

of being collected all at once at the final sale to consumers, the value added tax is levied on the value added to the good or service at each stage of its production. At each stage, the tax base is receipts for the sale of goods and services less purchases of goods and services from other firms (Box 3-4).

Box 3-4: The Equivalence of Sales Taxes and Value Added Taxes

The retail sales tax and value added tax provide different methods of taxing the consumption of goods and services. Consider a simple example of bread produced and sold to households. A farmer grows wheat and sells it to a miller for \$300. The miller grinds the wheat into flour and sells it to a baker for \$600. The baker transforms the flour into bread and sells it to the grocer for \$800. The grocer sells the bread to consumers for \$1,000.

Business	Purchases	Sales	Value added	20% value added tax	20% sales tax
Farmer.....	\$0	\$300	\$300	\$60	\$0
Miller.....	300	600	300	60	0
Baker.....	600	800	200	40	0
Grocer.....	800	1,000	200	40	200
Total.....	1,700	2,700	1,000	200	200

Now consider a 20 percent tax on consumption. Under the retail sales tax, the grocer would compute the tax as 20 percent of sales and owe \$200 to the government. The farmer, miller, and baker would not pay sales tax because they sold only to other businesses for resale.

A 20 percent value added tax collects the same total revenue one step at a time as value is added to the product at each stage. The miller pays a VAT of \$60, calculated by subtracting purchases of \$300 from \$600 of sales and paying the 20 percent tax rate on the difference of \$300. The other businesses would compute their tax in the same way. The total tax would add up to \$200, the same amount as under the retail sales tax.

A European VAT (called a credit-invoice VAT) is calculated by imposing the tax on the full value and then giving a credit for VAT paid at the previous stages. The grocer would compute the \$40 VAT as 20 percent of sales of \$1,000 (or \$200) less tax credits of \$160 shown on the receipts for purchases of \$800 from the baker. The other businesses would compute their tax in the same way.

Consider what happens if the grocer fails to file and pay the amount of tax that is owed. Under the sales tax, the full amount of tax is lost to evasion. But under the VAT, only the tax on the last stage would be lost. In addition, the invoices at each stage provide a paper trail that helps improve compliance.