

Finance 4000

Money and Capital Markets

Sixth class

- What makes for an efficient asset market?
 - Answer common in profession
 - Price changes are unpredictable
 - The random walk theory of stock prices
 - A better answer
 - An efficient asset market transfers ownership of the assets at the lowest cost among the alternatives available
 - This is more consistent with the usual economic meaning of efficiency
 - The economic definition of efficiency: given the resources available, the maximum amount of each good or service is being produced given the amounts of the other goods and services
 - Note: many different combinations of goods and services can be efficient

- One part of an efficient asset market is that the prices reflect the “correct” things
 - whatever economic theory would suggest
- Rational expectations
 - Expectations that are not predictably wrong given the information available to the person or firm
 - Expectations that are consistent with the relevant economic theory given the information available to the person or firm
 - Expectations that are consistent with the relevant economic theory including the costs and benefits of acquiring information
 - Comments
 - Rational expectations have nothing to do with “rationality” versus “irrationality”
 - Rational expectations can be quite inaccurate
 - Landfall of hurricanes 4 days in advance
 - Interest rate on 90-day Treasury bills tomorrow
- What does this imply for prices of assets?

- $$h_t = \frac{P_{t+1} + C_{t+1} - P_t}{P_t}$$
- Let a superscript “e” mean that the variable is the “expected” or “anticipated” value
 - P_{t+1}^e is the expected price at $t+1$
 - C_{t+1}^e is the expected cash payment at $t+1$
 - $$h_t^e = \frac{P_{t+1}^e + C_{t+1}^e - P_t}{P_t}$$
- Where does this expected value come from and why does it matter?
 - Any theory about portfolio choice concerns **expected returns**
 - Rational expectations — expected value is the one consistent with the relevant economic theory

- Related but not the same
 - Fundamentals theories of prices
 - Stock price is present value of “dividends” — payments to shareholders
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 - $$P_t^s = \sum_j \frac{D_{t+j}^e}{(1+r)^j}$$
 - “Bubbles” theories of prices
 - Castles in the air
 - Can be consistent with a thorough-going choice-based economic theory
 - Can also be consistent with a “greater fool” theory
 - What about failing to take advantage of profit opportunities?
 - For example, “people predictably over-react” to certain things

- Sometimes, fundamental theories are interpreted as implying that stock prices should be a random walk. Why?
 - Suppose that dividends are perfectly predictable
 - Suppose that expected holding-period returns are constant.
 - Then the difference between the actual holding-period return and the expected holding-period return is

$$- \quad h_t - h_t^e = \frac{P_{t+1} + C_{t+1} - P_t}{P_t} - \frac{P_{t+1}^e + C_{t+1} - P_t}{P_t} = \frac{P_{t+1} - P_{t+1}^e}{P_t}$$

- This is all the variation in the actual holding-period return since the expected holding-period return is constant
 - Variation in the holding-period return is unpredictable
 - Changes in prices are unpredictable
 - In short, a random walk

- No predictable changes in prices is not consistent with the data
 - Even including dividends and other payments

- Basic implication of idea
 - Current stock price for a firm reflects expectations that are consistent with operation of the firm and the market for stock
 - A minus 30 percent return must be unexpected (a surprise)
 - Implications for buying individual stocks and betting that other traders are wrong
 - Implications for personal trading
 - Recommended
 - *A Random Walk Down Wall Street* by Burton Malkiel
 - *Stocks for the Long Run* by Jeremy J. Siegel
 - Not recommended
 - *Seize the Day* by David Nassar