E Tax: The Flat Tax as an Electronic Credit VAT

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I. Introduction

The Hall-Rabushka flat tax (flat tax) is a two-tier consumption tax based on a subtraction method value added tax. The Hall-Rabushka tax, however, allows a deduction for wages as if they were purchases of materials by the employer. Wage earners would be taxed on wages at rates that could be set as graduated or flat, with or without a zero rate or bracket amount, and with or without personal exemptions and deductions. Hall and Rabushka proposed a flat rate equal to the VAT rate, with a zero bracket amount, personal exemptions, and limited individual deductions.

David Bradford proposed another two-tier consumption tax, which he called the X tax. The X tax also consists of a modified subtraction VAT on the business side, in which wages are allowed as deductions and the remaining base is taxed at a single rate. The X tax, however, couples the subtraction VAT with a graduated rate wage tax on the individual side in which the top tax rate is set at the VAT rate. Before his death, Bradford suggested that the compensation tax component depart from a wage tax and instead take the form of a cash flow consumed income tax. As such, it could capture the drawdown of a worker’s qualified retirement savings in the individual’s tax base without having to view it as a type of deferred wages, which would be the case if the compensation tax component took the form of a wage tax under which investment returns were excluded from the tax base.

Both the flat tax and the X tax share a distinguishing feature. By allowing a deduction for wages at the business level but taxing those wages at the individual wage-earner level, the tax is divided into two distinct parts: a business-level tax, which is imposed on a traditional VAT base but with the allowance of a deduction for wages, and a wage tax at the individual level. In that manner, progressivity can be built into the system by using a graduated rate system for the wage tax. The tax can also be personalized by allowing personal exemptions and tax expenditure deductions from the wage tax.

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The problem with a subtraction method VAT is that it requires annual computation and collection. Under a pure subtraction VAT, the tax due at each stage is computed annually by multiplying the VAT rate by the excess of the taxpayer’s gross receipts over its deductible expenditures for the year. The cost of raw materials and capital are deductible in computing value added, but the cost of labor and returns on capital are not. The flat tax and X tax build on that structure by modifying the treatment of wages, but retain the characteristic that the tax would be computed on an annual basis by the seller and wage earner and would be collected annually from enterprises at each stage of production. Thus, a subtraction VAT must be computed and audited manually to ensure compliance because there would be no automatic, authoritative compilation of the sales and purchases on which the taxing authorities could rely. Further, because sales and purchases do not involve the flow of tax funds collected at the time of sale, there would be no electronic trail left by the flow of funds. As such, a subtraction VAT would rely on taxpayer self-reporting.

Those characteristics are failings shared with the current income tax. The failings have been controlled somewhat under the current income tax law by government reporting requirements on Form W-2 for wages and Form 1099 for other items of income, but that compliance solution is far from complete. For example, transactions whose tax consequences depend on basis, like sales of
property, remain unverified absent IRS audit. Further, the reporting requirements generally do not extend to payments to corporations.

II. The E Tax Proposal

The administrative characteristic of annual accounting and collection can be eliminated by substituting a modified credit invoice VAT for a subtraction VAT. Specifically, if the flat tax or X tax proposals were modified by substituting a credit invoice business-level VAT for the subtraction VAT, the business tax would become a point of sale or transaction tax, which could be collected in each transaction rather than annually. Thus, one could combine the credit invoice VAT, modified for wages (as discussed later), with a wage tax to build in progressivity, as the flat tax and X tax proposals do. That modification to the two-tier tax structures that have been previously proposed would both improve compliance and facilitate the automatic framework to the taxing process. “E tax” would therefore be an appropriate name for the proposal.

The administrative characteristic of annual accounting and collection can be eliminated by substituting a modified credit invoice VAT for a subtraction VAT.

A credit VAT, which is collected at the final stage of sale like a retail sales tax, can be inexpensive, accurate, and virtually leakproof in an economy in which money transfers take place electronically. To illustrate, assume a retail purchase transaction using a debit card under a VAT. When the customer’s debit card is swiped to make a purchase that is processed electronically, the retail merchant in effect gains access to the customer’s bank account. The appropriate amount, including VAT, is automatically withdrawn from the customer’s account. The clearing bank that handles the transaction electronically then makes an automatic entry, debiting the customer’s account for the purchase price plus the VAT, crediting the merchant’s account for the purchase price, and crediting the government’s tax collection account for the VAT. All of those operations would be programmed and be part of the clearing bank’s normal operations. Other electronic funds transactions, between businesses, would also work in that manner, even without an actual debit card.

A credit card transaction would operate in much the same way from the consumer’s and the merchant’s point of view. The only difference would be that the clearing bank would charge the customer’s credit account for that amount, thereby establishing a lending transaction, rather than make an immediate withdrawal from the customer’s account. The customer’s account would be charged with both the purchase price and the appropriate VAT. As in the debit transaction, the VAT would be immediately credited to the federal government’s tax collection account. In that manner, the tax collection would be automatic.

The transmission of the VAT to the government is not the end of the process for the seller. The seller would be entitled to a credit on the VAT previously paid to its suppliers. Records of the seller’s allowable credits would have been kept by the financial institution of the reporting to the seller and the taxing authority the VAT paid on the seller’s initial purchases. As a result, the seller would not be required to file an annual tax return. Rather, the seller would have to make sure only that the tax collector’s electronic records of sales and purchases and their corresponding VAT collections and payments match the seller’s own records, which they would if all parties were following prescribed procedures. Presumably, that cross-checking would be done automatically and periodically as a matter of course.

A numerical example will illustrate the mechanics of the tax collection. A retail purchase in the amount of $100 made by credit card would be subject to a VAT, set at a tax-inclusive rate of 20 percent, so that the stated purchase price would already include the $20 VAT. When the credit or debit card is used for the purchase, an amount equal to the $100 purchase price of the item would be subtracted from the debit card’s account or charged to the credit card’s account. At that time, the $20 tax portion of the charge would be credited immediately to a tax collection account of the government at the financial institution conducting the electronic bookkeeping. In the case of a VAT, the charge would be book-marked with a tax identification number to identify the purchaser for credit. The financial institution’s tax collection account would be swept either immediately or at the end of each day to a Federal Reserve account. The procedure would be exactly the same, regardless of whether a debit card, credit card, or other means of electronic funds transfer (EFT) were used. In all cases, the tax assessed at the point of sale on the transaction would be immediately charged to the purchaser and credited to the government’s account. All parties would know the amount of the charge that represented the direct sales price and the amount of the charge that represented the tax.

The same system could be used if a retail sales tax were adopted in lieu of a VAT. The essential difference between a VAT and a retail sales tax, in terms of mechanics of collection, is that under a retail sales tax, the automatic payment method described above would be the end of the process. That is, tax would be collected immediately after the sale.

12See Appendix A for an explanation of the mechanisms of a credit invoice VAT.

13Appendix B sets forth a discussion of tax-inclusive and tax-exclusive tax rates and their algebraic relationship. This example could have used the economically equivalent tax-exclusive tax rate of 25 percent, with the VAT added on to the purchase price of $80, also generating a VAT of $20.
only on the final retail sale, not on the sale of intermedi-ate goods, as would be the case under a VAT. In contrast, under a VAT, the seller would have to be given credit separately for the VAT it paid to its suppliers of raw materials. As illustrated above, the credit process would involve an additional step to complete the tax collection process. However, taxing the intermediate transactions under a VAT would reduce the risks of evasion, because the failure to collect the tax at the point of the retail sale would result in forfeiture of the seller’s credit for tax paid on the purchase and therefore would involve a smaller loss of revenue than would be the loss under a retail sales tax. It would also avoid the evasion of tax that could result from a buyer mischaracterizing a purchase as a business purchase, on which no retail sales tax is due, instead of as a consumption purchase. Under a VAT, the purchaser would be required to make that mischaracterization to the government in claiming its credit. Whereas the falsification under a retail sales tax would be one of nonreporting of the sale, the falsification under a VAT would involve an affirmative mischaracterization of an amount already reported to the government, thereby arguably making the claim easier for the government to review and verify.

At the business-supplier level, one would expect that payment would be made by other electronic means besides a debit or credit card, such as EFTs. Indeed, even paper checks are now being cleared electronically, and should also best be characterized as EFTs. Cash purchases at the noncriminal business level are rare, if they exist at all, but can be dealt with in the manner described below for cash retail purchases.

A. Anonymity

It is anticipated that most retail transactions would be undertaken with either a credit card or a debit card. In some cases, however, the customer may desire a more anonymous method of payment. For example, a taxpayer may desire confidentiality with regard to her purchases. That confidentiality could be achieved by allowing the customer to purchase a stored value card. Furthermore, to represent the substitution of stored value cards for currency, which could be used to avoid the VAT at the retail level, the holder’s personal identification attribute, such as, currently, a personal identification number (PIN) and, later, a thumbprint or retinal image, would be required to transfer funds from the unnamed account accessed by the card.

Also, cash cards could be used for small incidental purchases, such as to satisfy a parking meter. Cash cards would be printed with magnetic strips like Washington Metro fare cards. They would be subject to a VAT when purchased. For example, assuming again a VAT rate of 20 percent, the customer could purchase an $80 bearer cash card by having $100 debited to the customer’s account but receiving a stored value amount of only $80. The customer would have only the actual amount of the purchase (without the VAT amount) subtracted from the balance on the card. Correspondingly, the merchant would keep the entire proceeds of the sale, because the government would have already received its VAT or sales tax when the customer purchased the cash card.

The key to enjoying the speed and convenience of stored value cards and cash cards without facilitating the easy avoidance of tax is to ensure that the cards themselves cannot become a medium of exchange. That can be accomplished by personalizing the cards to make them usable by only the purchaser and by preventing transfer of the value embodied in the card to another card.

B. Cash Transactions

This system is also adaptable to an economy in which some transactions still take place using cash. In those transactions, the merchant would be required to record the transaction in the same manner as a debit or credit card transaction, but would direct the payment of tax electronically from its own funds. The merchant would have already collected from the customer a sufficient amount of cash to pay the tax. That payment could occur automatically by the merchant electronically reporting the sale as a cash transaction. Tax collection on cash transactions, accordingly, would be heavily dependent on compliance by the merchant. Indeed, some merchants may run their businesses entirely with cash or checks and never use credit cards or other EFT modes. Collection of tax from those merchants would require paper reporting and auditing and could result in compliance problems. As cash technology allows. See, e.g., Randall W. Sifers, “Regulating Electronic Money in Small-Value Payment Systems: Telecommunications Law as a Regulatory Model,” 49 Fed. Comm. L.J. 701, 714, 724-25 (describing security measures for smart cards).

For example, in Washington, Metro riders purchase debit SmarTrip or fare cards and put a certain amount of cash on the card. The rider flashes the SmarTrip card or inserts the fare card on entry into the station, and then reinserts the card on departure. The amount debited is based on the distance traveled. The difference between the cards lies in the central repository nature of the SmarTrip card for keeping track of any remaining value on the account, whereas the fare card uses only a magnetic strip on the card itself to keep track of value. See generally Washington Area Metropolitan Transit Authority (WMATA), SmarTrip: More than a Smart Card — It’s Pure Genius” at http://www.wmata.com/riding/smartrip.cfm (last visited July 11, 2005).

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Footnote continued in next column.
payments are replaced in the economy by electronic payments, however, compliance issues would decline. Further, to the extent there is a compliance problem, it would likely be limited to small-business retailers. The retail layer of the VAT may be at risk, but it is likely that the VAT would be reliably collected by large business suppliers, so the tax gap would be limited to the retail level. Revenue auditors, freed from the income tax, should be available to ensure reasonable compliance.

C. Sales Tax as an Alternative to a VAT

This article advocates a credit-style VAT over a retail sales tax because the VAT collects tax at all stages of production and is therefore less easily evaded. In other respects, however, a retail sales tax lends itself to automatic point-of-sale implementation as does a VAT. Disregarding that one point, arguments made in favor of a VAT should apply equally to a retail sales tax.

III. Treatment of Wages

As discussed earlier, progressivity and any desired personalizing of the tax would be introduced at the wage-earner level, as it would be with the flat tax and X tax proposals. The mechanics of wage-tax collection, however, would be slightly different than under those proposals. That point can be illustrated using the previous example, but assuming a credit VAT in which wages are subject to a VAT. A business paying wages would be entitled to a credit for the VAT on those wages against the VAT collected on sale of its products. No separate withholding, however, would have to be made for wages. The employee would be taxed on the full amount of her wages under the wage tax. The wage tax could be designed with a zero rate amount, graduated rates, and personal exemptions and deductions.

Alternatively, the system can build in a tax-collecting mechanism at the business-employer level that would systematically and periodically collect taxes on wages. That could be done under the modified credit invoice VAT by not permitting the employer to take an actual credit on VAT paid for employees. Instead, an accounting requirement would be required only of the VAT paid by the business on wages paid to each worker. The taxes paid by the business firm would become the taxes paid on behalf of the employee and would be credited to the employee’s account.

Again, the employee would compute a tax on her wage income at either a flat rate or graduated rate, with or without a zero rate amount, exemptions, and deductions, as the case may be. The VAT collected from her employer attributable to the wages would be available as a refundable credit against any wage tax liability. In concept, the VAT collected on wages would serve as an advance collection of her tax on her wage income. Under a system of electronic payments, the VAT amount on wages would be credited, automatically and electronically, to a tax payment from the employee on wages through a tax credit account for the individual employee.

As a result, when the employee reports her wages, grossed-up by the VAT computed on those wages, she will also report the VAT credited to her account by the business firm that paid the compensation. If the VAT charged to the employer on the wages and the wage tax assessed on the employee were the same, no additional payments would be required. If the VAT charged to the employer exceeded the employees’ wage tax liability, the employee would be entitled to a refund. If the wage tax liability exceeded the VAT, additional tax would be due from the employee.

For example, assume a tax-inclusive VAT of 20 percent and a wage tax at that same tax-inclusive rate. If the company that has collected the tax pays wages in the amount of $8, that $8 wage amount, plus the $2 VAT on that amount, would be taxable to the employee. The employee, however, would be entitled to a refundable credit equal to the $2 VAT that had been paid by the employer on the employee’s wages. Conceptually, that amount can be viewed as the amount collected by the employer from its customer with respect to that $10 grossed-up wage amount. That amount, $2, represents the VAT on the portion of the employer’s sale price attributable to the employee’s wage. Thus, if the employee’s wage tax, computed by subtracting from wages the applicable zero rate amount, personal exemptions, and personalized deductions, was less than $2, no additional tax would be due and, depending on the rate structure, some of the tax credit could be refunded to the employee. However, if the employee’s wage income were high and the applicable tax rate on the income exceeded 20 percent, the employee would still have additional tax liability after taking into account the $2 credit. (It should be noted that the wage earner’s tax could be computed with or without a gross-up of the $2; the choice would simply reflect the desired effective rate of the tax on the employee.) In that manner, by engrafting a wage tax onto the VAT, the tax system could be personalized for wage earners even though substantially all of the tax due would have been collected at the point of sale by means of a VAT.

The system could also be implemented in a slightly different way. The wage earner’s tax could be enacted as an income tax on wages subject to employer withholding. The employer, in turn, could be allowed a VAT credit for wage taxes withheld. The system would function mechanically, however, in the same manner for the employer as the payment of a VAT on wages. The wage withholding on the personal services income of an employee would generate a credit to the employer, but an

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19See Appendix C for an explanation of the concept of gross-up.

20See Appendix B, which demonstrates the equivalence of a 20 percent tax-inclusive rate to a 25 percent tax-exclusive rate.

21See Appendix C.
equivalent amount would be subtracted from the employee’s wages and automatically paid to the government. If the employee were then taxed on a base measured by wages in a manner similar to a personalized income tax, with a zero rate amount, graduated rates, and personal exemptions and deductions, the withholding for the employee’s wages would serve as an offset to her wage income tax. That amount could be refunded for a low-wage employee (figured as an aggregate of all of the employee’s wages for the year). A high-wage employee would have to pay additional tax if his tax liability exceeded the withheld amount.

Both conceptualizations of systematically collecting, at the business level, the tax attributable to wages described above are economically equivalent. They differ only in the technical description and legal incidence22 of the tax on wage earnings. In the first system, the legal incidence of the tax is on the employer, and the tax paid by the employer is available, computationally, as a refundable credit to the employee. In the second system, the legal incidence of the tax is on the employee, but the tax is satisfied on behalf of the employee automatically through withholding by the employer.

Moreover, this system of refundable credits for employees would serve as a substitute for the current earned income tax credit, although in a substantially simplified form. Low-wage earners would in effect receive a wage subsidy, which would be computed annually, but could be converted to periodic payments in the same manner as under the current EITC.23

IV. Conclusions

The E tax differs from the Hall-Rabushka flat tax and the Bradford X tax in that it employs a credit method VAT instead of the subtraction method VAT advocated by Hall, Rabushka, and Bradford. In almost all respects, it will not alter the macroeconomic conclusions of Hall, Rabushka, and Bradford regarding the shift to the tax, with the exception of ease of border adjustments inherent in the credit VAT over the subtraction VAT.24

The E tax, however, in contrast to the flat tax and X tax, is a transaction tax and therefore facilitates point-of-sale collection. Nevertheless, like the flat tax and the X tax, it still permits greater progressivity than a straight business-level VAT, because the separate wage-tax component of the tax allows for flexibility in tax rates, exemptions, and deductions. Although that characteristic may appear to be a simple detail without a great conceptual difference, the characteristic of taxing transactions and dispensing with annual accounting in fact makes an enormous practical difference. It would facilitate electronic collection and auditing to ensure compliance. It thereby should reduce costs of compliance after initial start-up expenses of programming, and significantly reduce the tax gap.

The E tax takes advantage of computer technology that will only get better as the 21st century progresses and the shift continues away from cash transactions to electronic transactions, including debit cards, credit cards, and EFTs. Those methods of payment have become not only commonplace but dominant in commerce. Accordingly, the time has come for serious consideration of the E tax.

Appendix A: Forms of Consumption Tax

Subtraction Method VAT

Under a subtraction method VAT, a tax is imposed on the seller of goods and services (other than employees).25 A subtraction method VAT is computed on an annual basis by the seller and is collected at each stage of production. The tax is computed by each seller of goods or services (other than employees) by multiplying the VAT rate by the excess of the gross receipts over deductible expenditures of the taxpayer for the year. The cost of raw materials and capital are deductible in computing value added. In contrast, the cost of labor and returns on capital are not deductible.

The operation of the subtraction VAT can be illustrated by a simple example. Assume a 20 percent tax-inclusive subtraction VAT rate (the concepts of tax-inclusive and tax-exclusive rates are explained in Appendix B below). Assume two sellers: Manufacturer M, who manufactures widgets and sells them at wholesale for $70, and Retailer R, who buys them from M and resells them at retail to the ultimate consumer for $100. Assume also that those are the only sales that M and R engage in during the year. M pays wages of $10 to Employee W. R pays no wages.

M has a VAT base of $70 with no deductions, because wages paid by an employer are not deductible. It therefore is liable for tax of $14, payable at the end of the year. R has a VAT base of $30 (100 - 70) and is liable for $6, payable at the end of the year. The total tax collected on the sales is $20. Those results are set forth in Table 1 below.

23 This mechanism can be fine-tuned to allow the wage earner a credit that is even greater than the amount of VAT paid by the employer on the proceeds attributable to the wage earner’s wages. For example, the credit amount could be a greater percentage (even greater than the VAT rate) of the first $10,000 of earnings and a lesser percentage of the second $10,000 of earnings (to recapture the subsidy to low wage earners). The trade off, of course, is complexity and negative work incentives for some workers, as under the current EITC.
24 Charles E. McLure Jr., “State and Local Implications of a Federal Value-Added Tax,” Tax Notes, Mar. 28, 1988, p. 1517 at 1530. See also Frederick J. Bradshaw IV, “Tax Relief and the Competitiveness of U.S. Exporters,” Tax Notes, Oct. 7, 2002, p. 129 at 130 (pointing out that indirect taxes like the credit invoice VAT are eligible for border tax adjustments under the current international trade regime, while direct taxes like the subtraction VAT are not).
25 Although the legal incidence of the tax is imposed on the seller, the economic incidence of the tax, that is, the ultimate burden of the tax, would be borne in whole or in part by the buyer and by factors of production such as labor.
The Flat Tax: A Two-Tier Tax

The flat tax represents a modification of the subtraction method VAT by changing the legal incidence of a portion of the tax, namely the portion that represents the value of employee labor. It allows a deduction for wages but taxes the employee on the wages.

Referring to the example again, under the flat tax, M would be taxed on only $60, because it would be allowed a deduction for the wages paid to W of $10. M would therefore be liable for tax in the amount of $12 instead of the $14 under the subtraction method VAT. However, unlike the regular subtraction method VAT, W would be subject to tax on his wages. If the wage tax were also set at a flat 20 percent, W would be liable for tax of $2. R would be unaffected by that nuance, because it did not pay wages. Thus, again the total tax would be $20 (12+2+6), as set forth in Table 1.

By shifting to W the legal incidence of tax on the wage portion of the value added, the tax on W can be made more flexible. A zero rate can be built into the wage tax schedule and personal exemption and tax expenditure deductions can be allowed in computing W's taxable wage base.

Retail Sales Tax and Credit Invoice VAT

Another way to tax consumption using a VAT is to tax the sellers of goods and services (other than employees) at the time the transaction takes place, that is, at the point of sale, rather than annually. That can be accomplished either by taxing only sales to ultimate consumers under a retail sales tax, or taxing all sales but only on the “value added” by the seller under a credit invoice VAT. Under a 20 percent retail sales tax in the above example, a tax would be imposed only on R, the retail seller, in the amount of $20 (100 x 20 percent).

Alternatively, a VAT can be imposed at each stage of production. Under a credit invoice VAT, M would be taxed on sale of his product to R in the amount of $14 (70 x 20 percent), and R would be taxed on his sale to the consumer in the amount of $6 under the following computation: A tax would be imposed on the full sale price of $20 (100 x 20 percent) as the first part of the computation, but R would be allowed a credit of $14, the portion of the price paid to M that represented the VAT on that purchase transaction. The total amount of tax paid on the manufacture and sale of the product ultimately to the consumer is $20, the same amount paid under the retail sales tax. The difference is that the VAT is paid piecemeal, at each stage in the chain of sales of the product, whereas the retail sales tax is all paid upon the ultimate sale to the consumer. Those results are set forth in Table 1.

The E Tax: A Two-Tier Tax

The E tax is a two-tier tax like the flat tax. As under the flat tax modification of the subtraction method VAT, the E tax separates out wages and taxes employees on those wages under a wage tax, while eliminating wages from the VAT base. Thus, W, as under the flat tax, is subject to a wage tax of $2 ($10 x 20 percent). Unlike the flat tax, however, the E tax employs a credit invoice VAT instead of a subtraction method VAT to tax businesses. Thus, in the example, under the credit invoice portion of the E tax (in its most basic form), M would pay a VAT of $14 ($70 x 20 percent) as the first part of the computation. M would then be allowed a credit for the wages paid multiplied by the VAT rate, or $2 ($10 x 20 percent), which is the amount of wage tax imposed on W. As explained before, if the wage tax were imposed at a flat 20 percent, the $2 credit is exactly the amount that W would pay in wage tax, thereby preserving the central feature of the VAT. Again, as set forth in Table 1, a total tax of $20 is paid.

Consumed Income Tax

The consumed income tax seeks to tax consumption by starting with income and subtracting from income savings and other increases in wealth during the year. As such, the tax is computed in a manner that resembles the current income tax but allows the extra deduction for all savings, not just retirement savings in qualified plans or accounts and other tax-favored savings vehicles. That model of consumption tax is sometimes referred to as the “cash flow consumed income tax” or simply as the “consumed income tax.” It is a direct tax on consumption and is not imposed indirectly on consumption by taxing the seller.

Appendix B: Tax-Inclusive vs. Tax-Exclusive Rates

Tax Inclusive vs. Tax Exclusive

The examples used in Appendix A assume a 20 percent tax-inclusive rate. That means that the money that will be used to pay the tax is itself subject to tax. Thus, a tax-inclusive sales tax rate of 20 percent on a $100 sale means that the sale price of $100 generates a sales tax of $20, which must be paid out of the $100 sales proceeds. Similarly, a tax-inclusive VAT rate must be paid out of the proceeds as well.
As we know, the typical state sales tax, unlike the above illustration, is set at a tax-exclusive rate. That means that a sale at $80, subject to a tax-exclusive rate of 25 percent, generates a tax liability of $20, but the liability is added to the transaction price, so the seller charges and the buyer pays the extra $20 in addition to the $80 sales price, for a total paid of $100. Importantly, the concept of the tax, whether the tax rate is expressed as tax-inclusive or tax-exclusive, and whether the tax rate and a wage tax computed using a 20 percent rate, although in practice they do not have to use a tax-inclusive rate. Nevertheless, as explained and illustrated above, the two methods represent different ways of describing the same tax and there is an easy way to compare them.

Thus, one can combine a 20 percent tax-inclusive credit invoice VAT with a 20 percent wage tax, as the E tax proposed in the article would do, with the consequence that the seller’s tax liability is reduced by virtue of the credit he gets for wages paid by the employee’s tax liability. For example, under the foregoing simple rate structure, a $10 wage paid would generate a credit for the employer of $2 ($10 x 20 percent).

If, however, one desired to use a tax-exclusive credit invoice VAT computed using a 25 percent tax-exclusive tax rate and a wage tax computed using a 20 percent tax-inclusive tax rate, the sale price would be set at $80, generating a VAT of $20 and a total transaction payment of $100. The employee’s wage tax would be $2 ($10 x 20 percent), and the employer’s credit would be based on the employer’s tax liability computation using the employer’s equivalent tax-inclusive rate applied to the wages. Further, even if the wage tax were more complicated and allowed a zero rate amount and deductions as under the proposed E tax, the credit would nevertheless be determined based on the employer’s tax-inclusive VAT rate applied to the wages, notwithstanding the actual tax paid by the wage earner.

Apples and Oranges

The difference between tax-inclusive taxes like the present income tax and tax-exclusive taxes like state sales taxes has caused substantial confusion at the grass-roots level in tax policy debates. As explained above, the difference lies entirely in how the tax rate is expressed and whether the proponent of the tax prefers the lower tax-inclusive rate to the higher tax-exclusive rate, and whether the proponent wants the tax to be less transparent to the consumer as part of the price or more transparent to the consumer as an add-on to the listed price.

Proponents of retaining the present income tax often compare the income tax rates to what VAT or sales tax rates would have to be to raise the same amount of revenue. As explained above, that comparison between taxes employing tax-inclusive rates and taxes employing tax-exclusive rates leads to substantial confusion and can be unfair and misleading.

Appendix C: Gross-Up

The connector between a tax-inclusive tax rate and a tax-exclusive tax rate is the tax lawyer’s concept of “gross-up.” Gross-up issues most often arise in (but are not limited to) the employment context. In that context, gross-up means including in the employee’s wage income the tax payment withheld from or credited to the employee. Thus, if the employee were subject to a tax of $2 on a wage received and the employer withheld the $2 and paid it to the government, a 20 percent tax rate would yield only $1.60 of tax liability and thereby fall short of assessing the desired amount of tax, entitling the employee to a refund. Instead, the $2 withholding must

\[ r = \frac{r_e}{1 + r_i} \]

Conversely, tax-exclusive rates can be converted into tax-inclusive rates by the following formula:

\[ r_i = \frac{r_e}{1 + r_e} \]

27 Tax-inclusive rates can be converted into tax-exclusive rates by the following formula:

\[ r = \frac{r_i}{1 - r_i} \]

28 See Old Colony Trust Co. v. Commissioner, 279 U.S. 716 (1929).
be included as wages, causing wages to total $10 and the tax at 20 percent to be $2. That inclusion is referred to as a gross-up.

Note that the $2 tax amount in the above example would result if the take-home wage amount of $8 (which does not include the tax itself) were taxed at a tax-exclusive rate of 25 percent and there were no gross-up. In other words, a tax-exclusive tax rate of 25 percent applied only to the take-home $8 and not the withheld $2 would yield the same tax amount as a tax-inclusive wage tax rate of 20 percent, including a gross-up. Thus, a grossed-up tax-inclusive tax is equivalent to a not-grossed-up tax-exclusive tax. The gross-up in a tax-inclusive system ensures that the tax is tax-inclusive and cannot be made tax-exclusive for the recipient by simply avoiding the receipt of a direct payment.29

If the tax rate structure were varied by including a zero rate amount and graduated rates, the algebra and numerical examples demonstrating the foregoing relationships become more complicated. Nevertheless, the essential concept of the relationship explained above would remain the same.

29 Id.