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CRS Report for Congress

Taxable Base of the Value-Added Tax

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Summary

The value-added tax (VAT) is a type of broad-based consumption tax, imposed in about 136 countries around the world. Domestically, it is often mentioned in policy discussions as a potential new or supplemental funding source for such large-scale social programs as Social Security, Medicare, national health insurance, etc. An example of such a proposal is H.R. 15 introduced in the 110th Congress. In addition, the VAT figures prominently in most fundamental tax reform discussions.

The key determinant of the VAT's revenue-raising potential is the size of its taxable base. This report estimates its size under two frequently used "generic" policy options: a broad-based VAT and a VAT with certain frequently mentioned exemptions. Under the assumption of the broad-based VAT, the potential revenue base could be equal to $8.6 trillion in 2007. Exempting certain expenditures, such as food, housing, healthcare, and others would reduce the taxable base to $4.6 trillion in 2007.

These estimates are likely to overstate the sizes of the taxable bases somewhat as they assume no behavioral responses and perfect compliance with the law. This report briefly discusses these important caveats and their implications for further policy analysis.

This report will not be updated.

A value-added tax (VAT) is a type of broad-based consumption tax, even though it is levied on a firm's value added at all stages of the production chain. The value added by a firm is the difference between the total value of the firm's sales and its purchases from all other firms. About 136 countries around the world impose some form of the VAT.[1] There are several ways to impose the VAT. The so called "credit method" is the most widely used. While different in form, all methods are economically equivalent to each other, but may vary in terms of simplicity, administrative costs, and compliance

[1] Organization for Economic Co-operation and Development, *International VAT/GST Guidelines* (OECD, Feb. 2006), p. 1, visited on Sept. 21, 2008, at [http://www.oecd.org/dataoecd/16/36/36177871.pdf].

rates. For a detailed description of the VAT, please refer to CRS Report RL33619, *Value-Added Tax: A New U.S. Revenue Source?* by James M. Bickley.

In the United States, the VAT is often mentioned in policy discussions as a potential new funding source for such large-scale social programs as Social Security, Medicare, national health insurance, etc. In the 110th Congress, Representative John Dingell introduced H.R. 15, which proposes levying a 5% VAT to pay for a national health care system. In addition, the VAT figures prominently in most fundamental tax reform discussions. This report estimates the size of the VAT's taxable base — the key factor determining the tax's revenue-raising potential — under two frequently considered, "generic" policy options.

Option 1. "Generic" Broad-Based Value-Added Tax

Conceptually, the VAT is a type of a consumption tax imposed on sales of goods and services, even though it is collected at all stages of the production chain. Thus, the VAT taxable base can be estimated as the value of all consumption spending taking place in the economy. **Table 1** presents calculations of the broad-based consumption tax base.[2]

Table 1. Taxable Base for Broad-based VAT, 2007

Description	2007 (billions of dollars)
The sum of:	
Personal consumption expenditures (PCE)	9,710.2
Residential private fixed investment in owner-occupied structures	396.7
Owner-occupied nonfarm dwellings — space rent	-1,063.3
Rental value of farm dwellings	-15.2
Net foreign travel	-8.9
Sales taxes	-436.5
Taxable base of the broad-based VAT	**8,583.0**

Sources: Bureau of Economic Analysis data and CRS calculations.
Totals may not add due to rounding.

The size of the taxable base is estimated at $8.6 trillion ($8,583.0 billion) in 2007, using Bureau of Economic Analysis (BEA) data.[3] The largest contributor to the base, at $9.7 trillion ($9,710.2 billion), is "personal consumption expenditures" (PCE). Private real estate investments in owner-occupied structures add an estimated $396.7 billion.

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[2] The methodology follows, with modifications, Congressional Budget Office, *Reducing the Deficit: Spending and Revenue Options*, March 1997, p. 391.

[3] U.S. Department of Commerce, BEA, Tables 2.3.5, *Personal Consumption Expenditures by Major Type of Product and Expenditure*, 3.3, *State and Local Government Current Receipts and Expenditures*, both revised Sept. 26, 2008; 2.4.5, *Personal Consumption Expenditures by Type of Product*, 5.4.5B, *Private Fixed Investment in Structures by Type*, both revised Aug. 6, 2008; all downloaded on Sept. 29, 2008, from [http://www.bea.gov]. BEA periodically revises its estimates after their initial publication, which frequently results in changes, typically relatively small in magnitude, in the reported amounts.

The deductions from the base include the imputed rental value of owner-occupied housing and farm dwellings ($1,063.3 billion and $15.2 billion, respectively). These are the amounts homeowners would have had to pay if they had rented an identical property from somebody else. It is easier to understand this concept by considering a homeowner in a dual capacity: an owner of the property and a tenant at the same property. The tenant-homeowner consumes housing services provided by him- or herself. BEA includes this value in PCE, because from an economic standpoint this transaction is no different from a regular "explicit" housing rental. No actual monetary exchange occurs in this case, however, and therefore, unlike a regular "explicit" housing rental, these hypothetical transactions would be non-taxable.

State sales taxes ($436.5 billion) are also deducted from the base, because presumably a VAT would be imposed on the price net of state sales taxes. PCE data report the amounts consumers pay including the state sales taxes. The estimate also accounts for "Net foreign travel" — the difference between expenditures in the United States by nonresidents and foreign travel spending by U.S. residents.

This estimate has an important limitation: it does not incorporate the likely taxable base reduction triggered by changes in taxpayers' behavior. The effect would be more pronounced if the VAT rate were higher. It would also depend on the comprehensiveness of the taxable base and other specifics of the law.

To make the estimate more realistic, it would be necessary to account for taxpayers' non-compliance and lawful change in behavior (so-called tax avoidance). In the absence of a specific proposal and historic data on the VAT in the United States, however, making reliable quantitative predictions about the magnitude of the taxable base reduction is problematic. International experiences range widely and therefore cannot serve as a proxy.

On the other hand, it would be reasonable to expect the size of the taxable base to grow with time in proportion to nominal economic growth. The estimates in this report do not incorporate such growth after 2007. The rate of economic growth also might depend on the VAT's taxable base and rate, as well as the eventual use of the collected revenues.

Option 2. Value-Added Tax with Certain Exemptions

Another policy option would be a VAT with a narrower taxable base, which exempts, for example, food, medical care, housing, higher education, and religious and welfare activities.[4] In selecting the set of potential exemptions, we attempted to choose the most frequently proposed ones. Of course, any specific proposal does not have to incorporate all of them.

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[4] For examples of similar, but not identical, estimates see Congressional Budget Office, *Reducing the Deficit: Spending and Revenue Options,* March 1997, p. 391, or William G. Gale and C. Eugene Steuerle, "Tax Policy Solution," in Alice M. Rivlin and Isabel Sawhill, eds., *Restoring Fiscal Sanity — 2005* (Washington: Brookings Institution Press, 2005), p. 113.

Table 2 shows the estimated taxable base of this policy option. Given these exemptions, the VAT taxable base would be $4.6 trillion ($4563.3 billion) in 2007, or about 53% of the above-estimated broad base.

Similar to the estimates of the previous section, non-compliance and tax avoidance would reduce the taxable base in this case as well. In addition, as exemptions add complexity to the tax system, the reduction in revenue might be somewhat more pronounced compared to the broad-based VAT.

In addition, the categories in **Table 2** are quite broad. Depending on the implementation, exemptions from the VAT under the actual law might encompass less than the whole segment of the economy. For example, the housing exemption might apply only to owner-occupied housing, but not to the housing rental payments. If so, the VAT taxable base would be larger than this estimate indicates. On the other hand, if some additional categories, such as the financial sector, were excluded from the base, it would be smaller.

Table 2. The VAT Taxable Base After Certain Exemptions, 2007

Description	Taxable base, 2007 (billions of dollars)
Broad-based VAT taxable base	8,583.0
Exemptions:	
Food excluding alcoholic beverages	1,163.8
Medical care	1,681.1
Housing (included in the broad base)	779.1
Higher education	143.0
Religious and welfare activities	252.7
Total exemptions	4,019.7
Total after all exemptions	**4,563.3**

Sources: BEA data and CRS calculations.
Totals may not add due to rounding.

Revenue Projection Using These Estimates

Revenues from VAT would equal, as a first approximation, the VAT rate multiplied by the taxable base. There are, however, a number of issues that make revenue projection more complicated.

First, this simple calculation works reasonably well only for low VAT rates. As the rate gets higher, the discrepancy between this simple projection and the real revenue yield would likely grow due to various feedback effects. In a more sophisticated analysis, the level of the VAT rate affects the size of the taxable base through economic agents' behavioral responses. Economic theory suggests that there would be some kind of a revenue-reducing response to imposition of the VAT, but its magnitude is highly speculative. Beyond the rate per se, it would depend to a great extent on specifics of the VAT's implementation.

Second, the estimates presented above are based on a single year of observation, 2007, and thus depend on the specific economic situation that year. For example, to the extent housing values were above their long-term trends in 2007, the absolute value of all estimates involving housing would be above the trend, too.

Third, any revenue projections should also account for any transitional or cash-flow issues, which may be significant. There would also be some administrative costs involved.

Finally, estimates of the VAT taxable base size might serve as a starting point for calculating the taxable bases of other consumption taxes, such as a national retail sales tax. It is important to remember, however, that behavioral responses and other issues discussed in this section may be even more pronounced with national sales tax or other consumption taxes. The analysis may yield a misleading picture of the revenue-raising potential of a tax, if such feedback effects were overlooked.[5]

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[5] For an overview of the issues, please see CRS Report RL32603, *The Flat Tax, Value-Added Tax, and National Retail Sales Tax: Overview of the Issues,* by Jane G. Gravelle.