Mini-case 4: Adaptive Expectations, Rational Expectations, Optimal Forecast, January Effect

CONCEPTS IN THIS CASE

adaptive expectations
rational expectations
optimal forecast
unexploited profit opportunity
random walk
January effect
mean reversion

You have been identified as someone in your firm who can make impressive presentations. This ability has grown over time. Although you were not pleased with this requirement in school, you are now convinced that this classroom experience will lead you quickly to higher positions in your company.

The presentation you have been asked to produce is about the general theory of how capital markets work. To explain how capital markets work, you have decided to provide definitions and practical examples of the concepts of adaptive expectations, rational expectations, optimal forecast, random walk, and mean reversion.

After gathering the information you need, you decide to use an example to make your points, assuming that the historical inflation rate has ranged between 4% and 6%, the average inflation rate has been 5%, and the inflation rate is 1% higher than the average when the unemployment rate is 4.5% or below.

1. Given that the unemployment rate dropped recently to 4.0%,
   a. What is the adaptive expectation of inflation?
   b. What is the rational expectation of inflation?
2. What does rational expectations theory state about forecast errors of expectations?
3. How does rational expectations theory relate to efficient markets theory?
4. If the current price of an asset is $100, the cash payment to be received is $5, and you expect the price to increase to $103 in one year,
   a. What is the expectation of return at the beginning of this investment?
   b. How does the forecast of the future price relate to the optimal forecast in the theory of rational expectations?
5. What is the "equilibrium" return of a security?
6. What is the relationship between the current prices in a financial market and the security's equilibrium return?
7. How does the market react to unexploited profits in an efficient market?
8. If an investment adviser has performed well in the past, what does this indicate about the future?
9. If stock prices follow a "random walk," what does this indicate about the predictability of future stock prices?
10. What is the performance record of "technical analysts" relative to the overall market?
11. What evidence exists against the theory of market efficiency with respect to
    a. The small-firm effect?
    b. The January effect?
    c. Market overreaction?
    d. Excessive volatility?
    e. Mean reversion?

12. Explain why foreign exchange rates should or should not follow a random walk.