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A Theoretical Note on Tax Evasion: The Case of the American FairTax Plan

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Abstract

Issues that occur with any tax system involve the incentives and disincentives of individuals to evade the tax. This theoretical note investigates how risk preferences could affect tax evasion under the proposed FairTax. We develop a constrained utility-maximization framework to examine how individuals with different risk preferences could respond to a broad-based sales tax based on the costs associated with tax evasion.

Keywords

Tax Evasion, FairTax

1. Introduction

There have been numerous studies on tax evasion in the US and other nations. Most commonly, such studies focus upon income tax evasion and the behavioral underpinnings determining the extent of that taxation, although some studies focus more on estimating the relative size/degree of tax evasion (Ali et al., 2001; Alm & Yunus, 2009; Berdiev et al., 2018; Cebula & Feige, 2012; Cebula, 2004, 2008; Clotfelter, 1983; Das-Gupta, 1994; Erard & Feinstein, 1994; Feinstein, 1991; Feld & Frey, 2007; Gahramanov; 2009; Ledbtter, 2004, 2007; Long & Gwartney, 1987; Nguyen, 2018; Spicer & Thomas, 1982; Tanzi; 1982; Thurman, 1991; Wenzel, 2005).

The FairTax Act of 2021, if enacted, would replace the existing income tax system with a national sales tax[1]. The tax would be a broad-based federal general

[1]See https://www.congress.gov/bill/117th-congress/house-bill/25?s=1&r=5#:~:text=Introduced%20in%20House%20(01%2F04%2F2021)&text=This%20bill%20imposes%20a%20national,and%20estate%20and%20gift%20taxes.

sales tax levied on the use or consumption of taxable property or services and would replace income taxes, payroll taxes, and estate and gift taxes. The tax rate would be 23 percent in 2023 and be periodically adjusted as needed in subsequent years. Family units would receive a monthly sales tax rebate based on family size and poverty guidelines (a "pre-bate") to help reduce any regressivity of the tax. The states would be responsible for administering, collecting, and remitting the sales tax to the US Treasury Department. No funding would be authorized for the operations of the Internal Revenue Service after 2025, given the new role assigned to the states.

This is the most recent proposal for a "FairTax". The first such proposal that the US Congress considered was in 1999 but was not enacted due to limited support. Other similar proposals for a single tax rate were considered in following years but met with the same fate. Yet, these outcomes have not quelled the debate over whether a fair tax is preferable to the current tax system. Indeed, recent calls for tax rate increases and reducing income tax evasion have generated widespread discussions among the public.

Discussions over an appropriate tax system have been fueled mainly by the spending and revenue proposals of President Biden and congressional members of his party and the reactions to them by congressional members of the opposite party. Many of the issues considered on both sides of the debate are arguably based on a series of scholarly papers that appeared in the scholarly literature several years ago (e.g., Ali et al., 2001; Alm & Yunus, 2009; Cebula, 2004, 2008; Cebula & Feige, 2012; Clotfelter, 1983; Das-Gupta, 1994; Erard & Feinstein, 1994; Feld & Frey, 2007; Gahramanov, 2009; Ledbetter, 2004, 2007; Long & Gwartney, 1987; Spicer & Thomas, 1982; Tanzi, 1982; Thurman, 1991).

An issue that always arises with any tax system is the incentive of individuals to evade the tax, whether it is an income tax or a sales tax. Therefore, it is important to consider the extent to which a new sales tax system would be preferable to an income tax system to reduce the incentive and ability of individuals to engage in tax evasion. We do this in the following two sections. First, we develop a simple model to examine how individuals might reasonably respond to a sales tax based on the benefits and costs associated with tax evasion. Second, we discuss the practical considerations that affect decisions to avoid paying taxes under a sales tax system compared to an income tax system. The last section contains a summary and conclusions.

2. Modelling Tax Evasion Incentives in a FairTax System

2.1. Tax Evasion Costs

Any effort to evade a FairTax arguably involves at least four types of "transactions costs." First, an individual would have to expend time, energy, and possibly funds to find a person or person employed with an establishment agreeing to participate in the tax evasion process. Let TE represent the quantification of this cost factor. Second, an individual considering evading taxation under a FairTax

may also recognize that if successful, such an action is not only illegal but immoral and unethical. An individual could therefore incur psychological transactions costs in the form of a "conscience cost" (Erard & Feinstein, 1994; Feld & Frey, 2007; Wenzel, 2005). Let the quantification of this cost be denoted as *CONSC*. Some people may consider this cost to be sufficiently high to preclude any tax evasion effort, whereas this particular cost may be zero for others. Third, if successful in finding a colluder in a tax evasion scheme, an individual would be exposed to potential penalties imposed by the audit-equipped tax collection authority, ranging from a fine to a fine plus imprisonment, should that tax evasion somehow become known to tax collection authorities. Let *PEN* represent this cost (Spicer & Thomas, 1982; Feinstein, 1991; Ali et al., 2001; Cebula, 2004). Fourth, suppose an individual can recruit a party to collude in the tax evasion scheme. In that case, that second party will extract a price in exchange for its participation (e.g., a share of the evaded taxes), though being subjected to potential tax evasion penalties. The bribe premium is added to the market-determined price of the commodity and can be denoted as *BRIBE*. It reflects a would-be collaborator's own expected/perceived risk of fines and imprisonment and the potential economic profit that would compensate for that risk. Thus, the cost of tax evasion under a FairTax, *COST*, is the sum of these four transactions costs components:

$$COST = TE + CONSC + PEN + BRIBE \tag{1}$$

The benefit of successfully evading a FairTax is arguably straightforward. To the extent that the tax has been avoided, the tax evader has a higher disposable income and greater purchasing power, which translates into higher utility for the evader, ceteris paribus (e.g., Clotfelter, 1983; Alm & Yunus, 2009; Gahramanov, 2009).

Based on this discussion, we use a utility-maximization model to examine the choice individuals with different risk preferences would make regarding whether to engage in tax evasion under a FairTax. Consider a two-good world, in which an individual maximizes utility, denoted $U(x_1, x_2)$, with respect to x_1 and x_2, which denote consumption of commodities 1 and 2, respectively. A consumer may successfully evade taxation on commodity 1 with a probability of P but cannot evade taxation on commodity 2. Assuming a Cobb-Douglas utility function, then it follows that:

$$U(x_1, x_2) = x_1 x_2, \tag{2}$$

where x_1 and x_2 are nonnegative and an individual is subject to the following budget constraint:

$$S = x_1 p_1 \left(COST + PEN \times 1_{\{\text{if caught}\}} \right) + x_2 p_2 \left(1 + FTR \right),$$

where YS is the individual's spendable income, p_1 and p_2 are the prices of commodities 1 and 2, respectively, and FTR represents the FairTax Rate. $COST$ represents costs of tax evasion, including TE, $CONSC$, and $BRIBE$ as discussed

above for commodity x_1. $PEN \times 1$ strictly occurs if tax evasion is detected and the tax collection authority catches the evader. Since a consumer cannot evade the tax levied on commodity 2, there exists no cost or penalty related to it. Note that

$$1_{\{\text{if caught}\}} = \begin{cases} 1, & \text{if tax evasion is caught by the authority} \\ 0, & \text{otherwise} \end{cases} \tag{3}$$

To solve the expected utility maximization problem with constraints, a natural way is to apply the Lagrange method to transform the original problem into a relaxed unconstrained version and then refer to the first-order conditions to characterize the optimal solutions which satisfy the given constraints (Bi et al., 2021). The maximization problem is transformed to maximizing the expected utility function as follows:

$$\begin{aligned} E\left[U\left(x_1, x_2\right)\right] = {} & Px_1\left[\frac{YS - p_1 x_1\left(1+COST\right)}{p_2\left(1+FTR\right)}\right] \\ & + \left(1-P\right)x_1\left[\frac{YS - p_1 x_1\left(1+COST+PEN\right)}{p_2\left(1+FTR\right)}\right]. \end{aligned} \tag{4}$$

The first-order condition is as follows:

$$\frac{\partial E\left[U\left(x_1, x_2\right)\right]}{\partial x_1} = 0,$$

That is,

$$\begin{aligned} 0 = {} & P\left[\left[\frac{YS - p_1 x_1^*\left(1+COST\right)}{p_2\left(1+FTR\right)}\right] - \left[\frac{p_1 x_1^*\left(1+COST\right)}{p_2\left(1+FTR\right)}\right]\right] \\ & + \left(1-P\right)\left[\left[\frac{YS - p_1 x_1^*\left(1+COST+PEN\right)}{p_2\left(1+FTR\right)}\right] - \left[\frac{p_1 x_1^*\left(1+COST+PEN\right)}{p_2\left(1+FTR\right)}\right]\right], \end{aligned}$$

which yields

$$x_1^* = \frac{YS}{2p_1\left[1+COST+PEN\left(1-P\right)\right]}. \tag{5}$$

Given the formula of x_1^*, we can derive the consumption of commodity x_2:

$$x_2^* = \frac{YS}{2p_x\left(1+FTR\right)}\left[2 - \frac{1+COST+PEN\times 1_{\{\text{if caught}\}}}{1+COST+2PEN\left(1-P\right)}\right]. \tag{6}$$

The expected consumption of commodity x_2 is $E\left(x_2^*\right) = \dfrac{YS}{2p_y\left(1+FTR\right)}$.

2.2. Tax Evasion Implications

Given the implicit expressions of the optimal consumption of commodities x_1 and x_2, we can derive that

$$\frac{\partial x_1^*}{\partial PEN} = \frac{-YS\left(1-Prob\right)}{2p_1\left[1+COST+PEN\left(1-Prob\right)\right]^2} < 0, \tag{7}$$

showing that as the tax evasion penalty increases an individual is less likely to seek to evade the tax, thus consuming less of commodity x_1. Similarly, we can find that:

$$\frac{\partial x_1^*}{\partial P} = \frac{YS \times PEN}{2p_1\left[1+COST+PEN\left(1-P\right)\right]^2} > 0. \tag{8}$$

The positive sign indicates that an individual is more likely to evade taxation when the probability of successfully evading tax increases. A capable tax-audit authority that efficiently detects tax evasion behavior and a stringent penalty can both disincentivize tax evasion behavior.

In addition, the finding that

$$\frac{\partial x_1^*}{\partial COST} = \frac{-YS}{2p_1\left[1+COST+PEN\left(1-P\right)\right]^2} < 0, \tag{9}$$

indicates that an increased tax-evasion cost discourages an individual from tax evasion. Individuals who have difficulty in participating tax evasion and who are risk-averse have a higher level of *COST*. Thus, such individuals are less likely to attempt tax evasion.

Regarding commodity x_2, we find that:

$$\frac{\partial x_2^*}{\partial FTR} = \frac{-YS}{2p_y\left(1+FTR\right)^2} < 0, \tag{10}$$

showing that an individual consumes less commodity x_2 as the fair tax rate increases. It is noteworthy that there does not exist an explicit solution for x_1^* and x_2^* if the utility function has a more general form such as $U\left(x_1, x_2\right) = x_1^a x_2^b$ or $x_1^{0.5} x_2^{0.5}$.

3. Discussion of Practical Considerations

The FairTax proposal is quite encompassing. It replaces all federal income, payroll-based taxes, and other federal taxes with an integrated approach, including a progressive national retail sales tax. A prebate is provided to ensure no individual below the poverty level pays a federal tax on spending but instead receives a dollar-for-dollar federal revenue replacement. Also, the 16th Amendment, which grants power to the federal government to levy and collect taxes on incomes, could be repealed. The FairTax taxes individuals only on what they choose to spend on new goods or services, not on what they earn or already own and have paid for. While the tax on imports can be captured at the border, business-to-business consumption is not taxable under the FairTax—only personal consumption involving final retail sales is subject to taxation. Exports are not taxable. Used goods are not taxable. Thus, the large and growing Internet sales would not be of enforcement concern to the federal government.

Since final sales of new goods and services will be subject to taxation, a formal record (i.e., a de facto "paper trail") accompanies new goods and services pur-

chases. Indeed, 45 states and the District of Columbia impose sales taxes on new goods and services. These states account for 98% of the total U.S. population. As a result, nearly all transactions in retail stores involving new goods and services will be recorded at the state level and subsequently reported to existing state sales tax authorities. These records provide formal data on transactions and the FairTax payments due, along with state and local sales tax payments due. It is expected that state and national sales tax collection will be combined on a single report because the state sales tax agencies will be administering the FairTax.

Whether an individual makes purchases of new commodities at grocery stores, auto dealerships, appliance stores, pharmacies, sporting goods stores, hair stylists, dry cleaners, lawn service, or other places, formal records will be generated regarding the magnitude of new commodity sales and the attendant FairTax liabilities associated with them. Similarly, there will be many public records involving new homes. In such a new environment based on detailed recorded sales, an individual subject to the FairTax would apply the decision calculus described in Section 2 to decide whether to become a tax evader[2].

Small retail businesses are often viewed as more likely to evade taxes since the owner and beneficiary of tax evasion is more likely to be responsible for keeping the books and filing tax returns. However, more tax evaders are unlikely with the FairTax due to two factors. First, it is quite plausible that small businesspersons who are inclined to cheat on their sales tax are already cheating on their income tax and would be inclined to do so under any tax systems. Second, the economic importance of small firms in the retail sector is usually grossly overstated. For example, whereas small businesses make up approximately 65% of wholesale and retail trade corporations, their combined business receipts represent only slightly more than 2% of total wholesale and retail trade business receipts (US Census Bureau, 2012). Since the gross receipts of wholesalers would typically not be subject to taxation, the actual amount of overall evasion associated with small businesses will likely be a small-scale problem under the FairTax system. Furthermore, the number of taxpayers in a FairTax system will be reduced from about 160 million tax filers (individuals and businesses) to about 25 million, allowing for a much higher audit rate for a given expenditure[3].

Given the challenges facing the would-be tax evader under the Fair Tax system, in contrast to the US's current federal income tax system, the opportunities to evade the FairTax will involve significant transaction costs (as outlined above). Indeed, these transaction costs are the heart of the framework developed above. The extent of successful evasion depends on whether the FairTax includes non-trivial fines for detected evasion. Thus, one could elevate the effective total transaction costs to make evasion largely impractical. Indeed, the State of Cali-

[2]Of course, no tax system is perfect. For example, some service providers may ask to be paid or at least will be receptive to receiving/accepting payments in cash, just as they do under the current income tax system. Interestingly, many such businesses currently file Schedule C of Schedule 1040 and are able to "fudge" both revenues and business expenses (Ali et al., 2001).

[3]2015 IRS Data Book, Table 2.

fornia Board of Equalization (BOE) has found sales tax evasion to be minimal (Legislative Analyst's Office, 2005). In particular, the BOE found that more than 98 percent of California businesses are operating within the correct legal taxation parameters. Yet, noncompliance still accounts for more than $2 billion in uncollected sales and use taxes that make up part of the state's "tax gap"—the difference between the amount owed and the amount paid, negatively impacting all state taxpayers. Of the sales and use tax revenue, 93% comes from voluntary compliance, 2% from compliance activities (audits, collections, etc.), and 5% goes unreported and/or unpaid. This means that although 98% of California retailers are compliant, total sales and use taxes paid in California amount to 95% of taxes owed.

4. Conclusion

Despite being controversial, the FairTax is a novel and interesting proposal as an alternative to the federal personal income tax. Yet, as we have shown, there is no reason to expect an increase in the evasion of taxes by more individuals under such a new tax system than under the current income tax system. As is frequently the case, the impact of tax evasion due to a switch to such a new system depends on the incentives accompanying the system, as we have demonstrated[4]. Before closing, we observe that the analysis presented here is purely theoretical. Thus, a limitation of this paper is the absence of real-world data for a formal empirical investigation.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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[4]Arguably, since many state income tax systems use portions of the IRS tax forms for individuals, conversion to the FairTax might complicate tax collection efforts at the state level.

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