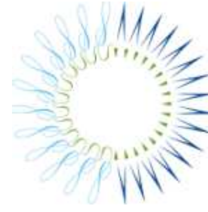

Implications of Different Bases for a VAT

Executive Summary

February 2012

Policy makers have discussed, and will likely continue to debate, the merits of implementing a value-added tax (VAT) as one option for reforming the tax system and/or addressing the federal budget deficit. When designing a VAT for either purpose, one important consideration is to what "base" it should be applied. That is, what are the types of consumption (spending on goods and services) that would be taxed under a VAT? The base chosen for the VAT affects both its distributional burden and its administrative costs. Understanding which consumption items affect specific income and age groups would inform policy makers on how alternative ways to design a VAT would affect the distribution of the tax burden across households.

This paper, written by the Tax Policy Center (TPC) and sponsored by the Pew Fiscal Analysis Initiative, examines the impacts of different VAT bases and how they vary among income and age groups. The analysis considers how different tax bases affect the VAT rate needed to reduce the deficit by 2 percent in 2015, its distributional burden, and effective marginal tax rates on different income sources.

This is the fourth in a series of papers that analyzes issues related to the enactment of a VAT. The first paper developed a new methodology for analyzing the distributional burden of a VAT, which is the methodology employed in this analysis. The second compared the impact of using a VAT with an income tax increase to raise revenues for deficit reduction, and the third analyzed the impact of a VAT used for reforming the federal income tax.

As with all papers in this series, *Implications of Different Bases for a VAT* makes no recommendations and its purpose is to inform the public debate. The insights from this series of papers should prove useful to policy makers as they discuss and consider a VAT over the next several years.

Key Findings

TPC analyzes three possible bases for a VAT: both broad and narrow bases with no rebate, and a broad base with a rebate. The rebate in the third option would offset the larger burden a VAT places on low-income households. The rebate would have two components: an earnings credit claimed on income tax returns and an adjustment in cash transfer payments.

Under the Current Policy baseline that assumes certain previously extended policies are renewed, such as items in the December 2010 tax legislation, and with a set deficit reduction goal of 2 percent in 2015, TPC finds that:

- The broad VAT base (the amount of consumption that would be taxed) would be $7.4 trillion, or 56.9 percent of total consumption and 39.8 percent of GDP, and the VAT rate would need to be set at 5 percent.
- The narrow VAT base would be $4.7 trillion, or 35.9 percent of total consumption and 25.1 percent of GDP, and the VAT rate would need to be set at 7.9 percent.
- The VAT rate for the broad VAT base with a rebate would be set at 7.7 percent, which is higher than the 5 percent rate of the broad base with no rebate option. This higher rate is needed to offset the cost of the rebate.

The distributional burden of the VAT across age and income groups would vary among the three options. TPC finds that:

- The broad and narrow VAT bases with no rebate have similar distributional effects within each age group. The burden starts high for low-income households, falls and then stays roughly constant in the middle of the distribution, and then generally resumes falling for households in the top income quintile.
- The burden for each quintile, however, is different by age group. People age 65 and older generally have a lower VAT burden than younger age groups, because these individuals derive more of their income from savings.
- Within each age group, the VAT is regressive with income for the broad and narrow bases and progressive for the broad base with a rebate option. This is because the rebate is targeted at low-income filers.

What is a VAT?

A VAT is a tax levied on household consumption and is similar in concept to the retail sales taxes in many states, though different in implementation. A VAT is applied incrementally at each stage of the production process, whereas a sales tax is levied only at the final retail stage. For example, the production of a loaf of bread involves contributions from the farmer who grows the wheat, the baker who bakes the bread, and the grocer who sells it to the consumer. Under a VAT, each party pays tax on the increase in the value of the product resulting from each stage of the process, with the consumer paying a price that includes tax on the full value of the bread. By

contrast, a retail sales tax does not apply to the intermediate production stages. Consumers still pay a tax on the full value of the bread, but only the grocer makes tax payments.

Some economists favor a VAT over the current U.S. individual and corporate income tax system because a VAT does not affect a person's choice between spending today or spending in future years. By contrast, an income tax, because it also generally applies to returns to savings and investment, does affect this choice. Also, the most common VAT structure used in countries in the Organization for Economic Co-operation and Development is, in principle, easier to enforce than the retail sales tax used in U.S. states. That is because each business along the production chain has an incentive to ensure that previous firms paid the correct amount of VAT so that they are taxed only on the value they added.

One concern with a VAT is that it could prove more burdensome on low-income households than on high-income households because low-income ones consume a larger share of their income. Thus, a key consideration for any VAT proposal is how its burden would be borne by people of different income levels, especially when compared with alternative plans. There are two ways to address this disparity: excluding certain goods and services from a VAT, or providing a rebate aimed at low-income households.

The first way to relieve some of the burden on low-income households is to exclude items that make up a larger share of their consumption, such as housing and food, from the VAT base. However, this would distort households' consumption choices because prices of VAT-exempt goods and services would be made relatively lower than prices of items subject to a VAT. Further, exclusions from the VAT base would require a higher tax rate to raise any given amount of revenue.

The second way is through a rebate. One approach would have the rebate amount increase with earnings up to some moderate level, and for the rebate amount to then remain constant for households with earnings above this level. This rebate would be designed as a refundable income tax credit on wages and self-employment income set at the VAT rate. A second approach would phase out the rebate above a certain income level. The revenue loss from the rebate under this second approach would be lower, so the VAT rate also could be lower.

TPC analyzes three options for a VAT base: broad and narrow VAT bases with no rebate, as well as a broad VAT base with a rebate. The analysis assumes that the three options would be effective in 2015 and would be set at a rate that would raise enough revenue to reduce the deficit by 2 percent of GDP. TPC's model determines the VAT level and looks at the distributional burden across income levels and age groups (under-50, 50-to-64, and 65-and-over).

For this paper, TPC uses a Current Policy baseline, which reflects the costs of policies that Congress and the president have extended in the past. The 2001/2003 tax cuts, for example, were

renewed by the December 2010 tax law, so the Current Policy baseline assumes that they will continue to be extended in the future. The baseline also assumes that Congress will continue the current exemption levels under the alternative minimum tax (AMT) and index them to inflation and will override planned cuts to Medicare Part B physician reimbursements, as it has done in the past.

The VAT Under Three Different Bases

Broad Base With No Rebate

TPC calculates the narrow and broad bases using a credit-invoice VAT, also called a goods and services tax (GST). TPC uses the National Income and Product Accounts (NIPA) definition of total consumption as a starting point for determining what types of goods and services would be included in the VAT base. TPC's broad VAT base would exclude several items from NIPA consumption for various policy reasons. For example, VATs and state retail sales taxes typically exclude certain items that are deemed socially desirable goods and services, such as education spending and expenditures by religious and nonprofit organizations to provide goods and services that are not bought by households. Certain government spending also is excluded, such as government-financed health expenditures and general government spending, which includes spending on national defense, elementary and secondary education, highways, etc. The broad VAT base also would exclude some items counted as consumption in NIPA because they would be difficult to value or administer. These exclusions include net imputed rent on owner-occupied housing, financial services provided without charge, and state and local general sales taxes.

Given these exclusions and administrative adjustments, TPC calculates that the effective broad VAT base (the amount of consumption that would be taxed) would be $7.4 trillion in 2015, or 56.9 percent of total consumption and 39.8 percent of GDP. TPC estimates that the VAT rate would need to be set at 5 percent for the VAT to reduce the deficit by 2 percent of GDP in 2015.

Narrow Base With No Rebate

The narrow VAT base also would exclude food consumed at home, housing services (rental income and investments in housing), and all health-care costs to reduce the burden on low-income households. These exclusions would leave a narrow VAT base of about $4.7 trillion in 2015, or 35.9 percent of total consumption and 25.1 percent of GDP. TPC calculates that the VAT rate for a narrow base would need to be set at 7.9 percent to reduce the deficit by 2 percent of GDP in 2015.

Broad Base with a Rebate

The third VAT option has the same broad base as the first VAT option but also includes a rebate to address the VAT burden on lower-income households.

The rebate would have two components: an earnings credit claimed on income tax returns and an adjustment in cash transfer payments. The earnings credit would be a refundable tax credit based on employment income and would phase in up to TPC's estimate of the weighted average poverty threshold of $12,000 for single filers and $24,000 for joint filers. The credit would not phase out at incomes above these thresholds.

The second part of the rebate would be aimed at recipients of certain cash transfer payments that are tied to wage levels, mainly Social Security benefits. Over time, the VAT would reduce real wages, which in turn would reduce benefits tied to wage levels. The rebate would be in the form of an annual adjustment of the government's computed benefits to maintain the pre-VAT levels. Households would receive this part of the rebate directly as part of their cash transfer payments.

Under this option, the VAT would need to be set at a higher rate (7.7 percent) than the broad base alone to reduce the deficit by 2 percent of GDP in 2015.

Distribution of the Tax Burden

When a VAT has been in place for an extended period, its burden falls entirely on labor income, supernormal returns to capital (profits above market expectations), and cash transfer payments. The options for the broad and narrow VAT bases with no rebate have similar distributional effects. The burden is highest for low-income households, falls and stays roughly flat in the middle, and generally falls again as income rises for households within the top quintile. The option that adds a rebate to the broad base eliminates the VAT burden on wages and self-employment income for low-income households and removes the VAT burden from certain cash transfer payments.

TPC found that, within all age groups, the fully phased-in VAT is somewhat regressive with income for the options with broad and narrow VAT bases with no rebate, but is progressive with income for the option that adds a rebate to the broad base. Under all three VAT options, the average VAT burden decreases with age within the three specified age groups (under-50, 50-to-64, and 65-and-over). For each option, the VAT burden on individuals age 65 and over was significantly lower at all income levels than for the younger age groups. Examining age and income groups, the 50-to-64 age group has a higher VAT burden than the under-50 group in the broad and narrow bases for the lowest, second, and middle quintiles.

The fully phased-in VAT burden is lower for the 65-and-over age group than for other groups, especially in the top quintile of the distribution, because older taxpayers receive relatively more income from capital than from labor. Younger age groups have a higher burden from a fully phased-in VAT because they receive more of their income from working.

The transitional burden of a VAT, which occurs immediately after the tax is introduced, is very different than the fully phased-in burden. For the population as a whole, in the transition, the

distribution of the VAT options without a rebate are progressive with income up through the 95th percentile of the income distribution, and regressive with income only at the very top. The progressivity at the bottom reflects the exemption of indexed transfer payments from the transitional VAT burden. The shape of the distribution, however, varies markedly among age groups. For those under age 50, for whom transfer payments are a relatively small share of income, the distribution across the bottom quintiles is only slightly progressive with income. For those 65 and over, the distribution of the VAT burden is highly progressive with income, because the share of transfer payments in income is very high for low-income tax units over age 65.

Effective Marginal Tax Rates

For all three VAT options, TPC estimated the change in effective marginal tax rates (EMTRs) on wages and accrued capital gains due to the effects of a fully phased-in VAT. The effective marginal tax rate is the additional tax paid per additional dollar of income after taking into account all provisions of the tax code.

Under the options with the broad and narrow bases with no rebate, the increases in EMTRs on wages and capital gains are nearly identical. That is because these two options raise nearly the same amount of revenue, and reduce wage and capital incomes subject to the VAT by approximately the same percentage in each income group. For both the broad and narrow bases with no rebate, the increase in EMTRs declines with income.

Under the option that adds a rebate to the broad VAT base, the average increase in EMTRs is larger than under the other two options, because the average VAT rate on all consumption is higher (due to the cost of the rebate). The higher average VAT rate results in a larger reduction in nominal federal spending because it reduces wages and producer prices more than the lower rate absent the rebate. The rebate does lessen the increase in EMTRs on wages earned by the lowest income quintile relative to higher-income levels, but otherwise, EMTRs generally still increase by lesser amounts as income goes up, as was true under the other two options.

Conclusion

This paper examines the impact of using alternative bases for a VAT designed to reduce the deficit by 2 percent of GDP in 2015. The distributional effect of each base is examined, as is the effect of each base on marginal tax rates. Although this paper does not make any recommendations, its insights should prove useful as Congress considers adopting a VAT over the next several years.

Methodology

Implications of Different Bases for a VAT employs the distributional methodology described in a TPC paper published in March 2011 entitled *Methodology for Distributing a VAT*. It combines two separate approaches: one for estimating the long-run distributional impact of a VAT after its transitional effects have been fully realized and it has become a permanent part of the tax system, and the other for estimating the transitional effects of a VAT when it is first imposed.

The long-run methodology is designed to be consistent with existing practices for estimating the distributional effects of changes in the individual income, corporate income, and payroll taxes so that a VAT can be directly compared with other taxes, while also making improvements on previous long-run methods. The methodology for estimating transitional burdens is designed to address policy makers' concerns about the short-term effects of introducing a national VAT on certain populations, particularly older individuals who might be spending down their wealth and therefore paying VAT on consumption out of prior income that has already borne income tax. This approach has four key improvements over past methodologies:

1. It separates the analysis between fully phased-in effects and transitional effects;
2. It recognizes the fact that wage-indexed cash transfer payments, such as Social Security and unemployment compensation, also bear VAT burden in the long-run;
3. In the transition, it provides a new way of estimating the burden on existing wealth that captures how it varies with an individual's age and the projected spend down of this wealth; and,
4. It holds real government spending constant after a VAT is implemented so that the net effects of the VAT on the federal deficit are properly measured.