

**Consumption Example**  
**Econ 311**  
**Eschker**

Given: Jazzy lives for 2 periods (today and tomorrow). This is her last year of working and her labor income is  $y_{\text{today}} = 60,000$  and  $y_{\text{future}} = 10,000$ . Her financial wealth is  $f_{\text{today}} = 40,000$ . The real interest rate is 3%,  $\beta = 1$ , and her lifetime utility function is

$$U = \log c_{\text{today}} + \beta \log c_{\text{future}}.$$

1. What is Jazzy's human wealth and total wealth?

$$HW = 60000 + 10000/1.03 = 69709$$

$$TW = 40000 + 69709 = 109709$$

2. How much does Jazzy consume today and in the future? How much does she save today?

$$C_{\text{today}} = 1/2 TW = 54855$$

$$C_{\text{future}} = 1/2 TW(1.03) = 56500$$

$$\text{Saving} = Y - C_{\text{today}} = 5145$$

3. If current labor income rises by 1000, how much will saving change?

$$\Delta C = mpc * \Delta TW = 1/2 * 1000 = 500$$

$$\Delta S = \Delta Y - \Delta C = 1000 - 500 = 500$$

4. Return to starting given values of all variables. By how much does consumption today rise if future labor income rises by 5000?

$$\Delta C = mpc * \Delta TW = 1/2 * (5000/1.03) = 2427$$

5. Return to the starting given values of all variables. If the real interest rate rises to 10%, by how much do total wealth and today's consumption change? By how much does saving change?

$$\Delta W = 10000/1.10 - 10000/1.03 = -618$$

$$\Delta C = mpc * \Delta W = 1/2 * (-618) = -309$$

$$\Delta S = \Delta Y - \Delta C = 0 - (-309) = +309$$

6. Would Jazzy's consumption and saving change if she could not borrow?

No, since she is a saver and NOT a borrower. The borrowing or liquidity constraint does not affect her.