

## Practice with APC, APS, MPC and MPS

### Part A

#### Average Propensities

The *average propensity to consume* (APC) is the ratio of consumption expenditures (C) to disposable income (DI), or  $APC = C / DI$ .

The *average propensity to save* (APS) is the ratio of savings (S) to disposable income, or  $APS = S / DI$ .

- Using the data in Figure 20.1, calculate the APC and APS at each level of disposable income given. The first calculation is completed as an example.



Figure 20.1

#### Average Propensities to Consume and to Save

Disposable Income	Consumption	Saving	APC	APS
\$0	\$2,000	-\$2,000	—	—
2,000	3,600	-1,600	1.8	-0.8
4,000	5,200	-1,200	<b>1.30</b>	<b>-0.3</b>
6,000	6,800	-800	<b>1.13</b>	<b>-0.13</b>
8,000	8,400	-400	<b>1.05</b>	<b>-0.05</b>
10,000	10,000	0	<b>1.00</b>	<b>0</b>
12,000	11,600	400	<b>0.97</b>	<b>0.03</b>

- How can savings be negative? Explain. *People are borrowing or reducing their savings to be able to consume at the particular level of income.*

### Part B

#### Marginal Propensities

The *marginal propensity to consume* (MPC) is the change in consumption divided by the change in disposable income. It is a fraction of any change in DI that is spent on consumer goods:  $MPC = \Delta C / \Delta DI$ .

The *marginal propensity to save* (MPS) is the fraction saved of any change in disposable income. The MPS is equal to the change in saving divided by the change in DI:  $MPS = \Delta S / \Delta DI$ .

- Using the data in Figure 20.2, calculate the MPC and MPS at each level of disposable income. The first calculation is completed as an example. (This is not a typical consumption function. Its purpose is to provide practice in calculating MPC and MPS.)



Figure 20.2

**Marginal Propensities to Consume and to Save**

Disposable Income	Consumption	Saving	MPC	MPS
\$12,000	\$12,100	-\$100	—	—
13,000	13,000	0	0.90	0.10
14,000	13,800	200	<b>0.80</b>	<b>0.20</b>
15,000	14,500	500	<b>0.70</b>	<b>0.30</b>
16,000	15,100	900	<b>0.60</b>	<b>0.40</b>
17,000	15,600	1,400	<b>0.50</b>	<b>0.50</b>

4. Why must the sum of the MPC and MPS always equal 1? *The only choice people have is to consume or to save. Thus an additional dollar in income must result in a change in consumption and/or a change in savings. The sum of the change must be one.*

**Part C**



Figure 20.3

**Changes in APC and MPC as DI Increases**

Disposable Income	Consumption	Savings	APC	APS	MPC	MPS
\$10,000	\$12,000	-\$2,000	<b>1.20</b>	<b>-0.20</b>	—	—
20,000	21,000	-1,000	<b>1.05</b>	<b>-0.05</b>	<b>0.90</b>	<b>0.10</b>
30,000	30,000	0	<b>1.00</b>	<b>0</b>	<b>0.90</b>	<b>0.10</b>
40,000	39,000	1,000	<b>0.975</b>	<b>0.025</b>	<b>0.90</b>	<b>0.10</b>
50,000	48,000	2,000	<b>0.96</b>	<b>0.04</b>	<b>0.90</b>	<b>0.10</b>
60,000	57,000	3,000	<b>0.95</b>	<b>0.05</b>	<b>0.90</b>	<b>0.10</b>
70,000	66,000	<b>4,000</b>	<b>0.94</b>	<b>0.06</b>	<b>0.90</b>	<b>0.10</b>

5. Complete Figure 20.3, and answer the questions based on the completed table.
6. What is the APC at a DI level of \$10,000? 1.20 At \$20,000? 1.05
7. What happens to the APC as DI rises? It decreases.
8. What is the MPC as DI goes from \$50,000 to \$60,000? 0.90 From \$60,000 to \$70,000? 0.90
9. What happens to MPC as income rises? It remains constant. What happens to MPS as income rises? It remains constant.
10. What is the conceptual difference between APC and MPC? *The APC measures the average consumption at any level of disposable income. The MPC measures what proportion of each additional dollar of income consumers will spend.*