

**Solution to FIN 533 Homework**  
**Due Tuesday, September 15, 2009**

**Holding period return**

|             |   |
|-------------|---|
| 2005 - 2006 | $HPR = \frac{(110 - 100) + 4}{100} = 14.00\%$ |
| 2006 - 2007 | $HPR = \frac{(90 - 110) + 4}{110} = -14.55\%$ |
| 2007 - 2008 | $HPR = \frac{(95 - 90) + 4}{90} = 10.00\%$    |

1. *arithmetic average* =  $\frac{14\% + -14.55\% + 10.0\%}{3} = 3.15\%$
2. *geometric time-weighted return* =  $[(1.14)(.08545)(1.10)]^{\frac{1}{3}} - 1 = 2.33\%$
- 3.

|                 | Cash flow | Explanation   |
|-----------------|-----------|---|
| CF <sub>0</sub> | -300      | Purchase of three shares at \$100 per share                                   |
| C01             | -208      | Purchase of two shares at \$110,<br>plus dividend income on three shares held |
| C02             | 110       | Dividends on five shares,<br>plus sale of one share at \$90                   |
| C03             | 396       | Dividends on four shares,<br>plus sale of four shares at \$95 per share       |

  

Timeline diagram showing cash flows at dates 1/1/05, 1/1/06, 1/1/07, and 1/1/08. At 1/1/05, there is a cash outflow of 300. At 1/1/06, there is a cash outflow of 208. At 1/1/07, there is a cash inflow of 110. At 1/1/08, there is a cash inflow of 396.

Dollar-weighted return = Internal rate of return = -0.1661%