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Value-Added Tax (VAT) as a Revenue Option: A Primer

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Summary

This report summarizes issues, arguments, and concerns relevant to a value-added tax (VAT). Long-term fiscal problems, which were exacerbated by the recession that ended in June 2009, resulted in widespread concern about the need to formulate a fiscal solution to the high budget deficits and growing national debt. The levying of a value-added tax, a broad-based consumption tax, has been discussed as one of many options to assist in resolving U.S. fiscal problems. CRS Report R41602, *Should the United States Levy a Value-Added Tax for Deficit Reduction?* provides a more comprehensive examination of issues, extensive footnoting of sources, and presentation of relevant data.

A VAT is imposed at all levels of production on the differences between firms' sales and their purchases from all other firms. Arguably, the primary reason for congressional interest in a VAT is its high potential revenue yield. Other aspects of a VAT that often raise interest or concern include international comparison of composition of taxes, VAT rates in other countries, equity, neutrality, inflation, balance-of-trade, national saving, administrative costs, compliance, intergovernmental relations, and size of government.

This report considers the experiences of the 29 nations with VATs in the 30-member Organization for Economic Cooperation and Development (OECD), relevant to the feasibility and operation of a possible U.S. VAT. In order to examine different aspects of a VAT, explanations are initially provided concerning the concept of a value-added tax, the different methods of calculating VATs, exemption, and zero-rating.

The prevailing view of tax professionals is that an optimal VAT would have the following characteristics: a broad base, a single rate, the credit-invoice method of collection, the destination principle, and a significant sales threshold for registration.

This report will be updated as issues develop, as legislation is introduced, or as otherwise warranted.

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Introduction

A value-added tax (VAT) is a broad-based consumption tax. Long-term fiscal problems, which were exacerbated by the recession that ended in June 2009, resulted in widespread concern about the need to formulate a fiscal solution to the high budget deficits and growing national debt.

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This report considers the experiences of the 29 nations with VATs in the 30-member Organization for Economic Cooperation and Development (OECD), relevant to the feasibility and operation of a possible U.S. VAT.[1] In order to examine different aspects of a VAT, it is important to understand the concept of a value-added tax, the different methods of calculating VATs, exemption, and zero-rating.

Methods of Calculating VAT

Two alternative methods of calculating VAT have been proposed for the United States: the credit-invoice method and the subtraction method. Under the *credit-invoice method,* a firm would be required to show VAT separately on all sales invoices.[2] Each sale would be marked up by the amount of the VAT. A sales invoice for a seller is a purchase invoice for a buyer. A firm would calculate the VAT to be remitted to the government by a three-step process. First, the firm would aggregate VAT shown on its sales invoices. Second, the firm would aggregate VAT shown on its purchase invoices. Finally, aggregate VAT on purchase invoices would be subtracted from aggregate VAT shown on sales invoices, and the difference remitted to the government. Under the *subtraction method*, the firm calculates its value added by subtracting its cost of taxed inputs from its taxable sales. Next, the firm determines its VAT liability by multiplying its value added by the VAT rate.

The credit-invoice method is used by 28 of 29 nations in the Organization for Economic Cooperation and Development with VATs.[3] Tax economists differ in their classifications of the Japanese VAT. Both the credit-invoice and the subtraction methods have been discussed for the United States. The prevailing view of economists is that the credit-invoice method is superior because of better enforcement.[4] This method requires registered firms to maintain detailed records

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[1] For a more robust examination of VAT issues, see CRS Report R41602, *Should the United States Levy a Value-Added Tax for Deficit Reduction?*, by James M. Bickley.

[2] An exception is the final retail stage where policymakers have the option of including or excluding the VAT from the retail sales slip.

[3] The OECD is an intergovernmental economic organization in which the 30 economically developed countries discuss, develop, and analyze economic and social policy and share expertise. The OECD members are 22 European nations, Turkey, the United States, Canada, Mexico, Australia, New Zealand, South Korea, and Japan. The United States is the only member without a VAT. For an examination of the OECD, see CRS Report RS21128, *The Organization for Economic Cooperation and Development,* by James K. Jackson.

[4] Itai Grinberg, "Where Credit is Due: Advantages of the Credit-Invoice Method for a Partial Replacement VAT," (continued...)

that are cross indexed with supporting documentation. A VAT shown on the sales invoice of one firm is the same as the VAT shown on the purchase order of another firm. Hence, the credit-invoice method allows tax auditors to cross check the records of firms.

The Government Accountability Office found that three countries, with relatively new credit-invoice method VATs (Australia, Canada, and New Zealand), took from 15 to 24 months to implement their VATs.[5]

Exemption and Zero-Rating

A VAT has two special treatments of a product or a business: exemption and zero-rating.

Exemption

A VAT may exempt either a product or a business from taxation. An exempt business would not collect VAT on its sales and would not receive credit for VAT paid on its purchases of inputs. An exempt business would not register with tax authorities and, consequently, would not be part of the VAT system. Hence, an exempt business would not have the usual VAT compliance costs and would not impose administrative costs on the government (except verification of its exemption). An exempt business's costs, however, include any tax paid on inputs, because it receives no credit for previously paid taxes. A business might be exempt because it only produces an exempt product. Also a business might be exempt because its total sales fell below some threshold. A business that sells both exempt and non-exempt products would be required to allocate its tax payments between the two kinds of sales.

Zero-Rating

A business or product could be zero-rated. A zero-rated business would not collect VAT on its sales but would receive credit for VAT paid on its inputs. This is equivalent to the business being charged a zero tax rate. A zero-rated business would be a registered taxpayer and, consequently, would involve the usual compliance and administrative costs. A zero-rated business, however, would receive a refund of any VAT paid on its inputs, therefore, its costs would not include VAT paid at earlier stages. The producer of a zero-rate product would neither pay VAT on the inputs used to produce that product nor charge VAT on the sale of that product.

Revenue Yield

The revenue yield of a VAT would depend on the size of the tax base and the tax rate. In estimating a VAT's revenue yield, economists and public officials use the operating assumption that a VAT would be fully shifted to final consumers in the form of higher prices of goods. A VAT

(...continued)

presented at the American Tax Policy Institute Conference, Washington, DC, February 18, 2009, 41 p.

[5] U.S. Government Accountability Office, *Value-Added Taxes: Lessons Learned from Other Countries on Compliance Risks, Administrative Costs, Compliance Burden, and Transition,* report no. GAO-08-566, p. 41.

(or any other major tax increase) would have a contractionary effect on the economy unless offset by other economic policies. Consequently, a revenue estimate is generally made under the assumption that the Federal Reserve would use an expansionary monetary policy to neutralize the contractionary effects of a VAT. A VAT would lower the amount of products purchased by consumers and thus reduce total demand in the economy. In response, the Federal Reserve could reduce short-term interest rates by increasing the money supply. This decline in short-term interest rates would stimulate consumer spending and private investment, and, consequently, raise total demand in the economy. Thus, an appropriate monetary policy would cause these effects on total demand to offset each other.

Because a VAT, as a new revenue source, would lower income and payroll tax revenues, the Congressional Budget Office (CBO) reduces the gross VAT revenue amount by 25% in order to calculate the net revenue amount. Also, a revenue estimate does not take into account the possible shifts in consumption patterns that might be expected if some items are taxed and others are excluded from taxation. Finally, the revenue yield would be affected by the degree of tax compliance.

For FY2011, the Urban-Brookings Tax Policy Center estimated that a 5% broad-based VAT would yield $277.2 billion ($55.44 billion per 1%).[6] The VAT base excludes education expenditures, rent, housing, and religious and charitable services.[7] This estimate assumes a 15% non-compliance rate and a 25% revenue offset from lower income and payroll taxes.[8] For FY2014, the Congressional Budget Office estimated that a 5% broad-based VAT would yield $240 billion ($48 billion per 1%).[9]

International Comparison of Composition of Taxes

One argument frequently made for a U.S. VAT is the relatively heavy reliance on consumption taxes by other developed countries. For 2007, for taxes on general consumption (e.g., VATs and sales taxes), the United States (federal, state, and local governments) had a lower reliance (7.7% of total tax revenues) than any other OECD nation.[10] Also for 2007, the United States' (federal, state, and local governments) general consumption taxes as a percentage of gross domestic product (2.2%) were lower than any other nation in the OECD.[11] This lower U.S. reliance on consumption taxes may result from all other OECD nations having a VAT at the national level.

Policy insights can be obtained by examining the experiences of other nations; however, simply because other nations have enacted a specific tax policy does not necessarily mean that it is appropriate for the United States to adopt this policy. Economic analysis of optimal taxation suggests that those choices depend on issues of efficiency, equity, and administrative and compliance costs, and should be made in the context of the overall tax and spending structure. These considerations may vary from one country to another.

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[6] Urban-Brookings Tax Policy Center, *5 percent Broad Based Value Added Tax (VAT) Impact on Tax Revenue ($ billions), 2010-19*, Table T09-0442, November 9, 2009.

[7] Ibid.

[8] Ibid.

[9] U.S. Congressional Budget Office, *Reducing the Deficit: Spending and Revenue Options*, March 2011, pp. 189-190.

[10] OECD, *Revenue Statistics: 1965-2008* (Paris: OECD Publishing, 2009), p. 89.

[11] Ibid.

VAT Rates in Other Countries

Standard VAT rates vary substantially among the 29 countries with VATs in the OECD and Chile, which will become the 31st member of the OECD during 2011. Japan and Canada have the lowest rate of 5%. Iceland has the highest rate of 25.5%, and four nations have a 25% rate. The unweighted average of standard VAT rates has risen from 16.0% in 1976 to 18.0% in 2010.[12] This high average rate is one reason for the robust revenue yield of VATs. Most countries have reduced VAT rates on certain goods and services.

Equity

A major topic concerning any proposed tax or tax change is the distribution or equity of the tax among households. There are two types of equity: vertical and horizontal. Vertical equity concerns the tax treatment of households with different abilities-to-pay. Horizontal equity concerns the degree to which households with the same ability-to-pay are taxed equally. Both vertical and horizontal equity may be affected by the measure of ability-to-pay and the tax period.

Vertical Equity

If disposable income over a one-year period is the measure of ability-to-pay, then a VAT would be viewed as regressive; that is, the percentage of disposable income paid in VAT would decrease rapidly as disposable income increases. In most discussions of tax policy, both a one-year period and annual disposable income (or some other annual income measure) are used; consequently, the VAT is viewed as being regressive.

If disposable income over a lifetime is the measure of ability-to-pay, a VAT would be mildly regressive. For lower- and middle-income households, it appears that nearly all savings are eventually consumed. Thus, it may be that for the vast majority of households, lifetime consumption and lifetime income are approximately equal. High-income households tend to have net savings over their lifetimes; consequently, they would pay a lower proportion of their disposable incomes in VAT than would lower-income groups. But the use of these highly stylized life-cycle models are controversial.[13]

If consumption is used as a measure of ability-to-pay, a single-rate VAT with a broad base would be approximately proportional regardless of the time period. In other words, the percentage of consumption paid in VAT by households would be approximately constant as the level of household consumption rises.

Policy Options to Alleviate Regressivity

Some supporters of progressive taxation oppose the VAT primarily because they believe that it is regressive. No mechanism is likely to introduce progressivity at higher income levels. But critics

[12] OECD, VAT/GST Rates in OECD Member Countries, 2010.

[13] Marin Browning and Thomas F. Crossley, "The Life-Cycle Model of Consumption and Saving," *Journal of Economic Perspectives*, vol. 15, no. 3, Summer 2001, pp. 3-22.

are especially concerned about the absolute burden of a VAT on low-income households. The degree of regressivity on lower-income households, however, can be reduced by government policy. Three often-mentioned policies are exclusions and multiple rates, income tax credits, and earmarking of some revenues for increased social spending (including indexed transfer payments).

Horizontal Equity

If disposable income is the measure of ability-to-pay, the horizontal equity of a VAT would depend on the time period. For a one-year period, a VAT would be very inequitable because households with the same level of disposable income would have widely differing levels of consumption and, consequently, payments of VAT.

For a lifetime period, the VAT would have a high degree of horizontal equity. For low- and middle-income households, almost all income is consumed over these households' lifetimes; consequently, households with the same lifetime incomes would have the same levels of consumption and the same VAT payments. Over their lifetimes, high-income households with equal incomes differ in their levels of consumption and, consequently, VAT payments.

Neutrality

In public finance, the more *neutral* a tax is, the less the tax affects private economic decisions and, consequently, the more efficiently the economy operates. Conceptually, a VAT on all consumption expenditures, with a single rate that is constant over time, would be relatively neutral compared to other major revenue sources.

A VAT would not alter choices among goods and would not affect the relative prices of present and future consumption. But a VAT cannot be levied on leisure, consequently, a VAT would affect households' decisions concerning work versus leisure. For a firm, the VAT would not affect decisions concerning method of financing (debt or equity), choice among inputs (unless some suppliers are exempt or zero-rated), type of business organization (corporation, partnership, or sole proprietorship), goods to produce, or domestic versus foreign investment.

Inflation

If the Federal Reserve implemented an expansionary monetary policy to offset the contractionary effects of a VAT, then there would be a one-time increase in the price level. For example, an expansionary monetary policy to accommodate a 5% VAT on 60% of consumer outlays might directly cause an estimated one-time increase in consumer prices of approximately 3%. There would also be some secondary price effects. Some goods would rise in price because their factors of production, especially labor, are linked to price indexes. Yet, if the Federal Reserve disregarded these secondary price increases in formulating monetary policy, these secondary price increases would tend to be offset by price reductions in other sectors of the economy.

Balance-of-Trade

Currently, all nations with VATs zero-rate exports and impose their VATs on imports. This procedure for taxing trade flows is referred to as the *destination principle* because a commodity is taxed at the location of consumption, rather than production. The destination principle creates a level playing field because imported commodities rise in price by the percentage of the VAT, but exported commodities do not increase in price. For a particular nation, the VAT rate on domestically produced and imported products would be the same. The VAT rate on a particular good would still vary among nations.

In early 1973, the United States and its major trading partners formally shifted to a flexible exchange rate system. Under this system, the supply and demand for different currencies determine their relative value. If a country has a deficit in its balance-of-trade, this deficit must be financed by a net importation of foreign capital. But net capital inflows cannot continue indefinitely. Thus, over time, this country's currency will tend to decline in value relative to the currencies of other nations. Consequently, this country's balance-of-trade deficit will eventually decline as its exports rise and imports fall. Hence, economic theory indicates that a VAT offers no advantage over other major taxes in reducing a deficit in the balance-of-trade.

National Saving

National saving consists of government saving, business saving, and personal saving. A VAT, or any other tax, that reduces the budget deficit would be expected to reduce government dissaving, and, consequently, raise national saving.

A second issue concerns the effect on the personal savings rate of levying a VAT compared to increasing income taxes. A VAT would tax savings when they are spent on consumption, allowing savings to compound at a pre-tax rate. But an income tax is levied on all income at the time it is earned, regardless of whether the income is consumed or saved. The income tax is also levied on the earnings from income saved. Consequently, some proponents of the VAT have argued that choosing a VAT, rather than an income tax, to raise revenue would increase the return from saving and, consequently, raise the savings rate.

The rate of return on savings, however, has never been shown to have a significant effect on the savings rate because of two conflicting effects. First, each dollar saved today results in the possibility of a higher amount of consumption in the future. This relative increase in the return from saving causes a household to want to substitute saving for consumption out of current income (substitution effect).

But a higher rate of return on savings raises a household's income; consequently, the household has to save less to accumulate some target amount of savings in the future (income effect). Thus, this income effect encourages households to have higher current consumption and lower current saving.

Administrative Costs

The value-added tax would likely require the expansion of the Internal Revenue Service. But the high revenue yield from a VAT could cause administrative costs to be low measured as a percentage of revenue yield. The administrative expense per dollar of VAT collected would vary with the degree of complexity of the VAT, the amount of revenue raised, the national attitude towards tax compliance, and the level of the small business exemption.

Compliance

In comparison to other broad-based consumption taxes such as the retail sales tax, a VAT can produce relatively good compliance for four reasons. First, a VAT collected using the credit-invoice method offers the opportunity to cross-check returns and invoices. Second, each firm has an incentive not to allow suppliers to understate VAT on their sales invoices. A firm is able to credit VAT paid on inputs against VAT collected on sales; consequently, a firm's net VAT liability will increase if VAT shown on its purchase invoices was understated by suppliers. Third, tax auditors can compare information about a VAT with information about business income taxation, which will increase compliance with both types of taxes. Fourth, some firms legally required to remit VAT may not register. But these firms receive no credit for VAT paid on inputs. Hence, these firms are only partially able to evade the VAT because of the compliance with the VAT by suppliers.

Although compliance with a VAT is seen as higher than other broad-based consumption taxes, the level of noncompliance can be significant. As previously discussed, some firms legally required to remit VAT may not register. Furthermore, firms may evade VAT by altering or omitting information.

Intergovernmental Relations

For the United States, a federal VAT raises two primary intergovernmental issues: the federal encroachment on the state sales tax, and the joint collection of a VAT.

Encroachment on a State Tax Source

It has been claimed that broad-based consumption taxation has traditionally been a state source of revenue while income taxation has been a federal revenue source; consequently, a federal VAT would encroach on a primary source of tax revenue for the states. Most states, however, adopted their individual income taxes before they adopted their general sales taxes. No constitutional restriction prevents the federal government from levying a VAT. Precedents exist for the federal government to levy a new tax that many states already levy. The federal government relies primarily on income taxes, but taxation of income by states has risen steadily over the years. Hence, it can be argued that the states have encroached on the primary source of revenue of the federal government.

States could continue to levy their retail sales taxes while the federal government levies a VAT. In Canada, the federal government levies a VAT, and the provinces continue to collect their retail sales taxes.

Joint Collection

States could piggy-back on a federal VAT. To do this, states would have to replace their retail sales taxes with a VAT and adopt the federal tax base. Because a federal VAT would probably have a broader base than any state sales tax, more revenue would be yielded for each 1% levied. Also, the VAT would eliminate duplication of administrative effort, permit the taxation of interstate mail order sales, permit the taxation on Internet sales, and lower total compliance costs of firms. But, states may decline the opportunity for joint collection because of their desire to maintain greater fiscal independence from the federal government.

Size of Government

In the public policy debate over a VAT, one of the more divisive issues concerns the size of the public sector.[14] There is an hypothesis that a VAT is a "money machine" because the higher revenue yield per 1% levied could allow the government to finance a growing public sector by periodically raising the VAT rate. It can be argued that the VAT is a partially "hidden" tax because consumers pay a small amount of VAT with each purchase and are not fully cognizant of the aggregate VAT paid for a year. Furthermore, the tax authorities have the option of prohibiting the VAT from being shown on retail sales slips.

Most experts generally agree that these concerns are unproven. After all, the tax rate for any tax can be increased at the margin. Furthermore, there is no proof that taxpayers are any less cognizant of a tax paid in small amounts than in one lump sum. (Although, even if taxes are visible, for taxpayers to compare the cost of the tax with the benefits from the tax, the benefits would have to be similarly visible). Some empirical studies have found that tax increases lead to increased spending, but other empirical studies have found that public demands for a larger public sector lead to tax increases. The President's [George W. Bush] Advisory Panel on Federal Tax Reform found

> sophisticated statistical studies that control for other factors that may affect the relationship between the size of government and the presence of a VAT yield mixed results. The evidence neither conclusively proves, nor conclusively disproves, the view that supplemental VATs facilitate the growth of government.[15]

[14] The optimal size of government is a value judgment. A larger public sector is neither inherently better nor worse than a smaller public sector.

[15] President's Advisory Panel on Federal Tax Reform, *Simple, Fair, & Pro-Growth: Proposals to Fix America's Tax System* (Washington: U.S. Department of the Treasury, November 1, 2005), p. 203.

Conclusions

The VAT has numerous positive characteristics such as a robust revenue yield, relative neutrality, good enforcement, border-adjustability, and reasonable administrative costs. Some critics are concerned about the VAT's regressivity; proponents say policies are available to reduce or eliminate this regressivity. The prevailing view of tax professionals is that an optimal VAT would have the following characteristics: a broad base, a single rate, the credit-invoice method of collection, the application of the destination principle, and a significant sales threshold for registration. The United States is the only developed nation without a VAT. In conclusion, the option of levying of VAT may warrant inclusion in the debate over the solution to the nation's long-term fiscal problems.

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