

The Stock Market

(Chapter 7 of Mishkin)

Computing the Price of Common Stock

- Basic Principle of Finance

Value of Investment = Present Value of Future Cash Flows

- One-Period Valuation Model

$$P_0 = \frac{Div_1}{(1 + k_e)} + \frac{P_1}{(1 + k_e)} \quad (1)$$

Generalized Dividend Valuation Model

$$P_0 = \frac{D_1}{(1+k_e)^1} + \frac{D_2}{(1+k_e)^2} + \dots + \frac{D_n}{(1+k_e)^n} + \frac{P_n}{(1+k_e)^n} \quad (2)$$

- If P_n is far in the future, it will not affect P_0

$$P_0 = \sum_{t=1}^{\infty} \frac{D_t}{(1+k_e)^t} \quad (3)$$

Gordon Growth Model

- Assuming dividend growth is constant, Equation 3 can be written as

$$P_0 = \frac{D_0 \times (1+g)^1}{(1+k_e)^1} + \frac{D_0 \times (1+g)^2}{(1+k_e)^2} + \dots + \frac{D_0 \times (1+g)^\infty}{(1+k_e)^\infty} \quad (4)$$

- Assuming the growth rate is less than the required return on equity, Equation 4 can be written as

$$P_0 = \frac{D_0 \times (1+g)}{(k_e - g)} = \frac{D_1}{(k_e - g)} \quad (5)$$

Why stock price so fluctuated? (1)

- What is the growth rate, g , of dividends from PTT stock?
- What is your expected return?
- With higher perceived risk on the growth rate, g , people require more expected return.
- The investor with the lowest perceived risk is willing to pay the most for the stock, and sets its price.

Why stock price so fluctuated? (2)

- When new information is released about firms (or, maybe, macroeconomic conditions), expectations change and prices change.
- New information may cause changes in expectations about the level of future dividends or the risk of those dividends.

Adaptive Expectation

- Expectations are formed from past experience only.
- Changes in expectations will occur slowly over time as data changes.
- However, people use more than just past data to form their expectations and sometimes change their expectations quickly.

Rational Expectation

Rational expectation (RE) = expectation will be identical to optimal forecast (the best guess of the future) using all available information

2 reasons expectation may not be rational

1. It takes too much effort to make the expectation the best guess possible
 2. They are unaware of some available information
- Rational expectation, although optimal prediction, may not be perfectly accurate
 - Rational expectations makes sense because it is costly not to have optimal forecast

An Example

- Consider the following table:

Year	t-2	t-1	t
GDP growth	4.2%	5.0%	5.4%

- What is your expectation for GDP growth in year $t+1$?

An Example (Cont.)

- Now, suppose we get additional information:

Year	t-2	t-1	t
GDP growth	4.2%	5.0%	5.4%

Period	6 months	
	t	t+1
Net exports	150,070	-12,051

- What is your expectation for GDP growth in year t+1, this time?
- Is it the same as before? Why?

Rational Expectations Theory

What is the 'Rational Expectations Theory'?

The rational expectations theory is an economic concept whereby people make choices based on their rational outlook, available information and past experiences. The theory suggests that the current expectations in an economy are equivalent to what people think the future state of the economy will become. This contrasts with the idea that government policy influences people's decisions.

Next Up

[RATIONAL CHOICE THEORY](#)[RATIONING](#)[RATIONAL BEHAVIOR](#)[ACCOUNTING THEORY](#)

BREAKING DOWN 'Rational Expectations Theory'

The rational expectations theory is often used to explain expected rates of [inflation](#). For example, if

Article [Talk](#)

[Read](#)

[Edit](#)

[View history](#)



Wiki Loves Monuments: Photograph a monument, help Wikipedia and win!

Rational expectations

From Wikipedia, the free encyclopedia

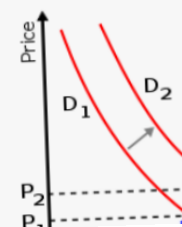
For other uses, see [Rational](#).



This article includes a [list of references](#), but **its sources remain unclear** because it has **insufficient inline citations**. Please help to [improve](#) this article by [introducing](#) more precise citations. *(November 2014)*
([Learn how and when to remove this template message](#))

In [economics](#), "**rational expectations**" are **model-consistent expectations**, in that agents inside the model are assumed to "know the model" and on average take the model's predictions as valid.^[1] Rational expectations ensure internal consistency in models involving uncertainty. To obtain consistency within a model, the predictions of future values of economically relevant variables from the model are assumed to be the same as that of the decision-makers in the model, given their information set, the nature of the random processes involved, and model structure. The rational expectations assumption is used especially in many contemporary [macroeconomic models](#).

Part of a
Econ



Formal Statement of RE

$$X^e = X^{of}$$

X^e = expectation of the variable that is being forecast

X^{of} = optimal forecast using all available information

Implications of RE

- If there is a change in the way a variable moves, the way in which expectations of the variable are formed will change as well
 - Changes in the conduct of monetary policy (e.g. inflation targeting)
- The forecast errors of expectations will, on average, be zero and cannot be predicted ahead of time.

Efficient Markets Hypothesis (1)

- This is just an application of rational expectations to the pricing of securities
- Prices of securities in financial markets fully reflect all available information
- Recall that the rate of return from holding a security is:

$$RET = \frac{P_{t+1} - P_t + C}{P_t}$$

Efficient Markets Hypothesis (2)

- At the beginning of the period, we know P_t and C
- P_{t+1} is unknown and we must form an expectation of it
- The expected return then is

$$R^e = \frac{P_{t+1}^e - P_t + C}{P_t}$$

- Expectations of future prices are equal to optimal forecasts using all currently available information so

$$P_{t+1}^e = P_{t+1}^{of} \Rightarrow R^e = R^{of}$$

Efficient Markets Hypothesis (3)

- Supply and Demand analysis states R^e will equal the equilibrium return R^* , so $R^{of} = R^*$

“Current prices in financial market will be set so that the optimal forecast of return (using all available information) equals the equilibrium return.”

In an efficient market, a security's price fully reflects all available information

Efficient Markets Hypothesis (4)

Why the Efficient Markets Hypothesis makes sense?

Arbitrageurs eliminate unexploited profit opportunities

If $R^{of} > R^* \Rightarrow P_t \uparrow, R^{of} \downarrow$

If $R^{of} < R^* \Rightarrow P_t \downarrow, R^{of} \uparrow$

until $R^{of} = R^*$

1. All unexploited profit opportunities eliminated
2. Efficient Market holds even if there are uninformed, irrational participants in the market

Evidence on EM Hypothesis (1)

Favorable Evidence

1. Investment analysts and mutual funds don't beat the market
2. Stock prices reflect publicly available information: anticipated announcements don't affect stock price
3. Stock prices and exchange rates close to random walk
4. Technical analysis does not outperform market

Evidence on EM Hypothesis (2)

Unfavorable Evidence

1. Small-firm effect: small firms have abnormally high returns
2. Market overreaction
3. Excessive volatility
4. New information is not always immediately incorporated into stock prices

Implications for Investing

1. Published reports of financial analysts not very valuable
2. Should be skeptical of hot tips
3. Stock prices may fall on good news
4. Prescription for investor
 1. Shouldn't try to outguess market
 2. Therefore, buy and hold
 3. Diversify with no-load mutual fund