APPLIED ECONOMICS FOR MANAGERS SESSION 14—

I. REVIEW: UNCERTAINTY, EXPECTED UTILITY & RISK AVERSION

   A. THE EXPECTED UTILITY HYPOTHESIS

      1. INDIVIDUALS MAXIMIZE EXPECTED UTILITY:

      2. $V = E(U) = p_1U(X_1) + p_2U(X_2) + p_3U(X_3) + \ldots + p_NU(X_N)$

   B. U(X) CONCAVE—FALLING MARGINAL UTILITY OF WEALTH

   C. CONCAVITY IMPLIES RISK AVERSION

II. UNCERTAINTY AND THE CAPITAL ASSET PRICING MODEL

   A. ROUGH INTERPRETATION OF RISK AVERSION:

      1. PEOPLE LIKE HIGH EXPECTED RETURNS

      2. PEOPLE DISLIKE VARIANCE (σ^2) OF WEALTH

      3. RISKIER ASSETS WHOSE RETURNS HAVE MORE VARIANCE SHOULD PAY A HIGHER RETURN

   B. RELEVANT MEASURE OF ASSET VARIANCE IS ITS CONTRIBUTION TO VARIANCE OF A WELL-DIVERSIFIED PORTFOLIO—MEASURED BY ASSET β

   C. CONSIDER THE MODEL: $R_A = \text{CONSTANT} + \beta_A R_M + \varepsilon_A$

      1. IT IMPLIES THAT $\sigma_A^2 = \beta_A^2 \sigma_M^2 + \sigma_\varepsilon^2$

      2. VARIANCE OF ASSET A'S RETURNS HAS TWO PARTS

         a. THE PART THAT IS DUE TO ITS COMOVEMENT WITH RETURNS ON ALL ASSETS IN GENERAL (SYSTEMATIC)

         b. THE PART SPECIFIC TO ASSET A (IDIOSYNCRATIC)

      3.   RECALL: WE MEASURE RISK IN STANDARD DEVIATION UNITS AND 1 UNIT OF RISK IS σ_M. FOR ASSET A, AMOUNT OF SYSTEMATIC RISK IN STANDARE DEVIATION UNITS IS $\beta_A\sigma_M$. SO, ASSET A IS β_A UNITS OF SYSTEMATIC RISK

      3. GIVEN PRICE OF RISK, $[\overline{R}_M - R_F]$, ASSET A'S PRICE MUST BE SUCH THAT ITS EXPECTED RETURN SATISFIES:

         $E(R_A) = R_F + \beta_A[\overline{R}_M - R_F]$

4. LESSONS:

    a. PAYS TO DIVERSIFY AND AVOID UNECESSARY RISK (DO NOT GET RETURN FOR TAKING UNNECESSARY RISK)

    b. WHAT DOES IT MEAN TO BEAT THE MARKET?

III. INFORMATIONAL EFFICIENCY AND SHARE PRICES

A. EFFICIENCY CONDITION—NO SURPLUS AT THE MARGIN

  1. ANOTHER WAY TO SAY THIS IS NO EASY PROFIT

  2. ABSENCE OF LARGE PROFIT OPPORTUNITIES (AT THE MARGIN)

B. PRICES ARE EFFICIENT SIGNALS ONLY IF THEY REFLECT INFORMATION. WHAT DOES THIS MEAN FOR ASSET MARKETS?

  1. PRICES REFLECT AVAILABLE INFORMATION

  2. FORECAST OF P_{t+1} MADE USING ALL INFORMATION AVAILABE AT TIME t—PRICE TODAY BASED ON FORECAST OF PRICE IN THE FUTURE

  3. SO PRICE AT TIME t, I.E., P_t, REFLECTS ALL INFORMATION AVAILABLE AT TIME t, TOO

C. FORECAST ERRORS MUST REFLECT INFORMATION THAT *ONLY* BECOMES AVAILABLE AT TIME t+1, I.E., REAL NEWS

  1. PARTY TIME!

  2. $P_{t+1} - P_{t+1}^e = \varepsilon_{t+1}$: ERORR IS RANDOM & INDEPENDEN^{e}T OF P_{t+1}

  3. SINCE F_{t+1}^e REFLECTS SAME INFORMATION AS P_t THE TWO SHOULD BE CLOSELY RELATED, E.G.,

$P_{t+1}^e \approx P_t \Rightarrow P_{t+1} = P_t + \varepsilon_{t+1} \Rightarrow P_{t+1} - P_t = \varepsilon_{t+1}$ (PURE RANDOM WALK)

OR

$P_{t+1} = (1+\delta)P_t \Rightarrow p_{t+1} = \delta + p_t + \varepsilon_{t+1}$ (RANDOM WALK WITH DRIFT)

WHERE: $p_t = \ln P_t$

4. MINIMUM OR WEAK EFFICIENCY & TECHNICAL ANALYSIS—STOCK PRICES HAVE NO MEMORY—CAN'T INFER FUTURE FROM PAST PRICE MOVEMENTS

D. MARKET EFFICIENCY AND INFORMATION PRODUCTION

1. THE CONUNDRUM OF INFORMATIONAL EFFICIENCY

2. INFORMATION AS A PUBLIC GOOD

3. ECONOMIZE ON INFORMATIONAL COSTS—CASCADES

IV. ASYMMETRIC INFORMATION

A. ANOTHER PAPER CLIP MARKET

B. INFORMATIONAL ASYMMETRIES AND:

1. ADVERSE SELECTION

2. MORAL HAZARD