



## The X Tax: The Progressive Consumption Tax America Needs?

By Robert Carroll, Alan D. Viard, and Scott Ganz

*Good tax policy should be pro-growth, simple, and fair. An income tax, unlike a consumption tax, penalizes saving, which undermines economic growth and introduces complexity. An income tax is often thought to be fairer than a consumption tax, however, because it taxes saving, which is disproportionately done by higher-income individuals. In reality, however, a consumption tax can be designed to be as progressive as the current income tax. The Bradford X tax offers an attractive, if little-known, form of progressive consumption taxation.*

The key flaw of an income tax is that it penalizes saving. In the current U.S. tax system, the individual income tax's penalty on saving is reinforced by two additional layers of taxes: the corporate income tax and the estate and gift tax. As an example of the income tax's penalty on saving, consider two individuals, Patient and Impatient, each of whom earn \$100 of wages today. Impatient wishes to consume only today, while Patient wishes to consume only at a future date. Savings can be invested by firms in machines that yield a 100 percent rate of return between now and the (potentially distant) future date. In a world with no taxes, Impatient consumes \$100 today. Patient lends the \$100 to a firm, which buys a machine that yields a \$200 payoff in the future; the firm then pays Patient back her \$100 loan and \$100 interest, allowing her to consume \$200 in the future.

What happens in a world with a 20 percent income tax? Impatient pays a \$20 tax on his wages when they are earned and consumes the remaining

\$80, which is 20 percent less than in the no-tax world. Patient also pays a \$20 tax and lends the remaining \$80 to a firm. On her \$80 loan, she eventually earns \$80 interest and is repaid \$160 by the firm. However, a \$16 tax is imposed on the \$80 interest. Patient is left with \$144, which is 28 percent less than in the no-tax world—compared to a mere 20 percent reduction in Impatient's consumption. Under the income tax, Patient faces a higher percentage tax burden than Impatient solely because she consumes later.

A consumption tax yields a more neutral outcome. Consider a consumption tax imposed directly on individuals at a 25 percent rate (which means that the tax is 20 percent of the combined amount devoted to consumption and taxes). After earning \$100 of wages, Impatient consumes \$80 and pays a \$20 tax. Patient lends her entire \$100 to the firm; she owes no tax because she has not yet consumed. On her \$100 loan, she earns \$100 interest, accumulating \$200. She consumes \$160 in the future and pays a \$40 tax. Each worker's consumption is reduced by 20 percent relative to a world with no taxes. Because both workers face the same percentage tax burden, the consumption tax does not penalize saving.<sup>1</sup>

The income tax's penalty on saving is an undesirable distortion of consumer choice. It also

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causes less capital to be accumulated in the United States. The reduction in capital accumulation reduces labor productivity and lowers real wages throughout the economy, depressing the standard of living of future generations. Some studies have found that a switch to consumption taxation would increase the size of the U.S. economy by as much as 9 percent in the long run, although other studies estimate smaller gains.<sup>2</sup>

The tax on saving also complicates the tax system by making it necessary to measure depreciation on business assets and to distinguish between principal and interest on loans and between capital gain and recovery of cost basis on asset sales. The current tax system incurs further complexity because it seeks to determine the amount of income received by each individual rather than taxing the aggregate capital income generated by business operations at a flat rate. To determine who ultimately receives the income, the current system requires households to report their interest and dividend income, interest expense, and other financial flows. All of this is done in order to apply higher rates to those with higher incomes and thereby ensure progressivity.

Reflecting a fundamental ambivalence about taxing saving, Congress has provided an extensive array of tax-free savings accounts and often allows investment to be written off faster than it actually depreciates, thereby creating a hybrid income/consumption tax system. In some respects, however, this hybrid is inferior to a pure version of either system. These accounts shield only about 30 percent of household financial assets from taxes because contributions are subject to maximum limits and higher-income households are sometimes disqualified from contributing.<sup>3</sup> Because different transactions are taxed under different rules, taxpayers can also obtain tax benefits by shifting money from taxable to tax-free accounts without doing additional saving. Moreover, the intricate rules that apply to tax-free accounts add even more complexity.

In summary, a pro-growth, simple, and fair tax system should have three attributes: it should tax consumption rather than income, it should not require households to report financial transactions, and it should be sufficiently progressive to meet society's notion of fairness.

## Problems with Some Consumption Taxes

One type of tax that falls short with respect to the three objectives is a personal expenditures tax (PET) or consumed-income tax.<sup>4</sup> Under this tax, each household files an annual tax return on which it reports income,

deducts all saving (deposits into savings accounts, asset purchases, amounts lent to others, and payments made on outstanding debts), and adds all dissaving (withdrawals from savings accounts, gross proceeds of asset sales, amounts borrowed from others, and payments received on outstanding loans). The resulting measure equals the household's consumption, which is taxed at progressive rates. The PET meets two of the three objectives: it is a consumption tax, and it is progressive. Unfortunately, it still requires households to report financial transactions, retaining some of the income tax's complexity.

Another type of tax that falls short is the retail sales tax and its close cousin, the value-added tax (VAT). The retail sales tax is collected from the firm that sells to the consumer with no tax on sales between

firms. The VAT is a modification of the sales tax. When a firm sells to another firm, a tax is imposed on the selling firm (and passed along to the buyer), but the buying firm deducts the purchase against its tax (or, equivalently, claims a credit for the tax imposed on the selling firm). The retail sales tax is a viable approach for low-rate consumption taxes; most American states and local governments have such taxes, usually with rates below 10 percent. The VAT, which is viable for higher-rate consumption taxes, is used in more than 120 countries.

A sales tax or VAT meets two of the three objectives because it is a consumption tax and it does not require households to report financial transactions. Indeed, households that do not run businesses do not even file tax returns. Unfortunately, the sales tax and the VAT are not progressive. Taxing consumption solely at the firm level promotes simplicity, but it precludes any distinction between well-off and destitute consumers. Proposed solutions to this problem are unsatisfactory. Taxing "luxuries" at higher rates than "necessities" leads to administrative complexity and distorts consumers' choices between different goods. Paying cash rebates is unlikely to achieve the desired progressivity unless the rebates are very large.

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One approach that combines progressivity and consumption taxation is a dual system that raises some revenue from a progressive income tax and some revenue from a VAT. By keeping the income tax, however, that approach retains a penalty on saving and significant complexity. A better approach is to replace the income tax completely with a sufficiently progressive consumption tax.

### The Flat Tax and the Bradford X Tax

In 1983, Robert E. Hall and Alvin Rabushka proposed the “flat” tax, which is a two-tier VAT.<sup>5</sup> Firms compute value added, as they would under a conventional VAT, but then deduct their wage payments to obtain a remainder called “business cash flow.” Workers are then taxed on their wages. The total tax base is the same as under a VAT and therefore the same as under a retail sales tax. Because the VAT is a consumption tax and the flat tax is simply a two-part VAT, the flat tax is also a consumption tax.

The purpose of taxing wages and business cash flow separately is to promote progressivity. Firms are taxed at a single flat rate—say, 25 percent—on business cash flow, while workers are taxed at that same rate on wages above a substantial exemption amount. Workers with earnings below the exemption amount pay zero tax, and those with incomes moderately above the exemption amount pay a small fraction of their wages in tax, while those with very high earnings pay close to 25 percent. That pattern ensures some degree of progressivity across workers. Meanwhile, consumption financed from business cash flow is taxed at the full 25 percent.

Two key departures from today’s income tax make the flat tax a consumption tax. First, the household part of the flat tax applies only to wages, not to capital income, such as interest, dividends, and capital gains. Second, the business part of the flat tax allows firms to immediately deduct (“expense”) investments rather than depreciating them over time. Expensing eliminates the tax on marginal investments that are made after the reform is introduced because the tax savings from the expensing deduction offset, in present value, the tax on the investment’s future proceeds.

To confirm that the flat tax is a consumption tax, introduce a 20 percent flat tax into the previous example of

Impatient and Patient. Impatient pays a \$20 tax on his wages and consumes his remaining \$80. What about Patient?

She pays a \$20 tax on her wages and lends the remaining \$80 to the firm. At this point, the flat tax may look like an income tax rather than a consumption tax because Patient has been taxed on her wages without having consumed anything. The picture changes, though, when we walk through the remaining steps. The firm uses the \$80 loan to buy a \$100 machine; under the flat tax, a \$100 machine costs only \$80, because the firm immediately deducts the \$100 purchase and reaps a \$20 tax savings.

In the future, the machine yields a \$200 payoff, on which the firm pays a \$40 tax. With the remaining \$160, the firm pays Patient her \$80 principal plus \$80 in interest. Patient then consumes the entire \$160 since interest is tax-exempt under a flat tax. Recall from the earlier discussion that Patient consumes \$160 under a consumption tax. If the flat tax were an income tax, she would have only \$144 to consume.

In this example, the business cash-flow tax washes out; Patient ends up with the same \$160 if the cash-flow tax rate is zero (or 50 or 99 percent) rather than 20 percent. The cash-flow tax does not matter here because it imposes no tax at the margin on new investments. As noted by the late Princeton economist David F. Bradford, however, the cash-flow tax imposes a tax on above-normal returns, returns that exceed the minimum required for the investment to be undertaken. If the machine had yielded extra returns beyond the expected \$200 payoff, the government would have collected 20 percent of the extra amount. By leaving the required minimum return untouched but taxing above-normal returns, the cash-flow tax raises revenue without deterring investment. The cash-flow tax also raises revenue from capital that is in place when the reform is introduced because only new investment is expensed, although this revenue may be diminished by transition relief.<sup>6</sup>

The flat tax satisfies all three objectives—to an extent. It is a consumption tax. It also does not require households to report financial transactions; although households file tax returns, they report only their wages, the simplest part of today’s tax returns.<sup>7</sup> The flat tax also achieves some progressivity. Nevertheless, the flat tax may not be sufficiently progressive to meet social objectives. Bradford outlined a

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solution in 1986, proposing that the flat tax be modified to feature a full set of graduated rates. Workers with earnings below the exemption amount would pay no tax (refundable credits could be added, if desired), and the highest earners would pay a rate equal to the firms' tax rate, while workers with intermediate wages would face intermediate tax rates.<sup>8</sup> Bradford referred to this approach as an "X tax" in a 1988 article; it is now known as the Bradford X tax.<sup>9</sup> With graduated rates, the X tax can achieve almost any degree of progressivity, except perhaps (as discussed below) at the very highest income levels.

In its November 2005 report, the President's Advisory Panel on Federal Tax Reform urged policymakers to consider two reform options. While one option would merely have revamped the income tax, the second option, called the "growth and investment tax" plan, would have largely replaced the income tax system with an X tax featuring a 30 percent rate for firms and top wage earners. The replacement would have been incomplete, however, because a 15 percent flat-rate tax on capital income would have been retained. Some members of the panel supported a "progressive consumption tax" plan that would have completely replaced the income tax with an X tax featuring a 35 percent tax rate for firms and top wage earners, but the panel did not officially recommend that plan.<sup>10</sup>

## The X Tax, Here and Now?

To explore the possibilities, promises, and challenges of progressive consumption taxation, the American Enterprise Institute and the Tax Foundation cosponsored a conference on October 24, 2008.<sup>11</sup> The conference included presentations by a number of prominent tax experts, including Rosanne Altshuler, senior staff economist for the President's Advisory Panel on Federal Tax Reform; George Yin, former chief of staff at the Joint Committee on Taxation; and Bill Thomas, former chairman of the House Ways and Means Committee.

One of us (Carroll) highlighted the benefits of the X tax compared with the current tax system. He commented that during his years at the Treasury Department under President George W. Bush (2003–2008), "we kept gravitating toward an X tax as . . . the reform that would do the most for the economy in terms of living standards

and economic growth. . . . And we were pretty convinced we could do that in a way that was distributionally neutral and revenue neutral." He described how the current tax system is actually a hybrid consumption/income tax and

explained that transforming it into an X tax may be more politically viable than frequently thought.

Williams College economist William Gentry agreed with Carroll's economic analysis and emphasized that the differences in the tax base under a pure income and pure consumption tax are small—the only difference being the tax on a portion of capital income. Therefore, at least with regard to progressivity, there should be little separating the two tax approaches. Gentry and Carroll described the main differences between the current tax system and a pure income tax—including the corporate tax and favorable tax treatment of health insurance, housing, and retire-

ment accounts—and agreed that these provisions also buy little progressivity. The opinion espoused by some members of the President's Advisory Panel that the progressive consumption tax was inherently less progressive than the current tax system therefore appears flawed.

The other speakers at the conference were less sanguine in their appraisals of the X tax. Yin pointed out that the President's Advisory Panel should be viewed as a political science experiment—an idealized model of legislative debate on fundamental tax reform—that demonstrated that consensus on an X tax cannot be reached. Gentry agreed with Yin's conclusion that the political will for fundamental reform was lacking, and he added: "If there's no political will for it, it suggests that people don't want it. And if people don't want it, then maybe we shouldn't do it."

Yin also commented that the potential to create an X tax that looks like our current tax system may be a liability, not an asset. He noted that the 15 percent tax on capital income in the growth and investment tax plan was little more than an add-on to appease those concerned with fairness issues, despite the fact that the pure X tax in the progressive consumption tax plan was designed to be just as progressive as the current system. Yin feared that this add-on would be just the beginning and that any attempt to create a consumption tax that looks like our current structure would, over time, have its most economically beneficial provisions eroded by the political process

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and the need for revenue. “It isn’t difficult to imagine that this tax system would quickly evolve into a huge mess,” he concluded—perhaps not so unlike our current tax system.

Other speakers expressed concern over whether either the current tax system or a reformed one would raise adequate revenue. The speakers agreed that any tax reform proposal must take into account the massive future revenue needs that will be driven by the alarming upward trend in entitlement spending projected for the next several decades. Therefore, the revenue-neutrality constraint frequently applied in tax reform discussions should be modified. In this vein, Thomas, Yin, and Urban-Brookings Tax Policy Center director Leonard E. Burman highlighted the potential for a dual tax system that includes both an income tax and a VAT. Burman proposed adding a VAT to pay for health care spending, repealing the alternative minimum tax, and cutting income tax rates.

Thomas noted that an add-on VAT might be a politically and economically attractive option to fund spending growth. “I do not believe that [the Obama] administration . . . has any belief that tinkering on the margin . . . comes anywhere near the revenue [needed to pay for its programs],” he added. He predicted that the drive for revenue will lead policymakers toward a VAT.

## Some Challenges

The X tax offers an appealing model to achieve the economic gains of switching completely to consumption taxation while maintaining the current level of progressivity. For the X tax to be viable, however, some issues must be addressed.

The X tax may face a political obstacle because the household part of the tax applies to households that receive labor income but not to those that receive capital income. It also may be difficult to match the current system’s measured progressivity for households at the very highest income levels, such as those in the top 0.1 percent. Because these households receive a large fraction of their income from the returns to capital, they will receive an apparent tax reduction under the X tax, an outcome that may be viewed as improper. Nevertheless, as Carroll and Gentry explained at the October 24 conference, two factors mitigate the perceived difficulty of replicating the tax burden at the top. First, recent research suggests that a substantial portion of the burden of the current corporate income tax, which would be replaced by the X tax, falls on workers rather than owners of capital. Second, above-normal

investment returns, which are a significant part of capital income, would continue to be taxed under the business part of the X tax.

Transition issues pose a concern under a move to any type of consumption tax, including the X tax. International trade poses another matter for discussion. Conventional VATs are border-adjusted, with taxes imposed on imports as they enter the economy and rebated on exports as they leave the country. An important question for an X tax is whether similar import taxes and export rebates should apply and whether such an adjustment can be reconciled with international trade rules.

Unlike the sales tax, VAT, or PET, the X tax must distinguish wages from business cash flow, which is taxed at a flat rate at the firm level. Although wages received by the top earners would also be taxed at that rate, wages paid to the majority of workers would be taxed at lower rates—as discussed above, that is the key to the progressivity of the tax. In some contexts, however, the distinction between wages and business cash flow is far from clear. If a person operates a sole proprietorship, how much of the business cash flow is attributable to his labor rather than to above-normal returns and his initial capital on the effective date? It is also necessary to determine how businesses with negative cash flow would be treated.

Like the sales tax and VAT, but unlike the PET and the current income tax, the X tax ignores financial transactions. Although that is partly the source of its simplicity, it introduces one new complication—the need to distinguish financial transactions from real business transactions. That distinction is particularly difficult in the context of banks and other financial intermediaries.

Much of the tax reform debate has been consumed by a debate between eliminating the tax penalty on saving and ensuring tax progressivity. Although the Bradford X tax has received little public attention, it offers a way to achieve both goals while also simplifying the tax system. To be sure, some questions surrounding the design and implementation of an X tax remain to be answered. Given the potential economic gains, however, addressing those issues should be a high priority for tax economists.

## Notes

1. Neutrality requires that the consumption tax rate remain constant over time.

2. See Alan J. Auerbach, “Tax Reform, Capital Allocation, Efficiency and Growth,” in *Economic Effects of Fundamental Tax Reform*, ed. Henry J. Aaron and William G. Gale (Washington, DC:

Brookings Institution Press, 1996), 29–73 (which estimates long-run output gains of 3.2–9.7 percent from various proposals to replace the income tax with a consumption tax); President’s Advisory Panel on Federal Tax Reform, *Simple, Fair, and Pro-Growth: Proposals to Fix America’s Tax System* (Washington, DC: Government Printing Office, November 2005), 190, available at [www.taxreformpanel.gov/final-report/](http://www.taxreformpanel.gov/final-report/) (accessed December 5, 2008) (which estimates a 6 percent long-run increase in output from the progressive consumption tax that it considered); and David Altig, Alan J. Auerbach, Laurence J. Kotlikoff, Kent A. Smetters, and Jan Walliser, “Simulating Fundamental Tax Reform in the United States,” *American Economic Review* 91, no. 3 (June 2001): 574–95 (which reports long-run output gains ranging from less than 2 percent to more than 6 percent for various consumption tax proposals).

3. President’s Advisory Panel on Federal Tax Reform, *Simple, Fair, and Pro-Growth: Proposals to Fix America’s Tax System*, 22.

4. The taxes discussed in this *Outlook* are more fully described in *ibid.*, 37–40.

5. Robert E. Hall and Alvin Rabushka, *Low Tax, Simple Tax, Flat Tax* (New York: McGraw Hill, 1983).

6. David F. Bradford, “Consumption Taxes: Some Fundamental Transition Issues,” in *Frontiers of Tax Reform*, ed. Michael J. Boskin (Stanford, CA: Hoover Institution Press, 1996), 123–150.

7. Households’ wages would have to be tracked anyway, assuming that the payroll tax continued to be used to finance Social Security and Medicare.

8. David F. Bradford, *Untangling the Income Tax* (Cambridge, MA: Harvard University Press, 1986), 81–82, 329–34.

9. David F. Bradford, “What Are Consumption Taxes and Who Pays Them?” *Tax Notes* (April 18, 1988): 383–91.

10. President’s Advisory Panel on Federal Tax Reform, *Simple, Fair, and Pro-Growth: Proposals to Fix America’s Tax System*, 182–89.

11. Video, audio, and an executive summary of this event are available at [www.aei.org/event1792/](http://www.aei.org/event1792/).