

## 8.3: Consumption Demand

### Learning Objective

1. Learn the determinants of consumption demand and the effects of changes in these variables.

Consumption demand represents the demand for goods and services by individuals and households in the economy. This is the major category in the national income accounts for most countries, typically comprising from 50 percent to 70 percent of the gross national product (GNP) for most countries.

In this model, the main determinant of consumption demand is disposable income. Disposable income is all the income households have at their disposal to spend. It is defined as national income (GNP) minus taxes taken away by the government, plus **transfer payments** that the government pays out to people. More formally, this is written as

$$Y_d = Y - T + TR,$$

where  $Y_d$  refers to disposable income,  $Y$  is real GNP,  $T$  is taxes, and  $TR$  represents transfer payments.

In this relationship, disposable income is defined in the same way as in the circular flow diagram presented in Chapter 2, [Section 2.7](#). Recall that taxes withdrawn from GNP are assumed to be all taxes collected by the government from all sources. Thus income taxes, social insurance taxes, profit taxes, sales taxes, and property taxes are all assumed to be included in taxes ( $T$ ). Also, transfer payments refer to all payments made by the government that do not result in the provision of a good or service. All social insurance payments, welfare payments, and unemployment compensation, among other things, are included in transfers ( $TR$ ).

In the G&S model, demand for consumption G&S is assumed to be positively related to disposable income. This means that when disposable income rises, demand for consumption G&S will also rise, and vice versa. This makes sense since households who have more money to spend will quite likely wish to buy more G&S.

We can write consumption demand in a functional form as follows:

This expression says that consumption demand is a function  $C^D$  that depends positively (+) on disposable income ( $Y_d$ ). The second term simply substitutes the variables that define disposable income in place of  $Y_d$ . It is a more complete way of writing the function. Note well that  $C^D$  here denotes a function, not a variable. The expression is the same as if we had written  $f(x)$ , but instead we substitute a  $C^D$  for the  $f$  and  $Y_d$  for the  $x$ .

It is always important to keep track of which variables are exogenous and which are endogenous. In this model, real GNP ( $Y$ ) is the key endogenous variable since it will be determined in the equilibrium. Taxes ( $T$ ) and transfer payments ( $TR$ ) are exogenous variables, determined outside the model. Since consumption demand  $C^D$  is dependent on the value of  $Y$ , which is endogenous,  $C^D$  is also endogenous. By the same logic,  $Y_d$  is endogenous as well.

### Linear Consumption Function

It is common in most introductory textbooks to present the consumption function in linear form. For our purposes here, this is not absolutely necessary, but doing so will allow us to present a few important points.

In linear form, the consumption function is written as

Here  $C^0$  represents autonomous consumption and  $mpc$  refers to the *marginal propensity to consume*.

Autonomous consumption ( $C^0$ ) is the amount of consumption that would be demanded even if income were zero. (Autonomous simply means “independent” of income.) Graphically, it corresponds to the  $y$ -intercept of the linear function. Autonomous consumption will be positive since households will spend some money (drawing on savings if necessary) to purchase consumption goods (like food) even if income were zero.

The **marginal propensity to consume (mpc)** represents the additional (or marginal) demand for G&S given an additional dollar of disposable income. Graphically, it corresponds to the slope of the consumption function. This variable must be in the range of zero to one and is most likely to be between 0.5 and 0.8 for most economies. If  $mpc$  were equal to one, then households would spend every additional dollar of income. However, because most households put some of their income into savings (i.e., into the bank, or pensions), not every extra dollar of income will lead to a dollar increase in consumption demand. That fraction of the dollar not

used for consumption but put into savings is called the **marginal propensity to save (mps)**. Since each additional dollar must be spent or saved, the following relationship must hold:

$$mpc + mps = 1,$$

that is, the sum of the marginal propensity to consume and the marginal propensity to save must equal 1.

#### Key Takeaways

- In the G&S model, consumption demand is determined by disposable income.
- A linear consumption function includes the marginal propensity to consume and an autonomous consumption component, besides disposable income.
- Disposable income is defined as national income (GNP) minus taxes plus transfer payments.
- An increase (decrease) in disposable income will cause an increase (decrease) in consumption demand.
- An increase (decrease) in the marginal propensity to consume will cause an increase (decrease) in consumption demand.

#### exercise

1. **Jeopardy Questions.** As in the popular television game show, you are given an answer to a question and you must respond with the question. For example, if the answer is “a tax on imports,” then the correct question is “What is a tariff?”
  - The term that represents the additional amount of consumption demand caused by an additional dollar of disposable income.
  - The term that represents the additional amount of saving caused by an additional dollar of disposable income.
  - The term for the amount of consumption demand that would arise even if disposable income were zero.
  - Of *positive* or *negative*, the relationship between changes in disposable income and changes in consumption demand.
  - Of *positive* or *negative*, the relationship between changes in tax revenues and changes in consumption demand.
  - Of *positive* or *negative*, the relationship between changes in real GNP and changes in consumption demand.
  - A household purchase of a refrigerator would represent demand recorded in this component of aggregate demand in the G&S model.

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