

Proposal 10: Creating an American Value-Added Tax

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Deficit Reduction (10-year): \$1.6 trillion

Broader Benefits: Raises revenue in a manner that does not distort saving and investment choices.

Lawrence Summers of Harvard University explained in a quip why the United States had not adopted a value-added tax so far. “Liberals think it’s regressive and conservatives think it’s a money machine.” If they reverse their positions, the V.A.T. may happen, he said.

—Jan M. Rosen, “Tax Watch; The Likely Forms of New Taxes,” *New York Times*, December 19, 1988

Introduction

The Great Recession and its aftermath have left the United States with a difficult fiscal situation: a weak economy that would benefit from short-term stimulus, but also projected medium- and long-term budget shortfalls, even after the economy recovers, that indicate the need for fiscal consolidation. Addressing these medium- and long-term problems will likely require a combination of spending cuts and revenue increases. While tax reform would be a laudable goal even in the absence of a fiscal problem, building a better tax system becomes even more imperative when revenue requirements rise and the equity and efficiency of the tax code are put under greater scrutiny and pressure.

We propose a value-added tax (VAT) to contribute to the U.S. fiscal solution. A 5 percent broad-based VAT, paired with subsidies to offset the regressive impacts, could raise about

1 percent of GDP, or about \$160 billion, per year. Although it would be new to the United States, the VAT is in place in about 150 countries worldwide and in every non-U.S. OECD country. In recent years, the VAT has raised about 20 percent of the world’s tax revenue (Keen and Lockwood 2007). This experience suggests that the VAT can raise substantial revenue, is administrable, and is minimally harmful to economic growth. Additionally, the VAT has at least one other potential advantage worth highlighting: a properly designed VAT might help the states deal with their own fiscal issues. Although a VAT would be regressive relative to current income, this regressivity can be easily offset by transfers that would make the net burden progressive. A VAT should only be imposed after the economy has returned to full employment, as the depressing effects of increased taxation in a demand-driven economy would suppress the economic recovery.

As the United States faces heightened long-term fiscal pressure, policymakers face the challenge of raising revenues in a way that puts as little burden on the economy as possible. While much of the discussion so far has focused on changes to income taxes, a consumption tax—here offered in the form of a VAT—offers advantages over higher income tax rates in terms of economic efficiency.

Like a retail sales tax, a VAT is a tax on consumption. Under a VAT, businesses pay taxes on the difference between their total

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sales to other businesses and households and their purchases of inputs from other businesses. That difference represents the value added by the firm to the product or service in question. The sum of value added at each stage of production is the retail sales price, so in aggregate the VAT simply replicates the tax patterns created by a retail sales tax and is like other flat tax rates on aggregate consumption. The key distinction is that VATs are collected at each stage of production, whereas retail sales taxes are collected only at point of final sale. This distinction makes the VAT more administrable than a retail sales tax.

In the most common implementation of the VAT, producers are taxed based on their total output, and then receive credit for taxes they have paid on purchases to other firms.¹ The tax credit thus acts as an incentive for compliance, and the VAT in practice is less likely to be evaded than is a retail sales tax.² The VAT is therefore widely preferred to a retail sales tax when considering options for taxing consumption.

A VAT is also border-adjustable, since taxes on exports can be rebated at the border and imports can be taxed at the VAT rate. While this is sometimes touted as providing economic benefits, it is actually a neutral treatment of these items. Taxes assessed on imports ensure an even playing field across imported and domestic consumption goods, and the rebate for exports ensures that exporters are only taxed on the consumption of their product.

The Proposal

We propose the United States add a new 5 percent VAT to be applied to all consumption except for spending on education, Medicaid and Medicare, charitable organizations, and state and local government. This VAT would be paired with a cash payment of about \$450 per adult and about \$200 per child to offset the cost to low-income families (the equivalent of annually refunding each two-parent, two-child household the VAT owed on the first \$26,000 of consumption). In all, this VAT could raise about 1 percent of GDP, or about \$160 billion per year as of 2013. However, the proposal should not be implemented until the economy is fully recovered from the recent downturn. CBO projects that this will not happen until 2017. If the VAT described here were implemented in 2017, policymakers could still raise \$1.6 trillion in revenue over the remainder of the current 10-year budget period (2014-23). Policymakers may also choose to create a VAT with a higher rate and to adjust the rebates to achieve the desired revenue and distributional effects.

REVENUE

A VAT is a critical revenue stream for industrialized countries. Among non-U.S. OECD members in 2009, the VAT raised 6.4

percent of GDP in revenue and accounted for 19.2 percent of revenue raised at all levels of government. As with any tax, revenue from a VAT depends on the rate structure and the base. The standard VAT rate, the rate charged on most goods and services, has remained relatively steady in recent years in non-U.S. OECD countries. In 2012, it ranged from a low of 5 percent in Japan to a high of 27 percent in Hungary. The average rate was 18.7 percent (OECD 2012).

The VAT yield ratio, an indicator of its efficacy, measures VAT revenues as a share of GDP divided by the standard VAT rate; it shows the percent of GDP that can be raised for each one percent rise in VAT tax rate. A ratio of 0.3, for example, implies that a 10 percent VAT raises 3 percent of GDP in revenues.³ Note that the yield ratio does not include the net costs of policies intended to compensate low-income households for VAT payments, nor does it include the offsetting effects that the VAT may have on other revenue sources. The yield ratio simply measures how much revenue is actually gained from the VAT itself.

In 2012, in non-U.S. OECD countries, the yield ratio ranged from a low of 0.21 in Mexico to a high of 0.58 in New Zealand. Most countries fell within a range of 0.30 and 0.45 (OECD 2012). The yield ratio depends critically on the extent to which the VAT tax base is kept broad, rather than narrowed by preferential rates or exemptions on certain goods or services. In practice, most OECD countries apply preferential rates to some items. Of the thirty-three OECD countries with a VAT in 2012, sixteen exempted certain goods and twenty-seven applied at least one nonzero reduced rate to a subsector of goods. Only Chile and Japan had no preferential rates (OECD 2012).

A low-rate VAT could generate substantial revenue. Based on estimates from Toder and Rosenberg (2010), we estimate that the United States could raise gross revenue of \$355 billion in 2012 through a 5 percent VAT applied to all consumption except for spending on education, Medicaid and Medicare, charitable organizations, and state and local government. This would represent about 2.3 percent of GDP and produce a yield ratio of 0.45 (table 10-1).

However, as discussed below, gross VAT revenue can be reduced by preferential tax treatment, cash subsidies to households, and offsets in other tax bases. Preferential treatment is afforded certain types of consumption through either exclusions, or zero or lower rates; these preferences can markedly lower the amount of revenue raised. For example, exempting rent, new home purchases, food consumed at home, and private health expenditures from the VAT in the United States would reduce revenue by 38 percent, cutting the yield ratio to 0.28.

TABLE 10-1.

Revenue Effects in 2012 of a 5 percent VAT

	Broad Base			Narrow Base		
	Billions of Dollars	Percent of GDP	Yield Ratio	Billions of Dollars	Percent of GDP	Yield Ratio
Gross revenues	355.5	2.26	0.45	221.4	1.40	0.28
Cost of demogrants	97.7	0.62	—			
Revenue net of demogrants	257.8	1.64	0.33			
Adjustment of other taxes	96.6	0.62	—	60.5	0.38	—
Revenue net of other taxes	160.9	1.02	0.20	160.9	1.02	0.20

Source: Toder and Rosenberg (2010).

Cash payments are an important tool for offsetting regressivity, but also will lower the revenue yield. For example, according to Toder and Rosenberg (2010), under a broad base, a cash payment of \$437 per adult and \$218 per child would cost \$97.7 billion. Note that, under this option, the official revenue collected by the VAT would remain at \$355.5 billion and the measure of the yield ratio—given by VAT revenues and the standard rate of 5 percent—would remain at 0.45. But what might be called the effective revenue—that is, the revenue gain from the VAT, net of the costs of making the compensatory cash payments—would fall to \$257.8 billion, or 1.64 percent of GDP, giving an effective yield ratio of 0.33.

Imposing the VAT would reduce net business income, which would in turn reduce other revenues. Toder and Rosenberg (2010) estimate that declines in other tax receipts would offset about 27 percent of gross VAT revenues. This would reduce effective revenues—after netting out the costs of cash payments and the loss in other revenues—to 1.02 percent of GDP for either base, resulting in an effective yield ratio of 0.20.

These figures imply, after allowing for offsetting adjustments in other taxes and the costs of either cash payments or narrowing the base as described above, that a 5 percent VAT would raise just over 1 percent of GDP in revenues.

EFFICIENCY

A common concern with raising taxes is that taxes will distort behavior, favoring certain goods or activities at the expense of others. A broad-based VAT that is levied uniformly on all goods and services would not distort relative prices among consumption goods. Similarly, a VAT with a constant tax rate over time would not distort household saving choices, nor would it distort choices businesses make regarding new investments, financing instruments, or organizational form.⁴

Like the income or payroll tax, however, the VAT would distort household choices between work and leisure.

A substantial literature, based on economic theory and simulation models, documents the potential efficiency gains from *substituting* a broad-based consumption tax for an income tax (Altig et al. 2001; Auerbach 1996; Fullerton and Rogers 1996). These gains arise from a combination of broadening the tax base, eliminating distortions in saving behavior, and imposing a one-time tax on existing wealth.

The tax on existing wealth merits additional discussion. As a tax on consumption, the VAT can be regarded as a tax on the wealth and income that households use to finance current and future consumption: wealth that exists at the time of the transition to the VAT, future wages, and extra-normal returns to capital (Hubbard and Gentry 1997).⁵ The tax on existing wealth is a lump-sum tax, since the wealth has already been accumulated. Lump-sum taxes are preferable to other forms of taxation on efficiency grounds, since they do not distort economic choices. The lump-sum tax on existing wealth is a major component of the efficiency gains due to the creation of a consumption tax.⁶

The efficiency and growth effects due to an *add-on* VAT includes both losses from the increased distortion of work-or-leisure choices and substantial gains from the one-time tax on existing wealth, noted above, and substantial gains from deficit reduction.

DISTRIBUTIONAL EFFECTS AND OFFSETTING POLICIES

The distributional burden of the VAT depends on how household resources are measured. Typical distributional analyses are made with respect to current income. The VAT is regressive if households are classified by, and the tax burden is measured as a share of, current income (i.e., income earned in any given year). Because the VAT is a proportional tax on

relative price stability, four have not changed their VAT rate and four have decreased the rate; the average rate increase across all late-adopters of the VAT is less than one percentage point. The average VAT in OECD countries has been roughly constant since 1984 at or just below 18 percent.

Moreover, in the current U.S. budget context, a VAT would only be created as part of an overall budget deal that also dealt explicitly with spending targets.

MAKING THE VAT TRANSPARENT

A variant of the concern about spending growth is the notion that the VAT is hidden in overall prices. As a result, the argument goes, taxpayers will not notice the VAT the way they do income, sales, or payroll taxes, enabling Congress to increase the VAT rate without much taxpayer resistance.

This issue is easily addressed. The VAT does not have to be invisible: for example, Canada simply requires that businesses print the amount of VAT paid on a receipt with every consumer purchase. This is essentially identical to the standard U.S. practice of printing sales taxes paid on each receipt.¹⁰ Another way to make the VAT transparent is to link VAT rates and revenues with spending on particular goods. Aaron (1991) and Burman (2009) propose a VAT related to health spending. Under such a system, the additional health insurance coverage would help offset the regressivity of a VAT and make the costs of both the VAT and government spending more transparent.

THE STATES

Some analysts express concern that a national VAT would impinge on states' ability to administer their own sales taxes. In our view, a national VAT could help states significantly. State retail sales taxes are poorly designed: they exempt many goods and most services and collect more than 40 percent of their revenue from taxing business purchases, which should be exempt.¹¹

Converting sales taxes to VATs and piggybacking on a broad-based federal VAT would offer states several advantages. First, the states could raise substantial amounts of revenue in a less distortionary manner than current sales taxes. Second, administrative costs, which currently exceed 3 percent of state sales tax revenue (PriceWaterhouseCoopers 2006), would decline. Many states currently link their income tax base to the federal income tax base, with obvious administrative and compliance advantages. Similar savings would accrue from linking federal and state VAT bases. Third, a national VAT would allow states and the federal government to tax previously difficult-to-tax transactions, such as interstate mail order and internet sales. If the U.S. experience follows that of Canada, the federal government could collect revenue on

CASE STUDY: THE CANADIAN VAT

Although not without its problems, the VAT has proven to be an effective solution in many countries.¹⁴ The Canadian experience with a VAT may be a particularly relevant example for the United States. In 1991, Canada implemented a 7 percent VAT at the national level to replace a tax on sales by manufacturers. Many of the concerns associated with the VAT in the United States can be assuaged by observing the Canadian experience.¹⁵

Canada addressed distributional concerns by applying a zero rate to certain necessities and adding a refundable tax credit in the income tax. As noted above, we prefer the latter method. The Canadian VAT is completely transparent: it is listed separately on receipts just like sales taxes in the United States. Perhaps because of the transparency, the VAT has not led to significant growth of government spending. Federal spending in Canada has in fact gradually declined from 22.6 percent of GDP in 1991—when the VAT was implemented—to 14.9 percent in 2009. The standard VAT rate has declined over time to 6 percent in 2006 and 5 percent in 2008. Federal tax revenue in Canada has fallen from 17.6 percent of GDP in 1991 to 16.3 percent of GDP in 2007 (and fell further to 14.6 percent during the 2009 recession). In terms of both revenues and expenditures, the size of the Canadian federal government has shrunk significantly since the introduction of the VAT. Since 1991, Canadian inflation and economic growth rates have been similar to those in the United States.

Coordinating provincial sales taxes with the VAT has proven to be challenging, but manageable. After the VAT was introduced, provinces over time began to coordinate their sales taxes with the federal VAT. Two decades after the VAT's implementation, five of the ten provinces adopted harmonized VATs, making their provincial tax bases essentially identical to the federal base. In these cases, the federal government administers the provincial tax on behalf of the province, and the provincial governments set their own VAT rates. Quebec administers its own VAT; three provinces administer their own retail sales taxes. One province and the three territories have no consumption tax. The United States could accommodate a variety of state choices regarding consumption taxes in similar fashion.

behalf of states and absolve states of the cost of administering consumption taxes altogether (Duncan and Sedon 2010).

While the states could relatively easily coordinate with a federal VAT, it may seem less likely that the thousands of localities that impose sales tax would coordinate with the VAT. That does not create any special problems, however—it just means that whereas merchants currently collect state and local sales taxes, they would instead collect a combined federal and state VAT and a local sales tax.

consumption, and because lower-income households tend to spend a larger proportion of their income than higher-income households, the VAT imposes higher burdens—as a share of current income—on lower-income households.

However, several other perspectives are possible. The VAT is a proportional tax if households are classified by current consumption since all households are taxed at the same rate on the amount they consume. Likewise, to the extent that current consumption mirrors average lifetime income, the VAT is also proportional with respect to lifetime income. Empirical research broadly confirms these notions (Caspersen and Metcalf 1994; Metcalf 1994; Toder and Rosenberg 2010). However, empirical analysis is complicated by the fact that alternative methods of distributing the burden of a consumption tax, such as distributing the burden to consumption versus wages and capital less investment, can produce drastically different estimates of progressivity, even though they are equivalent in theory (Burman, Gravelle, and Rohaly 2005).

As mentioned earlier, the VAT imposes a one-time tax on existing wealth, a feature that is desirable on efficiency grounds but is more controversial with regard to fairness. We believe a one-time tax on wealth would be fair, and that it would be quite progressive. There is concern that imposing a VAT would hurt the elderly, a group that has high consumption relative to its income. However, Social Security and Medicare are the principal sources of income for a substantial proportion of low-income elderly households. Since those benefits are effectively indexed for inflation, low-income elderly households would be insulated from any VAT-induced increases in the price of consumer goods or health-care services.⁷ High-income elderly households, who receive much lower shares of their income in the form of indexed government benefits, would need to pay more in taxes but could afford to do so.

Concerns about the regressivity of the VAT are valid, but they should not obstruct the creation of a VAT for two reasons. First, while we accept the validity of distributional considerations, what matters is the progressivity of the overall tax and transfer system, not the distribution of any individual component of that system. Clearly, the VAT can be one component of a progressive system.

Second, it is straightforward to introduce policies that can offset the impact of the VAT on low-income households. The most efficient way to do this is simply to provide households either refundable income tax credits, adjustments to cash-transfer benefits, or outright payments.⁸ For example, for a 5 percent VAT, a \$1,310 cash payment or “demogrant” would equal VAT paid on the first \$26,200 of a household’s consumption. Households that spend exactly \$26,200 on

consumption would pay no net tax. Those that spend less on consumption would receive a net subsidy. Those that spend more on consumption would pay, on net, a 5 percent VAT only on their purchases above \$26,200. Toder and Rosenberg (2010) estimate that a VAT coupled with a fixed payment to families is generally progressive, even with respect to current income.

In contrast, many OECD governments and U.S. state governments offer preferential or zero rates on certain items like health care or food to increase progressivity. This approach is largely ineffective because the products in question are consumed in greater quantities by middle-income and wealthy taxpayers than they are by low-income households.⁹ Furthermore, this approach creates complexity and invites tax avoidance as consumers try to substitute between tax-preferred and fully taxable goods and policymakers struggle to characterize goods. For example, if clothing were exempt from the VAT, Halloween costumes classified as clothing would be exempt, while costumes classified as toys would not.

ADMINISTRATIVE ISSUES

A broad-based VAT would cost less to administer than the current income tax. For example, in the United Kingdom administrative costs of the VAT were less than half of those of the income tax, measured as a share of revenue. Similarly, the New Zealand revenue department was required to intervene in just 3 percent of VAT returns, compared to 25 percent of income tax returns (Government Accountability Office [GAO] 2011).

Theory and evidence suggest that the compliance burden would likely fall more heavily—as a percentage of sales—on smaller businesses. Most countries address these concerns by exempting small businesses from collecting the VAT. In 2012, twenty-four out of the thirty-three OECD countries with a VAT exempted businesses with gross receipts beneath specified thresholds, varying from \$1,616 to \$95,833 (OECD 2012).

Finally, it is worth noting that, to the extent that administrative costs are fixed with respect to the VAT standard rate, the presence of such costs suggests that the VAT should be set at a relatively higher rather than lower rate.

EFFECT ON GOVERNMENT SPENDING

Some observers argue that the VAT is such an efficient and invisible tax that it would be used to fuel government spending increases through a gradually increasing VAT rate. Bartlett (2010a, 2010b) addresses this claim by noting that increased VAT rates in OECD countries were common among early adopters, who operated a VAT in the high-inflation environments in the 1970s, but far less common among countries that adopted a VAT after 1975. Among the seventeen countries that instituted a VAT during the post-1975 period of

In 2009, state and local sales tax revenue equaled 2.0 percent of GDP.¹² If the federal VAT had the broad base and demogrants described in table 10-1, and the states and localities piggybacked on that structure, an average subnational VAT of about 6 percent would raise the same revenue as existing state and local sales taxes.¹³ Alternatively, states could maintain their sales taxes or create their own VAT bases. Following the implementation of a federal VAT in Canada, most provinces maintained their existing tax codes for several years. Some provinces have yet to fully harmonize with the federal VAT, while Quebec administers its own VAT (Duncan and Sedon 2010).

INFLATION

The creation of an add-on VAT will create pressure on prices. If, instead, the VAT were replacing a sales tax, there would be no pressure or need to adjust the price level. In our view, the Federal Reserve should accommodate the one-time price rise inherent in the creation of an add-on VAT. Failing to do so would create significant and unnecessary adjustment costs in terms of lost jobs and wages.

There is no theoretical or empirical reason, however, to expect that the VAT would cause continuing inflation. Research has found only a weak relationship between the VAT and continually increasing prices. In a survey of thirty-five countries that introduced the VAT, Tait (1991) finds that 63 percent exhibited no increase in the consumer price index (perhaps because they were replacing existing sales taxes) and that 20 percent had a one-time price rise. In the remaining 17 percent of cases, the introduction of the VAT coincided with ongoing acceleration in consumer prices, but in Tait's view, it is not likely that the VAT caused the acceleration.

Conclusion: An American VAT

The structure of an American VAT should include

- A very broad base;
- Rebates or income tax credits (rather than product exemptions) to achieve progressivity;
- Efforts to raise transparency (for example, having VAT listed separately on receipts); and
- Explicit links to spending discipline.

While we are not wedded to a particular rate, we do note that a 5 percent VAT with a broad base could raise about 1 percent of GDP in revenues, even after netting out the offsetting adjustments in other taxes and the costs of compensating households for VAT payments on a reasonable level of consumption.

Other than the resources used to provide the rebate, VAT revenues should be used largely, if not completely, for deficit reduction. While tax and spending reform require continued attention from policymakers, closing the fiscal gap is a top priority. To the extent that VAT revenues are used for other purposes, there will be fewer options left for balancing the federal budget.

We believe the states would benefit from dropping their sales taxes and rapidly harmonizing with a federal VAT, but that is an issue they can decide for themselves. If all states did harmonize, it would send a strong signal to consumers that public policymakers are aiming to reduce consumption and raise saving.

Given current economic challenges, the timing of a VAT is important. Instituting a significant tax on consumption during a weak recovery would be counterproductive. The optimal time to implement a VAT is after the economy has returned to full employment.

The VAT is not the only tax or spending policy that can constructively help solve the fiscal problem, nor will it solve the problem by itself. Nevertheless, to oppose the VAT is to argue (a) there is no fiscal gap, (b) ignoring the fiscal gap is better than imposing a VAT, or (c) there are better ways than the VAT to make policy sustainable. No one disputes the existence of a fiscal gap, though, and the economic costs of fiscal unsustainability are enormous. As to the notion that there are better ways to put fiscal policy on a sustainable path, we would be excited to learn about them. In the meantime, policymakers should not let the hypothetical—and to date undiscovered—ideal policy get in the way of the time-tested, more-than-adequate VAT.

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Endnotes

1. Alternatively, under the subtraction method, firms can fully deduct all of their payments to other firms. For discussion of these and other options, see Bickley (2006), Cnossen (2009), and Ebrill and colleagues (2001).
2. Gale (2005) discusses administrative complications with a retail sales tax and the changes in tax rate resulting from an erosion of the tax base due to evasion.
3. If the standard VAT rate applies to all items subject to VAT, the yield ratio provides an estimate of the share of GDP that is covered by the VAT.
4. It is worth noting that the theory of optimal commodity taxation favors multiple tax rates across consumption goods. The Ramsey Rule indicates that under certain conditions commodities should be taxed inversely proportional to their demand elasticity.
5. In a risk-free world, the normal return to capital is just the risk-free rate of return. Earning the risk-free rate of return on saving does not raise the present value of consumption a household can obtain; it simply affects the timing of the consumption. Allowing for risk changes the normal return to a risk-adjusted return, but also changes the rate at which consumption is discounted, so the result continues to hold that earning the normal return (adjusted for the risk) on capital does not affect the present value (adjusted for risk) of consumption available to the household. In contrast, returns due to rents do affect the present value of consumption available to households and therefore would be subject to a consumption tax.
6. Altig and colleagues (2001) show that in the conversion to a flat tax the taxation of old capital accounts for more than 60 percent of the induced economic growth effect in the first five years, more than half of growth in the first ten years, and about 40 percent of the induced growth even after fifty years.
7. Johnson, Burman, and Kobes (2004) show that for households in the bottom quintile and second quintile of the income distribution for the elderly, 80 percent and 68 percent, respectively, of their financial (i.e., non-Medicare) income comes from Social Security.
8. Toder, Nunns, and Rosenberg (2011) propose a two-pronged rebate. The rebate would be a credit equal to the VAT rate multiplied by a base of \$12,000 for single households and \$24,000 for married households (in 2012); the base could not exceed employment income. In addition, they propose an upward adjustment to Social Security payments to offset the reduction in real wages over time.
9. Congressional Budget Office (CBO; 1992, xv) finds that “excluding necessities such as food, housing, utilities, and health care would lessen the VAT’s regressivity only slightly.” Toder and Rosenberg (2010) find that excluding housing, food consumed at home, and private health expenditures from the consumption tax base can somewhat increase progressivity, but not as much as a per-person payment would.
10. The growing literature on tax visibility offers somewhat mixed results. Mulligan, Gil, and Sala-i-Martin (2010) find that the proportion of payroll taxes paid by employees does not have a significant effect on the size of the public pension program. Finkelstein (2009) finds that the adoption of electronic toll collection results in higher tax rates and reduced short-run elasticity of driving with respect to toll rates. Similarly, Chetty, Looney, and Kroft (2009) find that posting tax-inclusive prices reduces demand for certain goods.
11. See McLure (2002) for a description of the “nutty” world of state sales taxes. See Mazerov (2009) for an estimate that most states could increase sales tax revenue by 20 to 40 percent if “feasibly taxed” services were added to the sales tax base. See Durner and Bui (2010) for the share of sales taxes paid by businesses.
12. Authors’ calculations based on U.S. Census Bureau (2010).
13. This estimate is based on the yield ratio of 0.33 listed in table 10-1. An alert reader may question why a federal VAT would require a 5 percent rate to raise 1 percent of GDP, while a state and local VAT would only require a 6 percent rate to raise 2 percent of GDP. The answer is that the federal VAT would be an add-on tax with partially offsetting reductions in other revenue sources, as described above. In contrast, the state and local VAT discussed here would substitute for existing sales taxes and therefore would not create such offsets.
14. Albi and Martinez-Vazquez (2011, 218) conclude, “The most important tax development of the last half-century has undoubtedly been the rise to prominence of the value-added tax (VAT). This tax has taken center stage almost everywhere (with the significant exception of the United States) and has become a revenue mainstay for many countries. The success of the VAT reflects a variety of factors: its high revenue potential, its relative simplicity and logic from an administrative perspective, its impact on economic efficiency, trade, and growth, the ease with which its relatively mild consequences on income distribution and equity may be mitigated, and the fact that fewer and relatively less complex political economy issues than often arise with respect to other potential revenue-producing taxes seem to afflict its introduction and development.”
15. This section is based on Sullivan (2010). Bird and Gendron (2009) and Duncan and Sedon (2010) analyze the challenges of coordinating subnational consumption taxes with a national VAT.

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