the FairTax gross tax revenue, and the amount of revenue collected minus the prebate as the net FairTax revenue.

Table 3: FairTax Revenue Estimates

A. From FairTax revenue	$ billions
1. Gross FairTax revenue	2,356.60
2. Prebate	(470.32)
Net FairTax revenue [1. + 2.]	***1,886.28***
B. From revenue to be replaced	
4. Net revenue to be replaced	1,933.40
5. Transfers revenue adjustment	(58.34)
6. Administrative credit revenue	11.23
Net FairTax Revenue [4. + 5. + 6.]	***1,886.28***

Billions of $. Numbers may not add up because of rounding.

Source: Authors' estimations using CBO and IRS data for 2005.

Table 3 presents our FairTax revenue estimates. We calculate the net FairTax revenue from two perspectives as a check to see that our estimations balance. First, we calculate the gross FairTax revenue by multiplying the estimate of the gross tax base on line 7 of Table 2 by the tax-inclusive rate of 23.38 percent, which yields the estimate of $2,356.60 billion presented on line 1 of Table 3. We next calculate the amount of the prebate by multiplying the estimate on line 9 of Table 2 by the same 23.38 percent rate. This yields the negative estimate of $470.32 billion presented on line 2 of Table 3. We then add these two estimates to get the net FairTax revenue of $1,886.28 billion.

The second perspective we use is to adjust the estimate that we show on line 3 of Table 2 with the revenue estimates of the transfer reduction and the administrative credit. The thinking behind this perspective is that the revenue the FairTax must be collecting, without counting the prebate, must equal the net revenue that was being collected before, adjusted by the changes in spending to keep federal government spending constant. Therefore, in part B of Table 3, on line 4 we present again the value of the net revenue to be replaced: $1,933.40 billion. Since the federal government's transfer requirements decrease, we must reduce this revenue by the amount no longer needed for those transfers. The negative amount of $58.34 billion, presented on line 5,

is calculated by multiplying the estimate on line 8 of Table 2 by 23.38 percent.[29] Similarly, since the administrative credit is an increase in the needed revenue, we multiply the estimate on line 10 of Table 2 by 23.38 percent and obtain an estimate of $11.23 billion.[30] Adding lines 4 through 6 of Table 3, we obtain the net FairTax revenue of $1,886.28 billion.

These estimates assume that there is no monetary accommodation and, consequently, that prices do not increase. If prices were to increase, the base values would be adjusted accordingly, and the tax-inclusive rate would yield the necessary revenue. The advantage of the assumption of no monetary accommodation is that we can compare the revenues and costs between the two taxation systems directly. We observe, therefore, that the net revenue under the FairTax in 2005 is lower than the net revenue replaced, in real terms. The prebate is a tool for redistribution of income, meaning that it simply causes the FairTax to collect and return additional revenue. Therefore, at this point, we observe that, overall, taxpayers would have to pay less in taxes to maintain the current services provided by the federal government under the FairTax than it does under current law, which implies that the FairTax would increase the taxpayers' purchasing power.

IV. FairTax Revenue Collection Process

The process of collecting the FairTax from the consumer and putting the revenue in the hands of the federal government, as specified by H.R. 25, involves three sectors: Sellers, which include both retail stores and service providers, state governments, and the federal government itself. The sellers collect the tax on their sales to individuals, state and local governments, and the federal government. They then deduct the administrative credit (0.25 percent) from their collections and forward that money to the state sales tax authority. The state then remits the tax collections from the retailers plus the tax on their purchases of labor (compensation paid to government employees) minus the administrative credit to the U.S. Treasury. Finally, the federal government receives the monies from the states and remits the FairTax on its labor purchases. It should be noted that, for this paper, federal governmental enterprises are considered to belong to the sellers' sector and not the federal government sector. This is because government enterprises collect the FairTax on the services they sell to the consumer, as do businesses in the private sector.

In order to compare the administrative costs under both tax systems, we must identify the net (additional) costs/savings that the FairTax would bring in each of the three layers of FairTax revenue collection, which would allow for more precise pinpointing of specific issues. This presents a difficulty, however, since the savings that the FairTax would bring to the private sector (individuals, businesses, and nonprofit organizations) cannot be easily distributed among these three layers. The simple solution, which we apply in this study, is to consider the savings to the private sector separately and bring all the estimates together, later, to calculate the total costs/savings resulting from the implementation of the FairTax. We start by estimating the net costs to sellers of collecting the FairTax from their sales and sending the money to the state governments. We then consider the costs to the state governments of administering the FairTax

[29] The negative rate shows that an increase in the base is equivalent to a reduction in the revenue.
[30] The negative rate shows that a decrease in the base is equivalent to an increase in the revenue.

as well as collecting the tax revenues from the sellers, the taxes on the labor purchases of local governments and their own labor purchases, and finally remitting the money to the U.S. Treasury. We then estimate the net savings that the federal government would enjoy, while accounting for the costs of collecting the FairTax on its labor purchases as well as processing the prebate payments. Before bringing it all together to estimate the total costs/savings, we estimate the savings in the private sector. We point out that when estimating the costs of collecting the FairTax revenues and remitting them to the appropriate authority, we do so under the assumption that the FairTax, like the existing federal tax system, would have been in place for a long time, for the reasons given in the introduction. Thus, we are not considering the start-up costs of implementing and then running the FairTax.

V. Retailers and Service Providers (Sellers)

In this section, we calculate the costs that retailers and service providers would have incurred in 2005 to collect and remit the FairTax from buyers and send the collections to their respective state government. Under the FairTax, sellers of final goods and services would collect a large share of the FairTax and remit it to the state government after retaining their share of the administrative credit. To estimate the costs of performing those tasks in 2005, we use the national average cost of $3.09 per $100 of revenue estimated by PricewaterhouseCoopers based on a study of the costs incurred by businesses nationwide collecting and remitting state sales taxes.[31] There are two underlying assumptions behind this estimate: First, the cost per dollar of revenue in 2005 is the same as in 2003; second, the collection of a national sales tax with the same base across states and three times more revenue across the nation would be, on average, at least as efficient as collecting sales taxes across the states with different bases and exemptions. We believe this second assumption to be very conservative because of the following reasons:

- In their study, Cline and Neubig show how retailers collecting revenues in different states bear significantly higher compliance costs than retailers collecting in just one state.[32] They claim that "compliance cost drivers affecting multistate retailers include wide variations in what is taxable across states, significant differences in which consumers and what uses are exempt, and many tax base and rate changes passed each year."[33] Their estimates for firms with tax collection responsibilities in 15 states range from 7 to 9 times those of retailers collecting from one state. For firms with responsibilities in 46 states, the costs range from 12 to 14 times the costs for firms with responsibilities in one state, varying with the firm size. The FairTax presents two opportunities to reduce these costs:
    - The FairTax imposes a single, uniform rate on all goods and services independently of the state or locality in which the purchase is made. This means that the retailers would not have to determine whom to collect the tax from and what rate to charge them, thus reducing the time and effort required to comply with the tax when compared to current state retail sales taxes; and

[31] Pricewaterhouse Coopers, op. cit.
[32] Cline and Neubig (1999).
[33] Cline and Neubig (1999) p. iii.

- The FairTax would also provide an excellent opportunity, and some pressure, for states and localities to align their sales tax bases with the FairTax and to "piggyback" on the FairTax for the calculation of their respective sales taxes. This practice is currently followed by a number of states on their income taxes, so it seems reasonable to expect that they would take such a measure. Unfortunately, we cannot estimate how much the FairTax would save in compliance costs if they did so.

- Through our estimates, we find that the revenue that would have been raised in 2005 under the FairTax is more than 3.5 times the total sales tax revenue raised by the states in that same year. As we will see when we consider the state government sector, this increase in revenue decreases the total cost per $100 of revenue, causing a gain in efficiency for the states. It is therefore more than reasonable to think that this could also be the case for retailers and service providers. Unfortunately, no data is available that we could use to estimate whether these economies of scale are present or not.

Since the estimate we are using from the PricewaterhouseCoopers report is expressed in terms of cost per dollar of revenue, we need to estimate the FairTax revenue that retailers and service providers would collect in order to estimate the total cost that they would be incurring. As we explained previously, the only amount of revenue that retailers and service providers would not collect is the revenue from state and local governments' purchase of labor and the revenue from the federal government's purchase of labor. Therefore, on line 1 of Table 4, we start our estimation of the revenue collected by retailers and service providers with the gross FairTax revenue from line 1 of Table 3.

Table 4: Sellers' FairTax Collections

1. Gross FairTax revenue	2,356.60
2. Federal government wages revenue	(62.41)
3. State and local government wages revenue	(92.97)
4. Revenue to be collected by retailers [1. + 2. + 3.]	***2,201.21***

Billions of $. Numbers may not add up because of rounding.

Source: Authors' estimations using CBO and IRS data for 2005.

We then estimate the tax revenue that would be collected on the federal government's labor purchases by multiplying the estimated federal purchases component of the base on line 5 of Table 2 by the estimated share of government wages in their purchases given by Bachman, et al. (32 percent) and by the FairTax-inclusive rate we calculated in Table 2 (23.38 percent).[34] This calculation yields an estimate of $62.41 billion, which enters with a negative sign on line 2 of Table 4. Similarly, in order to calculate the amount of revenue that would be raised on state and local government labor, we multiplied the estimate of the state and local government purchases on line 6 of Table 2 by the estimate of the share of state and local government wages in their consumption given by Bachman, et al. (59 percent) and by the FairTax-inclusive rate.[35] The

[34] Bachman, et al. (2006) p. 671.
[35] Ibid.

revenue thus estimated is $92.97 billion, which also enters with a negative sign on line 3 of Table 4. Finally, summing lines 1 through 3 in Table 4 yields an estimate of $2,201.21 billion.

Having the estimate of the FairTax revenue collected by retailers and service providers in 2005, we can use the estimates from the PricewaterhouseCoopers report to estimate the costs that would be incurred in collecting and remitting such revenue. In their study, PricewaterhouseCoopers presented estimates of the gross retail sales tax cost, 3.09 percent, and of the national average of net implicit transfers, 0.60 percent. The PricewaterhouseCoopers estimates are from businesses that collect and submit sales tax to the states, which is the same obligation that they would have with the FairTax.

Net implicit transfers include both vendor discounts of 0.50 percent and net float of 0.10 percent. Vendor discounts are a practice very similar to the administrative credit of the FairTax, where 26 states and the District of Columbia allow the retailer to retain a percentage of the sales taxes collected. We note that the weighted average national vendor discount estimated in this report is very similar to the administrative credit percentage in H.R. 25 of approximately 0.50 percent. However, the 0.50 percent under the FairTax includes both the administrative credit of sellers and the administrative credit of state governments. At the seller level, we could apply only 0.25 percent to the revenue collected there. The net float is generated by the interest the seller gains by being able to hold on to the tax collected before remitting it to the states. These gains have to be deducted from the sellers' gross collection costs.

Table 5: Sellers' Costs under the FairTax

	$ Billions	Per $100 of Revenue
1. Gross collection costs	68.02	3.09
2. Administrative credit	(5.50)	(0.25)
3. Net float	(2.20)	(0.10)
4. Net collection costs [1. + 2. + 3.]	***60.31***	***2.74***

Numbers may not add up because of rounding.
Source: Authors' estimates and PwC report.

In Table 5, we calculate the costs to retailers and service providers under the FairTax. On line 1, we present the gross cost of collecting and remitting the FairTax that we obtain by multiplying the estimate of the revenue collected by retailers on line 4 of Table 4 by 3.09 percent, which gives our estimate of $68.02 billion. Line 2 presents the estimate of the administrative credit the retailers would get, calculated by multiplying the estimate of the revenue collected by them on line 4 of Table 4 by 0.25 percent, which is $5.50 billion. Line 3 gives the estimate of the net float of $2.20 billion that is calculated by multiplying the estimated revenue collected by the sellers on line 4 of Table 4 by 0.10 percent. Adding lines 1 through 3 in Table 5 yields an estimate of $60.31 billion for the net costs to sellers to collect and remit the FairTax.

VI. State Governments

In this section, we estimate the costs to state governments of administering the FairTax. State governments play a key role under the FairTax, for H.R. 25 makes them responsible for most of

the administrative tasks of the tax. Under the FairTax, states will collect the revenue from retailers, administer the registration of retailers and service providers as sellers, and administer the registration of households for the prebate. However, since most states already have a sales tax and/or an income tax in place, these registration costs would be almost negligible, for both sellers and/or households would already be registered in one form or another with the states.

Several authors have emphasized that for those states which currently have a personal income tax that "piggybacks" on the federal personal income tax, there would be an increase in the cost of administering their existing personal income tax because the FairTax repeals the federal income tax. This argument needs some consideration.

The presence of a state income tax that uses the same base as the federal personal income tax does not imply that the state government's employees who have to administer it do not know how the federal government's personal income tax base is calculated for individuals with different socioeconomic characteristics. If these administrators are performing their jobs correctly, they very well ought to know this by heart. The removal of the federal personal income tax will not cause these administrators to suddenly lose that knowledge and, therefore, should not increase the cost of the state government to administer its own personal income tax if it decided to keep having the personal income tax. This argument is valid as well for any type of state corporate income tax that may relate its base to the federal corporate income tax. In addition, the presence of the federal FairTax would create pressure on the states that currently have a sales tax in place to conform the state tax base to the FairTax base, thus simplifying the tax collection process. In this study, however, we assume that there is no change in the composition of the states' taxation systems. Further, because of the argument presented above, we do not consider that costs would increase for states with income taxes because of the mere disappearance of the federal income taxes.

Currently, there are five states that do not have a sales tax in place. The cost of administering the FairTax for those states would be arguably higher than for the states that have been administering their own form of a sales tax for some time now. On the other hand, H.R. 25 allows for these states to rely on other states to administer and collect the FairTax for them. Therefore, this higher cost would be incurred only if state governments that currently do not have a sales tax decided to administer the FairTax collected in their states, so the higher cost would not be a direct consequence of the imposition of the FairTax.

Also, the higher cost would be temporary; in time, these states would reach the same level of efficiency as the states with a sales tax currently in place. As mentioned above, we estimate the costs of administering, collecting, and filing the FairTax under the assumption that it has been in place for a long time. Our methodology in this section therefore estimates the total cost for state governments using only the 45 states that currently have a sales tax in place, which implies that we are assuming that the other 5 states and the District of Columbia will incur the same average cost as the 45 states that currently have a sales tax in place.[36]

[36] Even though the District of Columbia has a sales tax in place, we were not able to find all of the required data for our analysis for it, so we did not include it in our models.

Table 6: State Governments' FairTax Collections

1. Revenue remitted by retailers	2,195.71
2. State and local government wages revenue	92.97
3. Revenue collected by state governments [1. + 2.]	***2,288.68***

Billions of $. Numbers may not add up because of rounding.

Source: Authors' estimations using CBO and IRS data for 2005.

As in the previous section, our first step is to estimate the amount of revenue that the state governments would be collecting. Under the FairTax, the state governments would receive the money previously collected by the sellers once they have deducted the corresponding administrative credit. Consequently, the estimate on line 1 of Table 6 is $2,195.71 billion, which equals the estimate on line 4 of Table 4 ($2,201.21 billion) times 99.75 percent (1 minus 0.25 percent). In addition to this revenue, the state governments are responsible for collecting the FairTax on labor purchases by themselves and by local governments in their state. Therefore, on line 2 of Table 6, we include the estimate of the FairTax on state and local government wages presented on line 3 of Table 4, which comes to $92.97 billion. The total revenue collected by the state governments would, therefore, be the sum of these two figures, $2,288.68 billion, as presented on line 3 of Table 6.

Having estimated the revenue for which state governments would be responsible, we next estimate how much it would cost them to perform the tasks associated with the collection of that revenue. There are no recent studies to which we can turn for an estimate. The most recent – and most referred to in the literature – study is the one from Due and Mikesell where the data used is from 1991 to 1993 for only eight states.[37] They found that the costs of administering state sales taxes for the different state governments ranged from $0.41 to $1.00 per $100 of revenue collected. Since this study uses data of over a decade ago and for only eight states, we decided to make our own estimates of the costs that state governments would be incurring.

The first piece of data we need in order to estimate the costs of collecting the FairTax revenue for the states is an estimate of the costs that states incur in collecting their own sales taxes. In our data gathering effort, we found that most state tax administration and collection agencies do not disaggregate their administration and collection costs by type of tax. Most do not even report their total administration costs. In most cases, we based our estimate on the budget appropriations of the state agency responsible for tax revenue collection, although there were some few instances where the agency would report their expenditures. In those rare cases, we used the reported expenditure as our estimate for the cost. We note that by using estimates based on the agencies' budget appropriations our estimates are very likely to exceed the true values, making our estimate of the cost of the FairTax for the states in 2005 a conservative one.

H.R. 25 requires sellers to remit the FairTax to the state sales tax authority. Although states' sales taxes and the FairTax are different, the relationship with the sellers required by both is the same. The FairTax simply increases the total amount of sales tax revenue that the states would be collecting. This has a double effect: It increases the total revenue collected and the share of

[37] Due and Mikesell (1994).

the total revenue collected in the form of a sales tax. Therefore, we required detailed revenue collection data for each state so that the share of sales tax revenue can be computed.

Table 7: Fiscal Years and Data Sources for the Different States

State	FY	Source of Cost Data	Source of Revenue Data
Alabama	2004	2004 DOR Annual Report	2004 DOR Annual Report
Arizona	2005	2006-2007 Executive Budget	2005 DOR Annual Report
Arkansas	2005	2005 DFA Actual Expenditures	2005 DFA Annual Report
California	2005	2007 Budget Expenditures	2005 Revenue Collections Census Bureau
Colorado	2005	2007 Appropriations Report	2006 Legislative Staff Council Forecast
Connecticut	2005	2007 Budget Financial Summary	2005 DOR Annual Report
Florida	2005	2005 Final Budget Report	2005 DOR Annual Report
Georgia	2005	2007 Governor's Budget Report	2007 Governor's Budget Report
Hawaii	2005	2007 DOT Budget Report	2005 DOT Annual Report
Idaho	2005	2007 DOR Operating Budget	2005 STC Annual Report
Illinois	2005	2007 State Budget	2005 DOR Annual Report
Indiana	2005	2005 Budget Appropriations	2005 DOR Annual Report
Iowa	2005	2007 Agency Operating Budget	2005 DOR Annual Report
Kansas	2005	2007 Governor's Budget Report	2005 DOR Annual Report
Kentucky	2005	2005 DOR Annual Report	2005 DOR Annual Report
Louisiana	2005	2007 Budget Appropriations	2005 DOR Annual Report
Maine	2005	2007 Budget Appropriations	2007 Budget Revenues
Maryland	2005	2007 Operating Budget	2007 BRE Annual Report
Massachusetts	2005	2007 Budget Proposal	2005 DOR Annual Report
Michigan	2004	2006 Executive Budget	2004 Treasurer Annual Report
Minnesota	2005	2007 Budget Revenue	2005 Supplement to Tax Handbook
Mississippi	2005	2006 Budget	2005 STC Annual Report
Missouri	2005	2006 Revenue Appropriations	2005 DOR Financial and Statistical Report
Nebraska	2005	2007 Agency Appropriations	2005 DOR Annual Report
Nevada	2005	2005 DOT Annual Report	2005 DOT Annual Report
New Jersey	2004	2004 Budget Appropriations	2004 DOT Annual Report
New Mexico	2004	2006 Budget Appropriations	2004 Revenue Collections Census Bureau
New York	2005	2006 Budget Appropriations	2005 DTF Annual Report
North Carolina	2005	2005 DOR Budget Appropriations	2005 Tax Guide
North Dakota	2005	2007 Budget Appropriations	2005 STC Biennial Report
Ohio	2005	2005 DOT Annual Report	2005 DOT Annual Report
Oklahoma	2004	2007 Executive Budget	2004 TC Annual Report
Pennsylvania	2005	2007 Executive Budget	2005 Tax Compendium Statistical Supplement
Rhode Island	2005	2007 DOA Budget	2005 House Staff Revenues Facts
South Carolina	2005	2005 DOR Annual Report	2005 DOR Annual Report
South Dakota	2005	2007 Governor's Budget	2005 DOR Annual Report
Tennessee	2005	2007 Governor's Budget	2005 DOR Statistics
Texas	2005	2005 Proposed Budget	2007 Comptroller Biennial Report
Utah	2005	2007 Budget Summary	2005 TC Annual Report
Vermont	2005	2007 Executive Budget	2007 Executive Budget
Virginia	2005	2008 DOT Budget	2005 DOT Annual Report
Washington	2005	2005 DOR Annual Report	2005 DOR Annual Report
West Virginia	2005	2007 Executive Budget	2007 Executive Budget
Wisconsin	2005	2007 Executive Budget	2005 DOR Revenue Collections Report
Wyoming	2004	2005 DOR Annual Report	2004 Revenue Collections Census Bureau

For each state that has a sales tax, we therefore gathered data on tax collections and on administration costs, as defined above, for fiscal year 2005. For six of the states there were no data available for fiscal year 2005, so we gathered the appropriate information for fiscal year 2004. Table 7 shows the sources and dates for administrative cost and revenue data by state.

For all 45 states, we estimated the cost per $100 of revenue collected using the estimates of total cost and total revenue collected for each state. For those states where data was collected for fiscal year 2004, we inflated the total revenue using the consumer price index. We then estimated the total cost in fiscal year 2005 by multiplying the inflated revenue by the cost per $100 of revenue. We estimate the total revenue collected by state revenue collection agencies at $645.14 billion and the total cost in fiscal year 2005 incurred by these agencies at $5.41 billion. These estimates imply a total cost for the states of $0.84 per $100 of revenue collected, which falls within the range given by Due and Mikesell.[38] Even though it is on the upper end of that range, we have already explained that this estimate is very likely to be a high estimate.

Table 8: Descriptive Statistics

	Cost $ millions	Revenue $ millions	IncDum	SalesShare
Mean	120.27	14,336.53	0.91	0.38
Median	82.66	8,610.35		0.34
Standard deviation	168.82	17,150.62	0.29	0.13
Sample variance	28,501.77	294,143,656.30	0.08	0.02
Kurtosis	15.57	12.97	7.26	1.19
Skewness	3.68	3.19	-2.99	1.23
Range	967.38	97,303.82	1.00	0.58
Minimum	9.47	1,130.86	0.00	0.19
Maximum	976.85	98,434.69	1.00	0.77
Sum	5,412.32	645,143.81	41.00	17.11
Count	45	45	45	45

Table 8 shows descriptive statistics for the following variables:

- **Cost –** estimate of the state's total tax collection and administration cost in millions of dollars, by state;
- **Revenue –** estimate of the state's total revenue collected in millions of dollars, by state;
- **IncDum –** 1 if the state has an income tax (personal, corporate or both) in place, 0 otherwise; and
- **SalesShare –** share of sales tax revenue of total tax revenue collected, by state.

[38] Due and Mikesell, op. cit. The range they reported was $0.41 to $1.00 per $100.

The average estimated state cost of administering and collecting tax revenues is $120.27 million, which is higher than the median, with costs ranging from $9.47 to $976.85 million. The total estimated state cost is approximately $5.41 billion. The average estimated state revenue is approximately $14.34 billion, also higher than the median estimate for revenue, with values ranging from $1.13 billion to $98.43 billion. The total amount of state revenue collected is $645.14 billion, which is just 28.19 percent of the aggregate amount of the FairTax revenue to be collected.

The 45 states have different tax revenue collection structures, which may affect their respective administration and collection cost structure. Income, sales, and property taxes are the largest sources of revenue for all states in the United States, and all states have at least one of these taxes as a source of revenue. Since all 45 states have a sales tax, we created a dummy variable for whether the state also had any type of income tax in place to test whether this would have any effect in the cost function. The dummy shows that 41 out of the 45 states (91 percent) had an income tax in place and 4 did not.

Finally, the FairTax increases the amount of tax revenue in the form of a sales tax that the states collect. This may have an impact on the cost structure as well, so we consider the share of total revenue that is currently collected as a sales tax. We observe that, on average, states with a sales tax in place collect 38 percent of their total revenue in the form of a sales tax, which is very slightly higher than the median value of 34 percent. This value ranges from a minimum of 19 percent to a maximum of 77 percent.

In our effort to estimate the state cost of administering and collecting tax revenues, we considered two different dependent variables: Total cost and total cost per $100 of revenue. The models where we used total cost as the dependent variable outperformed their respective counterparts in which total cost per $100 of revenue was used.[39]

Here we present five models using total cost as the dependent variable. All of these models allow for different cost/revenue relationships depending on whether the state has an income tax in place or not. The models considered are:

- **Model 1 –** different intercept for states with and without income tax, cubic relationship with revenue, and a linear relationship with sales share;

- **Model 2 –** different intercept for states with and without income tax, quadratic relationship with revenue for states with no income tax, cubic relationship with revenue for states with income tax, and linear relationship with sales share;

- **Model 3 –** different intercept for states with and without income tax, quadratic relationship with revenue, and linear relationship with sales share;

- **Model 4 –** same intercept for states with and without income tax, quadratic relationship with revenue, and linear relationship with sales share; and

[39] Note that total cost per $100 of revenue can simply be computed from the estimate of total cost. If the true model structure is the one with total cost as the dependent variable, then the models with total cost per $100 of revenue would be invalid, since the error term would be heteroskedastic.

Table 9: Ordinary Least Squares Estimates

Parameter	Model 1	Model 2	Model 3	Model 4	Model 5
Revenue	-0.2433	0.0284***	0.0284***	0.0265***	0.0262***
	(0.1621)	(0.0038)	(0.0037)	(0.0033)	(0.0033)
$Revenue^2$	1.20E-05	-3.72E-07***	-3.72E-07***	-3.45E-07***	-3.45E-07***
	(7.41E-06)	(7.36E-08)	(7.31E-08)	(6.88E-08)	(6.97E-08)
$Revenue^3$	-1.41E-10				
	(8.39E-11)				
IncDum	-311.7965	38.8218	31.5184		
	(211.3580)	(30.8860)	(28.9046)		
Revenue × IncDum	0.2450	-0.0266***	-0.0252***	-0.0230***	-0.0224***
	(0.1621)	(0.0044)	(0.0039)	(0.0033)	(0.0033)
$Revenue^2$ × IncDum	-1.19E-05	4.94E-07***	4.37E-07***	4.07E-07***	4.05E-07***
	(7.41E-06)	(1.10E-07)	(7.37E-08)	(6.86E-08)	(6.94E-08)
$Revenue^3$ × IncDum	1.40E-10	-4.40E-13			
	(8.39E-11)	(6.25E-13)			
SalesShare	-82.5068*	-56.8976	-59.7244	-65.3978	
	(48.4728)	(47.1127)	(46.6303)	(46.4513)	
Intercept	383.3572*	22.8386	24.1784	54.0191**	26.9691***
	(217.8067)	(35.0425)	(34.7587)	(21.4824)	(9.7267)
Observations	45	45	45	45	45
SSR	42489.50	45804.96	46420.55	47873.07	50306.15
SST	1254078.07	1254078.07	1254078.07	1254078.07	1254078.07
Joint F statistic	128.3175***	118.7039***	164.7653***	159.5740***	239.2892***
R^2	0.9661	0.9635	0.9630	0.9618	0.9599
Adj. R^2	0.9586	0.9554	0.9571	0.9558	0.9559
AIC	336.3072	339.6883	333.8560	335.2425	331.1651
SBC	352.5672	355.9483	346.5026	347.8891	340.1985
F statistics of the restrictions tests					
Alternative					
Model 1		2.8091	1.6653	1.5204	1.6557
Model 2			0.4973	0.8353	1.2120
Model 3				1.1890	1.5904
Model 4					1.9821

*Standard errors in parentheses. *** Significant at 1%; ** Significant at 5%; * Significant at 10%*

- **Model 5 –** same intercept for states with and without income tax, quadratic relationship with revenue.

In Table 9, we present the OLS estimates of the five models. We note that all models have a very high fit to the data, as indicated by an R^2 of about 0.96 throughout. Model 1 indicates that only the sales tax share is significant in determining the cost and that it has an inverse relationship with cost. Our concern with this model is that it includes several variables that are highly correlated with each other, specifically the revenue related variables. Since revenue is strictly positive, these variables will have high positive correlations which cause the estimates of the standard errors to be biased upwards, causing parameter estimates to seem not significant when they actually are. We notice that for states that have an income tax, the coefficient on revenue cubed would be zero since $-1.41E\text{-}10 + 1.40E\text{-}10 \approx 0$, so in Model 2 we consider a quadratic relationship between revenue and cost for the states that have no income tax.

Model 2's estimates show that only the coefficients for a quadratic relationship between cost and revenue are significant. Sales tax revenue share is no longer significant, although it does keep the negative sign. When comparing the specification of the two models, the adjusted R^2, AIC, and SBC all favor Model 1 versus Model 2, but the F statistic from the restriction test indicates that the restriction is valid, so we cannot conclude that Model 2 is not the correct one.[40]

Following the indication on model 2 as to the correct specification of the model, in Models 3 through 5 we remove the variables that have insignificant coefficients in Model 2, one by one, and test the validity of the restrictions against all previous models. We observe that the test of the restrictions in Model 5 yields F statistics that are not significant when comparing it to Models 1 through 4 and that even though the adjusted R^2 is slightly lower than Models 1 and 3, the AIC and SBC are the lowest of all the models. Thus, we chose Model 5 for our estimations. The advantage of Model 5 may be a result of the specific data sample used, but since our objective is to estimate the cost to the states in 2005 and we are using data for 2005, we think that this model is appropriate for the task.

Having chosen Model 5, we present it in a manner that is easier to use:

$$\text{Cost} = \begin{cases} 26.9691 + 0.0262 \times \text{Revenue} - 3.45E-07 \times \text{Revenue}^2 & \text{if no Income Tax} \\ 26.9691 + 0.0038 \times \text{Revenue} + 0.60E-07 \times \text{Revenue}^2 & \text{if Income Tax} \end{cases}$$

The equation for the states that have no income tax uses the coefficients for the revenue variables that are not related with the income dummy variable, whereas the coefficients in the equation for the states that have an income tax add the coefficients of the corresponding variables. For example, the coefficient on Revenue for the states that have an income tax is nothing but the coefficient on Revenue from Model 5, 0.0262, plus the coefficient on Revenue × IncDum, -0.0224: 0.0038. We note that the estimate of the FairTax revenue that needs to be collected at

[40] When comparing models that use the same observations, R^2, Adjusted R^2, AIC, and SBC statistics adjust for the different degrees of freedom used in the different models. Higher R^2 and Adjusted R^2 are preferred, whereas a lower AIC and SBC will indicate the preferred model. In testing restrictions, the null hypothesis is that the restrictions are valid, so a significant F statistic will allow for the rejection of the restricted model, whereas an insignificant one will not allow for it.

the state level is approximately 3.5 times the total revenue that states are currently collecting, which can be confirmed by dividing the estimate on line 3 in Table 6 by the total revenue collected of $645.14 billion presented in Table 8.

This means that the total revenue the states would collect under the FairTax is 4.5 times the current revenue collected, since they would have to collect both the revenue for their spending and the revenue for the FairTax. Even though our model has a good fit, we have to be very careful to estimate costs with such higher revenues than the ones used to estimate the coefficients. An increase of revenue in the levels presented would most surely allow states to enjoy economies of scale, but only up to a certain point. In order to determine that point, we transform the above equations to reflect the cost per $100 of revenue, since this is a measure of the efficiency of revenue collection. To do that, we divide both sides of the equations by "Revenue" and multiply by 100. The result is the following:

$$\left(\frac{\text{Cost}}{\text{Revenue}}\right)\times 100 = \begin{cases} 2.62 + 2696.91/\text{Revenue} - 3.45E-05\times\text{Revenue if no Income Tax} \\ 0.38 + 2696.91/\text{Revenue} + 0.60E-05\times\text{Revenue if Income Tax} \end{cases}$$

Figure 1: Estimated Cost per $100 of Revenue

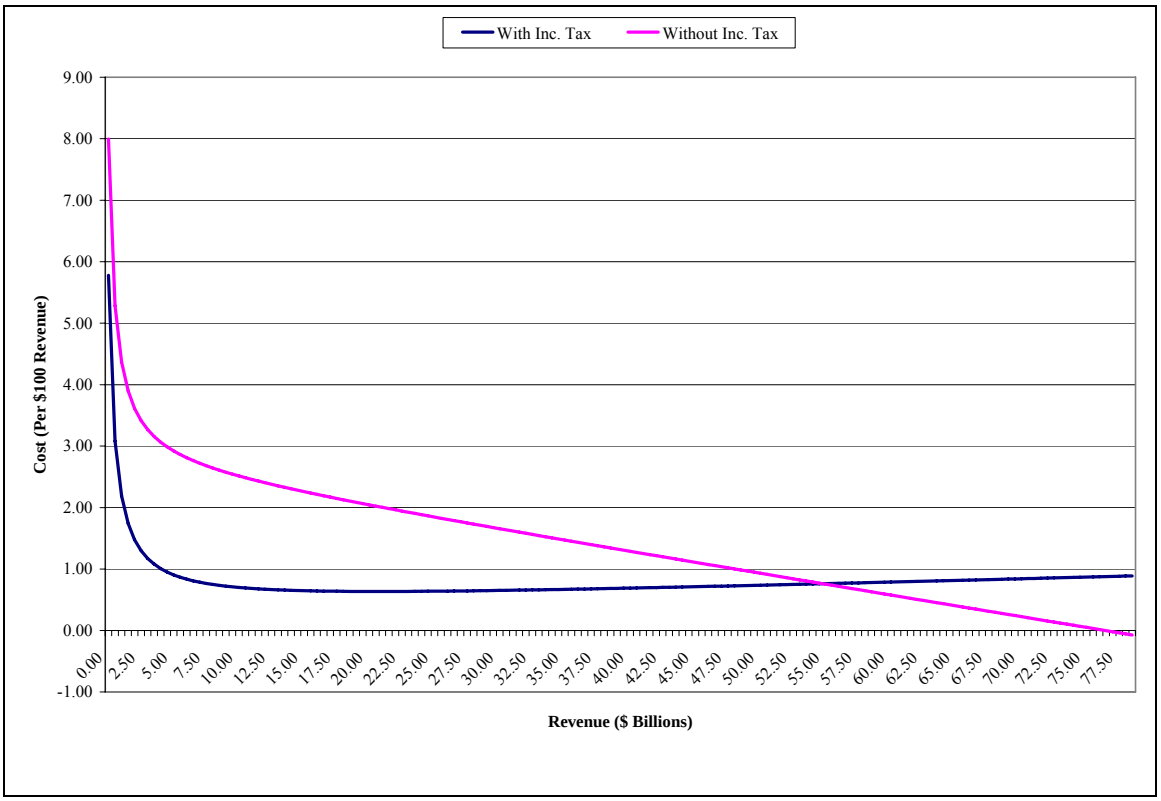

Figure 1 shows the relationship between cost per $100 of revenue and revenue, both for states that have an income tax and states that do not. We observe that in both cases, state tax collection is more inefficient for states that have lower revenues, although it is more efficient for those states that have both an income and a sales tax than those that just have a sales tax. The gap in efficiency closes as revenue increases, and states with no income tax eventually become at least

as efficient as their counterparts. We calculate the point where they both have the same cost per $100 of revenue by setting the two equations above equal to each other and solving for revenue. The point of intersection is at a revenue level of $55.28 billion, which represents a cost of $0.76 per $100 of revenue.

It is important to understand what the model we use actually estimates. It estimates the cost per $100 that one state, given that state's revenue and tax revenue collection structure, incurs. It is, therefore, not appropriate to plug in the total revenue collected by all states to come up with a single revenue figure.

Table 10: State FairTax Collection Costs

1. State FairTax cost per $100 of revenue	0.75
2. Current State cost per $100 of revenue	0.84
3. Cost savings per $100 of revenue [1. - 2.]	***(0.09)***
4. State FairTax revenue collected	2,288.68
5. Gross state FairTax collection costs [1. × 4. ÷ 100]	***17.25***
6. Current state tax collections	645.14
7. Savings in state tax collections [3. × 6. ÷ 100]	***(0.55)***
8. State and local government employees federal income tax revenue	158.01
9. Savings in collecting federal income tax [2. × 8. ÷ 100]	***(1.33)***
10. Administrative credit [-0.25% × 4.]	***(5.72)***
11. Net state FairTax collection costs [5. + 7. + 9. + 10.]	***9.66***
12. Net state FairTax costs per $100 of revenue [11. ÷ 5. × 100]	***0.42***

Billions of $ except per $100 figures. Numbers may not add up because of rounding.
Source: Authors' estimates using states' publicly available IRS and CES data.

To use the model appropriately, we distributed the total amount of revenue that would be collected under the FairTax by state and added it to the current revenue that states are collecting for their state taxes. Please note that we do not include federal taxes that state and local governments withhold from their employees' paychecks, since current federal taxes would disappear under the FairTax. We use IRS total revenue collection data, except excise tax collections, by state as the basis for distributing the FairTax revenue by state. We estimate that the average revenue each state would have collected in 2005, including both the FairTax and state taxes, is $65.20 billion, compared to the estimated average of $14.34 billion of current revenue collections presented in Table 8. We note that the average revenue collected by the states is beyond the estimated point of equal efficiency ($55.28 billion) with 17 states exceeding this amount. We also note from Figure 1 that in absolute terms, the slope for states that have no income tax is larger than the slope for states that have an income tax beyond this point. Therefore, we used a cost of $0.76 per $100 of revenue collected for all states, whether they have an income tax or not, that have to collect a revenue larger than $55.28 billion. We do this to allow for the previously mentioned fact that the revenues the states would have to collect under the FairTax are 4.5 times the revenues they are currently raising.

We estimated the costs by states using Model 5, with and without this limitation. We obtained estimates of a total cost of $17.46 billion without the limitation and of $22.12 billion with the limitation. Therefore, we think that our limitation provides a conservative estimate of the cost that states would incur. The total cost of $22.12 billion implies a cost of $0.75 per $100 of total revenue collected by the states, including both the FairTax revenue and the states' specific tax revenues.

Table 10 shows the calculation of the states' cost of administering and collecting the FairTax. On line 1, we start with our estimate of the cost of $0.75 per $100 of revenue. We note that states incurred a cost of $0.84 per $100 of revenue collected in 2005 and, since our estimate of $0.75 is done including the state tax revenue collected, this means that the FairTax saves states some money in collecting their current revenue. We include the current cost of $0.84 per $100 of revenue on line 2, and estimate the savings per $100 of revenue to be $0.09.[41] Line 4 shows, once more, the FairTax revenue collected by the states of $2,288.68 billion. On line 5, we calculate the gross state FairTax collection costs by multiplying this revenue by the cost per $100 of revenue on line 1 and dividing by 100. We calculate this cost to be $17.25 billion. To estimate the savings that the FairTax brings to current state tax collection costs, we include our estimate of current state tax revenue collections in line 6: $645.14 billion. We calculate the mentioned savings by multiplying this revenue by the estimate of the savings in line 3 and divide by 100 to get $0.55 billion.

Because the FairTax legislation repeals the federal income tax, states will no longer have to withhold federal personal income tax from their employees. We estimate the amount of gross income tax revenue from state employees to be $158.01 billion by using data from Current Employment Statistics (CES) of the Bureau of Labor Statistics (BLS) and IRS gross personal income tax revenue for 2005. Using the CES data, we calculate that 14.27 percent of the nonfarm labor force was employed by state and local governments. Applying this percentage to the gross income tax revenue collected by the IRS in 2005, we get the estimate on line 8 of $158.01 billion. We assume that state and local governments would be incurring the same cost per $100 of revenue in collecting this revenue that the state governments are in collecting all their current tax revenues, $0.84, so we multiply these two numbers and divide by 100 to obtain the estimate of the savings on line 9 of $1.33 billion. Finally, we account for the fact that the state governments would keep the administrative credit on their revenue collections and calculate this amount on line 10 by multiplying the estimate on line 4 by 0.25 percent. Adding lines 5, 7, 9, and 10, we obtain the net state FairTax collection cost of $9.66 billion for 2005, which implies a cost of $0.42 per $100.

Note that $9.66 billion is slightly lower than our estimate of the IRS savings presented on line 2 of Table 2. In the next section, we are going to see that it is going to be slightly higher than all the federal government savings. This means that, even though the administrative credit does not cover all the costs to the states to administer and collect the FairTax, the federal government could compensate the state governments for this by slightly increasing the tax rate. We also

[41] Economic intuition tells us that there must be some synergies that states can take advantage of between the collection of their respective sales taxes and the FairTax. The savings that our model yields are very conservative, because of the point we chose to limit the cost per $100 of revenue collected.

note, however, that this would decrease the purchasing power of consumers, since the rate would no longer be spending neutral.

VII. Federal Government

Under the FairTax, the federal government receives the tax collections from the states and is no longer responsible for administering and collecting the taxes that are being replaced, so IRS operating costs will decrease, as we have mentioned before. In addition, the different federal agencies will no longer have to withhold personal income taxes for their employees, further decreasing federal government costs. However, the different agencies now have to remit the FairTax on their labor purchases. Finally, the federal government also has to issue the prebate checks. In this section, we estimate the FairTax revenue the federal government will receive and the net costs/savings associated with the tax change.

Table 11: Federal FairTax Revenue

1. Revenue remitted by state governments	2,282.96
2. Federal government wages revenue	62.41
3. Revenue collected by federal government [1. + 2.]	***2,345.37***

Billions of $. Numbers may not add up because of rounding.

Source: Authors' estimations, CBO, and IRS data.

Consider the revenue the federal government would have collected, which we present in Table 11. On line 1, we have the estimate of the revenue it would receive from the state governments, which is the total revenue collected by the states from line 3 in Table 6 multiplied by 99.75 percent (1 minus 0.25 percent) to remove the administrative credit kept by the states. This operation yields the same result as adding line 3 on Table 6 and line 10 on Table 10: $2,282.96 billion. On line 2, we report the revenue that the federal government would raise on its purchases of labor, which we presented on line 2 of Table 4: $62.41 billion. Summing these, we get total revenue collected by the federal government of $2,345.37 billion. In order to check our estimations of the revenue, we note that by adding the total administrative credit, presented on line 6 of Table 3, to the estimate on line 3 of Table 11, we obtain the gross FairTax revenue, presented on line 1 of Table 3, of $2,356.60 billion. This is as it should be, since the total revenue collected under the FairTax has to be the revenue that the federal government gets to spend plus the compensation to the sellers and the state governments in the form of the administrative credits.

Having estimated the FairTax revenue that the federal government would have raised in 2005, we now present our estimates of the savings it would face under the FairTax. Line 1 in Table 12 gives the IRS's self-reported operating cost of $0.44 per $100 of revenue, which is used for the estimates on other lines of the table. Line 2 states our estimate of the money that the IRS would save by no longer having to administer and collect the taxes that are replaced by the FairTax: $9.74 billion. This number is the same as the one on line 2 of Table 2, and is estimated by calculating the share of total gross revenue the taxes being replaced brought in for 2005 and multiplying by the operating costs reported by the IRS for 2005: $10.03 billion. Next, we

account for the fact that the federal government would have to collect the FairTax on its labor purchases, so we include our estimate of the FairTax revenue raised on those wages on line 3: $62.41 billion. This number is the same as on line 2 of Table 11 and on line 2 of Table 4.

Table 12: Federal FairTax Savings

1. IRS operating costs per $100 of revenue	0.44
2. Reduction in IRS operating costs	(9.74)
3. Federal wages FairTax revenue	62.41
4. Federal wages FairTax revenue collection cost [1. × 3. ÷ 100]	***0.27***
5. Federal employees personal income tax revenue	16.21
6. Federal personal income tax filing costs [1. × 5. ÷ 100]	***(0.07)***
7. Federal cost of processing and posting the prebate	0.16
8. Net federal savings [2. + 4. + 6. + 7.]	***(9.38)***
9. Net federal savings per $100 of revenue	***(0.40)***

Billions of $ except per $100 figures. Numbers may not add up because of rounding.
Source: Authors' estimates, OMB, IRS, and CES data.

To estimate the cost of collecting this revenue, we assume that the federal government would be as efficient in collecting the revenue as the IRS is in administering and collecting existing taxes. This assumption is consistent with the one we made when estimating the cost to the state governments of collecting the FairTax revenue on state and local governments' labor purchases. Therefore, on line 4, we multiply the estimate on line 3 by the cost per $100 of line 1 and divide the result by 100 to obtain a cost of $0.27 billion. Since there will no longer be a personal income tax under the FairTax, the federal government will no longer need to withhold the income tax for its employees. On line 5, we estimate the income tax revenue currently raised on federal employees, which we obtain by estimating the share of total nonfarm employees hired by the federal government (excluding governmental enterprises) using CES data, and multiplying it by the gross personal income tax revenue of 2005. Our estimate is $16.21 billion. To calculate the cost that the federal government would be saving under the FairTax, we assume, once more, that all the federal government agencies are as efficient in collecting this revenue as the IRS is in administering and collecting all the current tax revenue. Consequently, on line 6, we multiply the estimate on line 5 with the cost per $100 on line 1 and divide by 100 to get savings of $0.07 billion.

The final item to be estimated is the cost the federal government would have in processing the checks for the prebate. For this estimation, we used the costs of processing and posting W-2 forms in paper and electronic format, as well as the share of the forms in each format reported by the Office of Management and Budget for 2004.[42] The costs were $0.002 per electronic form and $0.297 per paper form, and the shares were 60 percent for electronic forms and 40 percent for paper forms.[43] This implies a weighted average cost of $0.12 per form. We multiplied this

[42] Office of Management and Budget, "Information Collection Budget of the United States Government: Fiscal Year 2005," *Managing Information Collection,* Office of Information and Regulation Affairs. Available at http://www.whitehouse.gov/omb/inforeg/icb/2005_icb_final.pdf.
[43] Ibid., p. 18.

average by the number of households receiving the prebate in 2005, 113.04 million, and by 12 months, since the government would issue one check a month per household, to obtain the cost estimate on line 7 of $0.16 billion. At this point, we are ready to calculate the net federal savings caused by the FairTax, which we do on line 8 by adding lines 2, 4, 6, and 7. The results are savings of $9.38 billion, which means that the FairTax causes savings of $0.40 per $100 of revenue at the federal level.

VIII. Private Sector Savings

We have estimated the 2005 net administrative costs of the FairTax for both federal and state government, as well as the costs for the sellers. We have, however, one more task to do before we can estimate the total costs or savings that the FairTax would bring. Under the FairTax, individuals would no longer have to file the personal income, estate, and gift taxes. Businesses would not have to collect the personal income tax and other employment taxes from their employees, as well as not having to file employment and corporate income taxes. To estimate the savings the FairTax brings to the private sector, we have to estimate the costs associated with filing the taxes replaced by the FairTax that individuals, businesses, and nonprofit organizations currently incur. For this matter, we rely on the estimates presented by the Hodge, Moody, and Warcholik study.[44]

Table 13: Private Sector Costs of Replaced Taxes

1. Individuals' income, estate, and gift taxes	110.67
2. Businesses' income tax	154.40
3. Employment taxes	142.04
4. Total current tax filing costs	***407.11***

Billions of $.
Source: Authors' estimates, IRS data, and Hodge, Moody, and Warcholik (2005).

On line 1 of Table 13, we present the Hodge, Moody, and Warcholik estimate of the cost to individuals of complying with income, estate, and gift taxes on page 7 of their report: $110.67 billion. Line 2 sums their estimate for business compliance costs of $147.65 billion (page 8) and their estimate of the costs for nonprofits of $6.76 billion (page 9), minus their estimate of the compliance cost of the nonprofits for the return of the excise tax, of $8.6 million (page 9). The total estimate is $154.40 billion.

We were unable to find an estimate for the cost of filing employment taxes. To estimate this cost, we took the average cost per $100 of revenue of complying with the individual taxes and the business taxes, implied by the estimates on lines 1 and 2 of Table 13, which is $18.41, multiplied it by the gross revenue levied by federal employment taxes in 2005, and then divided the result by 100 to obtain a cost of $142.04 billion, which is presented on line 3. This estimate may be high, since it assumes that employment tax compliance costs are as high as the costs to individuals and businesses of minimizing their income tax exposures. Knowing this, in the next section we include a sensitivity analysis that considers total costs/savings brought forward by the

[44] Hodge, Moody, and Warcholik (2005).

FairTax under different assumptions for total private savings. On line 4 of Table 13, we calculate the total costs of filing the taxes that are going to be replaced by adding lines 1 through 3, and we obtain an estimate of the total savings in the private sector of $407.11 billion.

IX. Total FairTax Costs (Savings)

We are finally ready to estimate the total costs/savings that the FairTax would have had in 2005. We do that in Table 14.

Table 14: Total FairTax Costs (Savings)

1. Net sellers' FairTax collection costs	60.31
2. Net state governments' FairTax collection costs	9.66
3. Net federal savings	(9.38)
4. Private sector savings	(407.11)
5. Total FairTax costs (savings) [1. + 2. + 3. + 4.]	***(346.51)***
6. Total FairTax costs (savings) per $100 of revenue	***(14.70)***
Billions of $ except per $100 figures. Numbers may not add up because of rounding.	

On line 1, we have the net sellers' collection costs from line 4 of Table 5, $60.31 billion. On line 2, we include the estimate of the net state governments' administration and collection costs of $9.66 billion from line 11 of Table 10, while on line 3, we present the estimate of the net federal savings from line 8 of Table 12, $9.38 billion. On line 4, we have the estimated private sector savings from line 4 of Table 13, $407.11 billion. Finally, on line 5, we calculate the total FairTax costs/savings by adding lines 1 through 4 and obtain an estimate of $346.51 billion savings under the FairTax for 2005. This represents savings of $14.70 for each $100 of gross revenue that the FairTax would have raised during that year.

In the previous section, we mentioned that the estimate for the costs of complying with the employment taxes presented there may be too high. First, we must note that even without the estimated saving on employment taxes, which would cause private savings to be $265.07 billion (calculated by adding lines 1 and 2 of Table 13), we would have total savings of $204.47 billion (calculated by subtracting lines 1 through 3 of Table 14 from the estimate of $265.07 billion).

Table 15: Sensitivity Analysis of the FairTax Costs

Private Sector Savings Percentage	FairTax Savings $ Billions
25%	(41.18)
50%	(142.96)
75%	(244.74)
100%	(346.51)

In Table 15, we present the estimates of the total savings the FairTax would have brought in 2005 if total private savings were 25, 50, 75, and 100 percent of the estimate on line 4 of Table 13. We observe that all of the estimates imply that the FairTax would save money. We also observe that for the FairTax to bring no savings whatsoever, the estimate of the total private savings it brings, including the savings in filing employment taxes, would have to be just 14.88 percent of the estimate we present on line 4 of Table 13 (calculated by dividing the sum of lines 1 through 3 of Table 14 by $407.11). Since this percent is so low, we are convinced that having the FairTax in place would have freed up a substantial amount of money for more productive purposes than to administer, collect, and file the taxes that the FairTax proposes to replace, while still collecting the amount of revenue needed for the federal government to keep its real spending constant.

X. Conclusions

In this study, we wanted to identify and separately estimate the costs/savings the FairTax would bring about for each of the three strata involved in the administration and collection of the FairTax – sellers, state governments, and the federal government. We also considered the fact that the FairTax would bring huge savings to the private sector, which will no longer have to file the taxes that are replaced by it. Our estimations are based on 2004 and 2005 data from state budget documents and revenue reports, 2005 data from the IRS, from CBO and CES, and estimates from Hodge, Moody, and Warcholik's report for the Tax Foundation and the PricewaterhouseCoopers report for the Joint Cost of Collection Study. *Our estimates show that the costs to administer the FairTax would have been significantly lower than the costs to administer the existing system it replaces.*

In this study, we have not considered any change in tax enforcement costs that the FairTax may need to collect the necessary amount of revenue. The robustness of our estimates show, however, that in order to have no savings whatsoever, state costs would have to be almost 35 times more than what we estimate (calculated by dividing $346.51 billion from line 5 of Table 14 by $9.66 billion from line 2 of Table 14 and subtracting 1). Even if we had not accounted for the estimated savings from repealed employment taxes of $142.04 billion, state government costs would have to be about 20 times more than what we estimate them to be.

We conclude, therefore, that the FairTax would be a much more efficient taxation system from the point of view of the administration, collection, and filing costs that it would bring about when compared to the administration, collection, and filing costs of the current tax system it replaces.

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