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Evaluating the Value-Added Tax (VAT):
The Macroeconomic and Personal Impacts of Adopting a VAT in the United States

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Introduction

As of 2020, over 160 countries have a value-added tax (VAT), including all OECD (Organisation for Economic Co-operation and Development) countries except the United States (US) (IMF). A VAT is a consumption tax collected at "every stage of [a good's] production during which value is added to it," usually via a flat rate (Barnier). In a supply chain, firms pay VAT based on the price of the intermediary product they purchase, then later redeem tax credits equal to the VAT paid by preceding firms to prevent double-taxing. At the end of the supply chain, consumers pay VAT on the price of the final product.

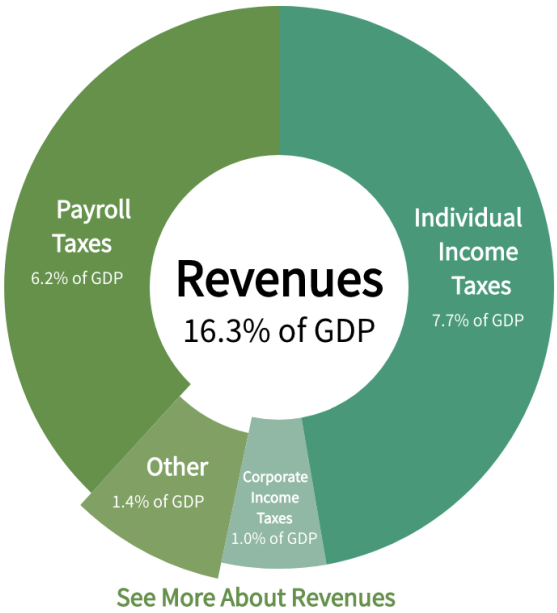
The VAT is a major source of revenue for many countries, accounting for an average of 20.4% of tax revenue in OECD countries (OECD 11). In contrast, the US has no federal consumption tax. Instead, states and local governments collect sales taxes on the final sale of goods (Cammenga). With other nations' high reliance on the VAT as a source of revenue, some economists propose implementing a VAT in the US. Proponents present the VAT as a solution to slow down burgeoning US debt, while critics caution its costs and economic consequences. Such a clash invites the question: accounting for its individual and macroeconomic impacts, should the US adopt a VAT?

This paper aims to answer this question by evaluating the costs and benefits of adopting a US VAT in five key areas: deficits, administrative costs, regressivity, inflation, and noncompliance. Since the US currently has no VAT, this paper will evaluate a potential VAT's effects with projections and comparisons to similar OECD countries like Canada and the United Kingdom (UK). Specifically, this paper will evaluate a 10% VAT, as proposed by the Brookings Institution (Gale et al. 193). This 10% rate is appropriate because it is grounded between the existing US state sales tax average (6.8%) and the average VAT rate of OECD countries (19.3%) the US will be compared to (Cammenga; OECD).

Implementing a VAT would reduce annual deficits by billions, with its revenues offsetting its administrative costs. However, a VAT would reduce low-income households' spending power, cause short-run inflation, and fail to reduce noncompliance. Overall, the US should adopt a VAT to mitigate the consequences of high federal debt, but only alongside equalizing policies that counteract its negative effects.

Reducing Deficits

The federal debt is growing unsustainably, with deficits since 2002 (US Treasury Data Lab). Deficits have increased since 2015, causing the federal debt to grow past $28 trillion in 2021 (Peter G. Peterson Foundation). Deficits can be reduced by decreasing government expenditures and increasing taxes. With an aging population, decreasing government expenditures is difficult: the demand for spending on entitlement programs like Social Security, Medicare, and Medicaid is growing rapidly, with mandatory spending accounting for 70.8% of federal outlays in 2020 (CBO). Meanwhile, implementing a VAT would be an effective option to increase tax revenues and decrease deficits. As the Congressional Budget Office shows in the figure below, the US currently earns no consumption tax revenue. Thus, implementing a VAT would bring in a new source of revenue to slow the growth of debt.



Other (1.4% of GDP):
Excise taxes, estate and gift taxes, customs duties, remittances from the Federal Reserve, and miscellaneous fees and fines.

Source: CBO. "The Federal Budget in Fiscal Year 2020: An Infographic." Congressional Budget Office, Congressional Budget Office, 30 Apr. 2021, https://www.cbo.gov/publication/57170.

Other OECD countries demonstrate that the VAT is effective in decreasing deficits. The average OECD government debt as a percentage of GDP is 80%, while the US debt as a percentage of GDP is 161% (OECD Data). Moreover, VAT revenue "typically accounts for one-fifth of total tax revenue" in OECD countries, while the US receives zero federal consumption tax revenue (Bickley 8). With the VAT being a major source of tax revenue in OECD countries, the significantly lower average debt in OECD countries than in the US indicates that the VAT is effective in slowing the growth of debt.

Furthermore, implementing a VAT would generate trillions of dollars in revenue. As shown in the below table, projections from the Congressional Budget Office estimate that a 5% VAT applied with minimal exemptions would generate $200 billion in the first year and $2.97 trillion

in the first decade. Revenues would be lower if the VAT was phased in over five years ($2.33 trillion over a decade) or applied with more exemptions ($1.92 trillion over a decade). However, even in these cases, adopting a VAT would reduce the national debt by trillions (CBO). Moreover, since the proposed VAT would use a 10% rate instead of the 5% rate assumed by the CBO, the VAT in question would generate twice as much revenue as these projections indicate.

Impose a 5 Percent Value-Added Tax

Billions of Dollars	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2019-2023	2019-2028
Change in Revenues												
Apply a 5 percent VAT to a broad base	0	200	310	320	330	340	360	360	370	380	1,160	2,970
Phase in a 5 percent VAT to apply to the same broad base	0	40	100	170	240	320	350	360	370	380	550	2,330
Apply a 5 percent VAT to a narrow base	0	130	200	210	210	220	230	230	240	250	750	1,920

Source: CBO. “Impose a 5 Percent Value-Added Tax.” Congressional Budget Office, Congressional Budget Office, 13 Dec. 2018, https://www.cbo.gov/budget-options/54820.

By reducing deficits, a VAT would minimize the economic consequences of high federal debt. First, minimizing deficits lessens the interest payments the government must pay on federal debt, allowing the government to spend more on public investment to increase economic output (Wessel). Second, increasing tax revenues reduces the need for government borrowing, decreasing the likelihood of unintentionally limiting private sector investment by the crowding out effect (Peter G. Peterson Foundation). Third, since debt is self-reinforcing, reducing the debt decreases further debt growth. Through these three mechanisms, a VAT would reduce the consequences of rising debt.

In contrast, some critics argue that other policies can reduce deficits within the existing system, rendering a VAT unnecessary. Critics posit that the government could reduce expenditures by increasing the age requirement for retirement benefits, reducing Social Security payments, and charging premiums on Medicare. They likewise offer alternative policies for raising revenues, such as increasing income tax rates and payroll tax rates. However, these policies would not only be extremely unpopular and thus politically infeasible, but would also reduce deficits on a much smaller scale than a VAT would (CBO). As a new revenue source, implementing a VAT would have a greater marginal impact on revenues than changing existing policies. Additionally, these policies could be passed alongside a VAT without diminishing the VAT’s marginal benefits. Thus, the presence of policy alternatives fails to justify not adopting a VAT.

Administrative Costs

Establishing a VAT would entail high administrative costs. As an entirely new tax, a VAT would require much overhead: the government would have to expand the Internal Revenue Service (IRS), establish new processes for collecting the VAT, and hire and train new bureaucrats. These changes would "significantly increas[e] administrative costs...during [the VAT's] startup period" (Toder et al. 2). Two separate 1995 studies estimated the cost of implementation to be "$1.0 billion" and "$1.221 billion" respectively, equalling $1.8 billion and $2.20 billion in 2021 dollars, adjusted for inflation (Bickley 17). The cost of implementation would likely be slightly greater than these projections, as these studies were unable to precisely account for the growth of the US private sector and supply chains after 1995. However, the cost of implementation is unlikely to exceed $2.5 billion (Bickley 17).

Beyond implementation, administering and collecting the VAT would also increase annual government costs. As seen in the table below, a case study of the UK found that administering the VAT cost $1.36 billion (£1.02 billion) annually, primarily to issue and process VAT invoices (OECD 16). Compared to the UK's VAT, a US VAT would have higher annual administrative costs due to its large consumer base and high GDP: the US population (331.0 million) is nearly five times larger than the UK's population (67.9 million), and US GDP is 7.73 times as large as the UK's GDP (World Population Review). Accounting for these factors proportionally, the annual administrative costs of a US VAT would slightly exceed $10 billion (OECD 16). Over time, these costs will decrease as collection processes and infrastructure become established.

Table 3: United Kingdom: Composition/size of estimated administrative VAT burden

Burden by Top 10 Obligations			Burden by Source			Burden by business size		
Information Obligation	**£m**	**%**	**Source**	**£m**	**%**	**Size type**	**£m**	**%**
Issue VAT invoices	474	47	Internal	646	65	Nano; no employees	160	16
File quarterly return	287	29						
Apply for partial exemption	68	7				Micro: 1 /9 employees	343	34
Maintain VAT account	33	3						
File monthly return	24	2	Acquis-ition	109	11	Small: 10/49 employees	166	16
Process VAT payments	23	2						
Issue retail VAT invoices	17	2				Medium: 50/ 249 employees	94	9
Process bad debt relief	10	1						
Issue proforma invoices	9	1	External	265	24	Large: over 249 employees	256	25
Apply for VAT registration	7	1						
Other	68	6						
Total	1,020	100		1,020			1,020	100

Source: OECD. "Programs to Reduce the Administrative Burden of Tax Regulations in Selected Countries." OECD, OECD, 22 Jan. 2008, https://www.oecd.org/ctp/administration/39947998.pdf.

Though the costs of implementing and administering a VAT may be high, they are offset by the revenue generated by the VAT. As discussed in the previous section, the CBO projects that a 5% VAT would produce minimum revenues of $40 billion in its inaugural year (CBO). The proposed

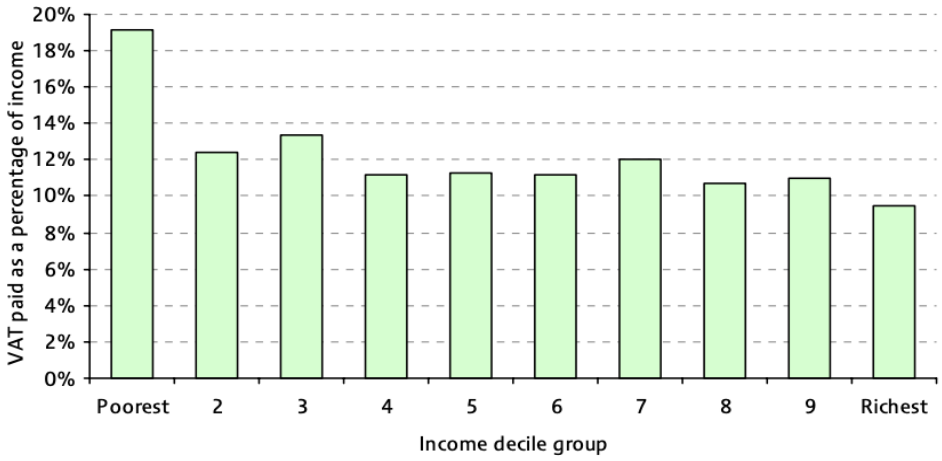
10% VAT, if applied to a broad base with minimal exceptions, could generate $400 billion in its inaugural year and even more in subsequent years (CBO). In this context, the administrative costs of the VAT—most generously estimated at $2.5 billion to implement and $11 billion to administer annually—would be outweighed by VAT revenue by billions (OECD 16). In short, a VAT would pay for itself.

Moreover, these administrative costs can be minimized by exempting small businesses and improving internal efficiency. First, exempting small businesses from the VAT would reduce the administrative burden of enforcing the VAT, and is common in most OECD countries (CBO). As shown in the above table, 50% of the UK's administrative VAT costs come from collecting VAT from businesses with less than 10 employees (OECD 16). Since these micro-firms pay comparatively small amounts of VAT compared to larger firms, exempting small businesses could cut administrative costs by half without losing significant revenue. Second, investing in bureaucratic infrastructure would minimize the largest administrative costs, as over three-quarters of the administrative costs in the UK lie in processing "VAT invoices" and "quarterly returns" (CBO). Thus, expanding the IRS's ability to process such invoices and returns would improve internal efficiency, reducing costs.

Regressivity

The VAT is a regressive tax that would disproportionately impact low-income earners. Taxes are regressive when they are "applied uniformly" to all taxpayers, regardless of income (Kagan). Regressive taxes burden low-income earners more than high-income earners, as the same taxable amount takes away a much higher proportion of a low-income earner's income than of a high-income earner's income (Barnier et al.). Since the proposed VAT would levy a flat 10% tax on all intermediary and retail transactions, the VAT is denotatively regressive.

Figure 10.1. VAT paid as a percentage of net household income



Source: Crossley, Thomas F., et al. "Value Added Tax." The IFS Green Budget: January 2009, Institute for Fiscal Studies, London, 2009, pp. 194–212, https://ifs.org.uk/budgets/gb2009/09chap10.pdf.

In the figure above, the Institute for Fiscal Studies affirms the VAT's regressivity in practice in the UK: the figure shows that taxpayers in lower income deciles pay a higher proportion of their income in VAT than taxpayers in higher income deciles (Crossley et al. 197). In addition to impacting low-income households, the National Retail Federation predicts that a VAT would also "have a large negative impact on households in the middle of the income distribution...earning between $34,000 and $74,000 per year" (Caroll et al. 17). With a higher proportion of their income spent on the VAT, low- and middle-income earners would have less disposable income to buy necessities, save, and invest—ultimately leading to a lower quality of life and decreased overall economic growth (Hoffer).

However, proponents of the VAT argue that the tax is not regressive when evaluating expenditures rather than income. The OECD finds that "the VAT appears generally either proportional or slightly progressive when measured as a percentage of current expenditures," despite appearing "regressive when measured as a percentage of current income" (Thomas 6-7). This disparity is attributable to rate exceptions on necessities, which most OECD countries implement (European Union). When evaluating spending, the UK case study finds that low-income households spend an equal or lesser proportion of expenditures on VAT than high-income households do, since the necessities that low-income households primarily spend on are taxed at a reduced or zero rate (Crossley et al. 198). Thus, rate exceptions serve as a critical factor offsetting the VAT's regressivity, proving that though the VAT is inherently regressive, it can be made progressive with supplemental policies.

To counteract the VAT's regressivity, most OECD countries supplement the VAT with at least one of two types of progressive VAT policies: reduced tax rates and VAT rebates. First, all OECD countries except for Chile "apply one or more reduced [VAT] rates," including the zero rates mentioned above, which exempt VAT on necessities like "food, water…medicine, health, education and housing" (OECD). These reduced rates allow low-income households to spend a lower proportion of their income on VAT, counteracting the VAT's regressivity. Second, many nations offer additional VAT credits and rebates to low-income households to decrease their VAT liability (Carroll et al. 43).

While these methods combat the VAT's regressivity for low-income households, "the [VAT] would still impose a relatively large tax increase on middle class households" (Carroll et al. 2). Thus, external tax policies unrelated to the VAT would be needed to further neutralize the VAT's regressivity, such as expanding the earned income tax credit (EITC) or raising the standard deduction. While enforcing alternative VAT rates, rebates, and other tax code changes would lead to increases in administrative costs, these costs would be fully offset by VAT revenues, as addressed in previous sections. In sum, the VAT's regressivity can be balanced with progressive tax policies—whether by directly modifying the VAT or not—to equitably tax low- and middle-income families.

Inflation

Implementing a VAT would lead to a one-time increase in price levels, causing inflation. In response to a new VAT, profit-seeking firms would drive higher prices in two ways. First, firms would aim to retain pre-VAT profits by raising prices, passing increased VAT liability onto consumers (Barnier et al.). Second, workers would "resist downward adjustment in nominal wage rates," likewise causing firms to increase prices to maintain profits (Carroll et al. 37). Such rising prices cause inflation, as seen in Canada after it first implemented its 7% VAT (also known as a Goods and Service Tax or GST) in January 1991 (Gelardi 144).

5.1.2. January 1991 Canada Introduces GST at 7%

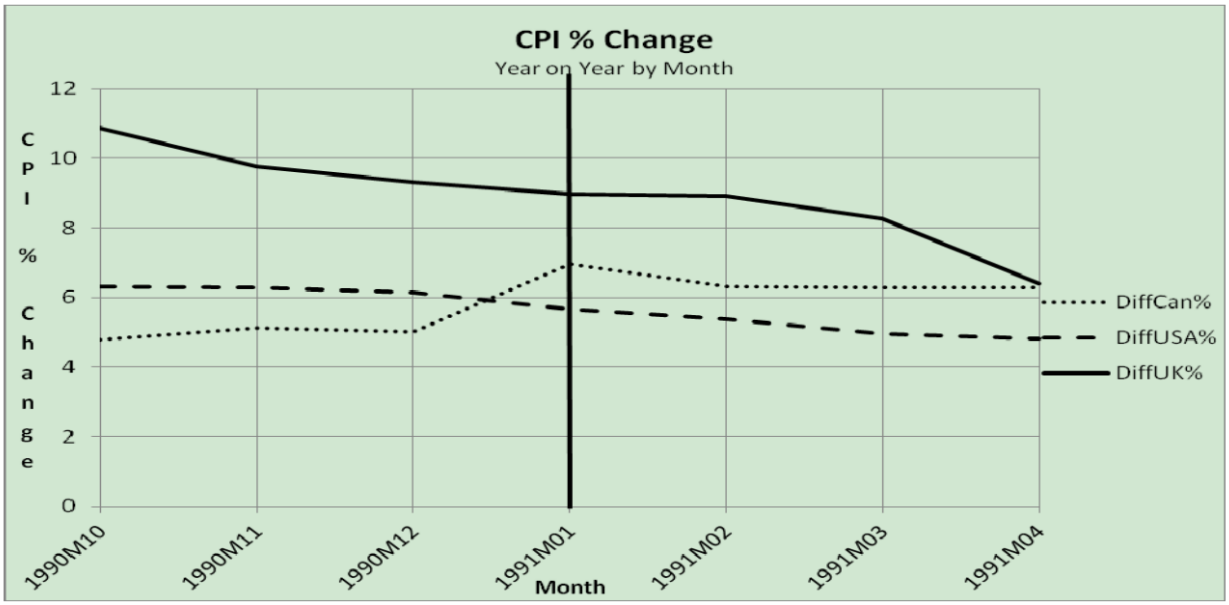


Figure 2. Canada introduces GST January 1991: CPI change from same month prior year

Source: Gelardi, Alexander M. "Value Added Tax and Inflation: A Graphical and Statistical Analysis." Asian Journal of Finance and Accounting, vol. 6, no. 1, 2014, p. 138., https://doi.org/10.5296/ajfa.v6i1.5065.

After Canada implemented its VAT, the "change in the rate of CPI (consumer price index; a measure of inflation) from the prior year increased from 5.0% to 7.0%," while the CPI decreased in both control countries, the US and the UK (Gelardi 144). The study finds the two percentage point increase in Canada's CPI statistically significant, indicating that the introduction of the VAT caused inflation. Moreover, given the similarities between Canada and the US in their geography, economic composition, and proposed VAT rate (7% in Canada; 10% in the US), it is reasonable to extrapolate the conclusion that implementing a VAT induces short-run inflation to the US (Smith).

Such short-term inflation would cause multiple consequences. First, the increase in prices would lower real incomes, decreasing the purchasing power of households while increasing the cost of living (Carroll et al. 36). Second, the uncertainty associated with inflation would disincentivize

investment in the private sector, stunting economic growth (Barnes). Third, rising prices would increase production costs, decreasing exports and limiting domestic firms' access to foreign markets (Smith). Fourth, the resultant exchange rate volatility and decreased export competitiveness could cause devaluation of the dollar (Smith). Fifth, inflationary expectations would cause households to spend more presently in fear of their money losing value later, reinforcing further inflation that would compound the above effects (Barnes). Thus, to minimize a new VAT's inflationary consequences, the VAT should be enacted alongside contractionary fiscal and monetary policy during a noninflationary period. Such an inflationary effect can also be reduced by phasing in the implementation of the VAT over multiple years (CBO).

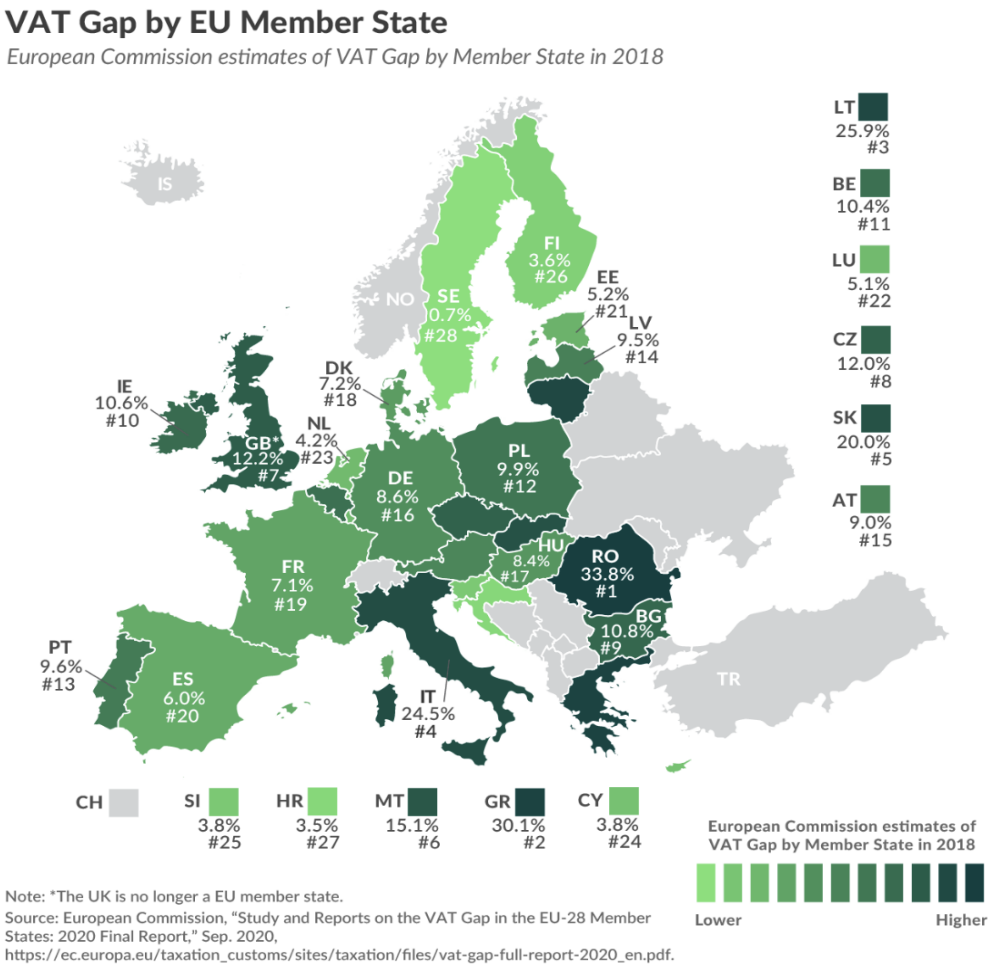
With such policies in place, economists have found that the VAT is not inflationary in the long-run. A study of the inflationary impacts of VATs in six comparator EU countries—France, Italy, Germany, the Netherlands, the UK, and Sweden—revealed that "the[se] VAT case studies 'produced few detectable effects on price levels'" months after initial implementation (Aaron; Carroll et al. 37). Corroborating this conclusion, a separate study encompassing 35 countries found that in 34 of those countries (97.1%), the VAT did not cause inflation two years after implementation (Gillis et al.). In both studies, it is important to note that the VAT was enforced in tandem with other anti-inflationary measures in nearly all of the countries examined (Aaron; Gillis et al.). Thus, these findings affirm that the VAT does not drive inflation in the long-term when coupled with contractionary policies.

Noncompliance

Some argue that replacing state sales and use (SAU) taxes with a national VAT would decrease the loss of consumption tax revenue from noncompliance. Consumption tax noncompliance primarily occurs through the "nonpayment of taxes from business and household consumers," whether through accidental misfiling or purposeful evasion (Yee 2). Proponents assert that implementing a VAT would reduce noncompliance through three main mechanisms: offering tax credits, establishing a paper trail, and exempting small businesses.

First, firms receive "input tax credits" under a VAT, which are credits for VAT paid on purchases to preceding firms in the supply chain (Feinstein). Proponents characterize these credits "as an incentive for compliance" through which firms can deduct their taxes, making the VAT to be "less likely to be evaded" than SAU taxes (Gale and Harris 2, 5). Second, with a VAT, firms would claim input tax credits at every stage of production, necessitating corresponding invoices and administrative documents. Such documentation forms a paper trail "that facilitates audits" and "may induce businesses to comply more fully with the VAT" out of fear of legal consequences (Mack et al. 202-203). Third, the proposed VAT would exempt small businesses from the collection process. Business-level tax evasion is notably prevalent and "concentrated" among small firms, so such an exemption would decrease the likelihood of VAT noncompliance in aggregate (Morse et al. 43; Mack et. al 202).

Though these mechanisms decrease noncompliance under a VAT, their benefits are ultimately nullified by the VAT's scale. While a VAT may decrease the likelihood of noncompliance for a given firm or individual, it does not do so entirely: over 20 OECD countries face prevalent VAT fraud, found in the form of falsified credit invoices, under-reported sales, and misclassified commodities (Keen and Smith 866). These credits also increase the time that firms must spend complying with the VAT, with firms in OECD countries spending 26% more time on VAT compliance than corporate income tax compliance (Carroll et al. 7). Thus, VAT tax credits are both a vehicle and motivator for noncompliance. Further, with a chance of noncompliance in every transaction, the taxation of all intermediary transactions increases the likelihood that evasion will occur. This increase in scale would also make each instance of noncompliance more difficult to find and prosecute, even with an established paper trail (Bodin and Ebrill 52-54).



Source: Zvinys, Kristina. "New European Commission Report: VAT Gap." Tax Foundation, Tax Foundation, 23 Sept. 2020, https://taxfoundation.org/vat-gap-eu-europe-2020/.

Comparisons of noncompliance between the US and EU nations further affirm the inefficacy of a VAT in combating evasion. Such noncompliance is evaluated by a state or nation's "tax gap," which is the difference between an entity's total tax liability and actual revenue collected,

expressed as a percentage of total tax liability (European Commission). As displayed in the figure above, EU member states have VAT gaps as high as 33.8%, with the average VAT gap between the 28 countries at 11.09% (Zvinys).

In comparison, states with SAU taxes like California and Washington report an estimated 3% and 4% tax gap respectively (Ibele 11). The only EU nation with a smaller tax gap than both states' tax gaps is Sweden, an outlier whose 0.7% VAT gap may be explained by a 52.9% personal income tax rate which makes its 25% VAT rate less objectionable. Though a direct comparison cannot be drawn between states and EU nations due to differences in population, the greater than 6% difference in tax gap in favor of the states indicates that replacing SAU taxes with a VAT would be ineffective in reducing noncompliance.

However, such noncompliance can be reduced by investing in the IRS to equip it with sufficient bureaucratic processing capabilities (Keen and Smith 866). Enhancing IRS oversight would allow the government to make use of the paper trail left by VAT credit invoices and more efficiently find instances of evasion. Since noncompliance under a VAT usually stems from a government's inability to process all intermediary transactions, expanding the IRS and improving its oversight capabilities would reduce VAT noncompliance as proponents purport.

Conclusion

Ultimately, the US should adopt a 10% VAT to reduce deficits and minimize the economic consequences of a high federal debt. The unsustainably high federal debt slows long-term economic growth by limiting investment in the public and private sectors, negatively impacting households' personal finances in the long-run. Implementing a VAT would generate billions of dollars in tax revenue, slowing the growth of the federal debt and mitigating its correspondent consequences. Establishing and enforcing the VAT would entail high administrative costs, but these costs would be paid for by the VAT's high revenues. These administrative costs can also be reduced by exempting small businesses and improving bureaucratic efficiency.

However, such a VAT should only be passed with policies that counteract its expected negative impacts: regressively burdening low-income households, causing short-term inflation with a one-time increase in prices, and failing to suppress noncompliance. First, to minimize the VAT liability placed on low-income households, the government should exempt necessities, reduce rates on widely used household items, and offer rebates. Outside of VAT-specific policies, the government could also expand the earned income tax credit (EITC) or increase the standard deduction. Second, the VAT should be phased in with contractionary fiscal and monetary policies to minimize inflation, such as increasing taxes, decreasing federal spending, and increasing interest rates with open market operations. Third, the US government should mitigate VAT noncompliance by investing in the IRS to expand its oversight and auditing capabilities. Overall, adopting a VAT in tandem with these policies would maximize revenues while neutralizing its negative effects, improving financial outcomes on both a macroeconomic and personal level.

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