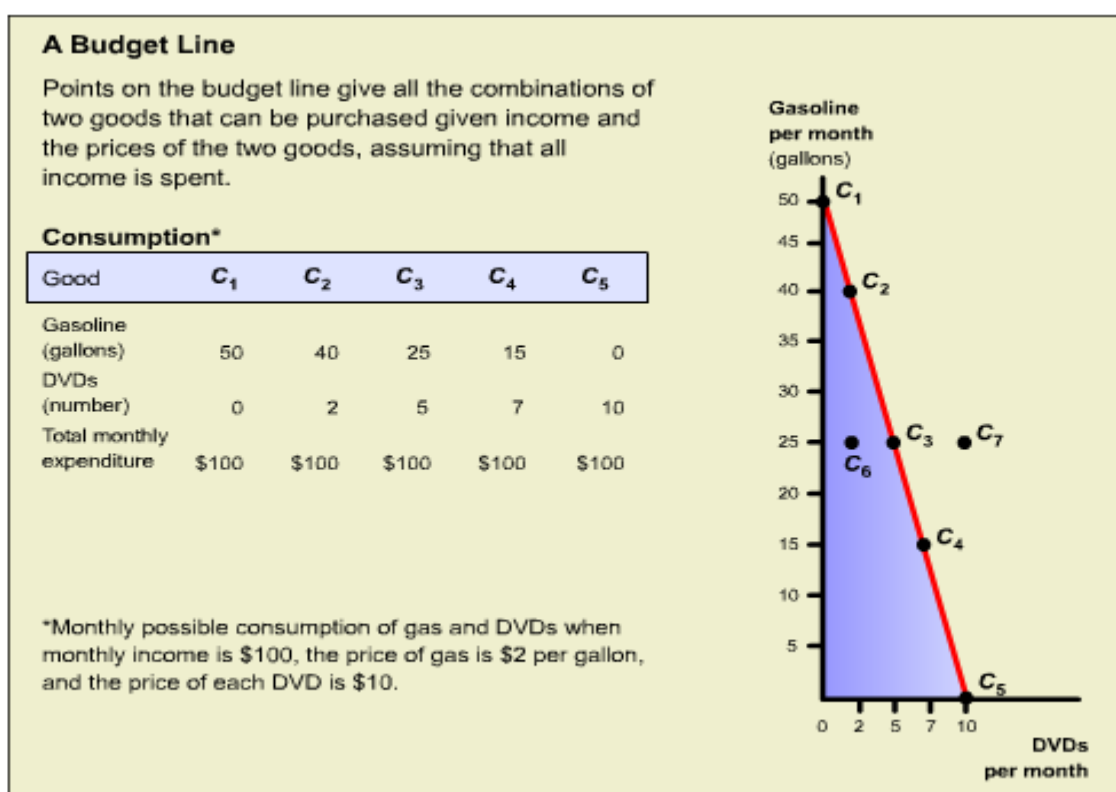


Personal Budgeting and the Opportunity Cost of Choices

Now that you understand the basic constraints the economy faces, let's focus on the constraints we as individuals face in satisfying our desires. Few of us have enough income to buy everything we want each month. Scarcity of both resources and time to satisfy all wants is a common personal problem. Most students have tight budgets that allow them to buy only a small portion of what they want. For example, suppose your parents give you a \$100 monthly allowance that you spend entirely on gas and DVDs. The rest of your living expenses (such as room and board) are paid directly by your parents. In this simple example, you therefore have only two alternatives in which you're interested in spending your available income--gas and DVDs.

Suppose the price of gas is \$2 per gallon and DVDs cost \$10 each. It's now possible to derive the combinations of these two goods that you can afford with your \$100 monthly income. The table shows five possible combinations of gas and DVDs you can buy if you spend all of your \$100 monthly income on these two items. For example, it's feasible to consume 50 gallons of gas per month. However, because gas costs \$2 per gallon, you'd spend all your monthly income on gas and forego the opportunity to buy DVDs. This option, labeled C_1 , is plotted on the graph. The monthly quantity of gas is measured on the vertical axis, while the monthly quantity of DVDs is measured on the horizontal axis. You also have the opportunity to choose the option labeled C_5 , where you'd be consuming 10 DVDs per month but would have no income left to buy gas.



The options for spending your income corresponding to points C_2 , C_3 , and C_4 have also been plotted on the graph. The monthly *budget line* shows your opportunities to purchase two items, such as gas and DVDs, if you spend all your monthly income on these two items at their current prices. With your current income and at current prices, it's possible to buy all combinations of DVDs and gas on or below the budget line. Of course, if you choose a point below the line, you'll have some of your monthly income left

over to save or spend on other items. If you choose a point like C_6 , corresponding to 25 gallons of gas and two DVDs per month, you'll be spending \$50 on gas and \$20 on DVDs for a total monthly outlay of \$70, leaving \$30 to save or to spend on other items.

On the other hand, a point like C_7 is unattainable with your current monthly income, given the current prices of gas and DVDs. Point C_7 corresponds to 10 DVDs, which would cost \$100, and 25 gallons of gas, which would cost \$50. This combination is infeasible because it requires a monthly expenditure of \$150, which exceeds your \$100 income.

The budget line therefore shows certain combinations of items that are unattainable given your limited income and the prices of the items. The shaded area represents your monthly opportunities to purchase gas and DVDs. Of course, an increase in your income shifts the budget line outward, given the prices of the two items. To see this, recalculate your possible consumption options when your income increases to \$200 per month. A decrease in the prices of both items would shift the curve outward by increasing the quantities of the items you could buy with your \$100 monthly income. To see this, recalculate the points on your budget line when the price of gas is only \$1 per gallon and the price of DVDs is \$5. Conversely, a decrease in income or an increase in the prices of both items shifts the budget line inward. Inflation in the prices of goods consumed decreases the opportunities available to consumers with fixed money income. This is one of the harmful effects of inflation

So what does the budget line tell you about opportunity costs? If you move along the budget line from C_1 to C_5 , each extra DVD you buy will absorb \$10 of your monthly income. Because the price of gas is \$2 per gallon, each extra DVD involves the sacrifice of 5 gallons of gas. *The opportunity cost of each extra DVD is therefore always 5 gallons of gas at the current prices of these two items.*

In general the opportunity cost of a DVD or any other item depends on its price relative to the price of the item you give up. For example, if the price of DVDs were \$10 each and the price of gas were \$2 per gallon, the opportunity cost of each DVD would be 5 gallons of gas. If, instead, the price of DVDs were \$20 each and the price of gas were \$4 per gallon, the opportunity cost of DVDs would *still* be 5 gallons of gas. This might surprise you, because the money cost of units of both items went up. However, the opportunity cost of an item depends on the *quantity* of the alternative item you forego when you purchase more of the item you choose. When the price of gas is \$4 and the price of a DVD is \$20, each DVD you buy results in the sacrifice of 5 gallons of gas because you could have used the \$20 to buy that amount of gas. Similarly, the opportunity cost of each gallon of gas is one-fifth of a DVD when the price of gas is \$2 per gallon and the price of a DVD is \$10. For each 5 gallons of gas you buy each month, you sacrifice the opportunity to buy one DVD.