LECTURE 1: Investing & Investments

I. STUDENT LEARNING OBJECTIVES
   A. Why do people invest?
   B. Importance of investment decisions
   C. Steps to investing
   D. Investment management

II. Why do people invest?
   A. Defer current consumption to increase future consumption or wealth
   B. Accumulate funds for a purpose
   C. Benefits to society and the economy
      1. Capital formation
      2. Job creation
      3. Economic expansion

III. Importance of investment decisions
   A. More choices now than ever
      1. Thousands of mutual funds (> 5000)
      2. Funds for specific investment goals
   B. People live longer
      1. Longer retirement period
      2. Social Security may not be enough
   C. Personal income growth is slower
   D. Labor market is less stable

IV. Steps to investing: Personal Financial Planning
   A. Personal inventory:
      1. Assets minus Liabilities = Net Worth
   B. Investment goals:
      1. Purpose and time frame
   C. Insurance review
      1. Life, health, disability, property, and liability
   D. Establish emergency fund
E. Establishing priorities
   1. Holding period - how long to invest
      a. Short-term volatility
      b. Long-term stability
   2. Expected return to achieve goals
      a. Trade-off between risk and return
   3. Risk tolerance - danger of possible loss
      a. “I’m not so worried about the return on my money as I am the return of my money.” - Will Rogers

F. Other considerations
   1. Tax status
      a. Marginal tax rate
      b. Tax deferred investments
   2. Preference for income or capital gains
      a. Personal goals
      b. Tax preferences
   3. Personal time in managing investments
      a. Availability and desire
   4. Investment selection
      a. Portfolio mix - general guidelines
         (1) Stocks, bonds, money markets, or some combination
      b. Specific selections
         (1) Passive investor - market index funds
         (2) Active investor - seeks superior performance

G. Investment management
   1. Monitor performance
      a. Active portfolio management
      b. Buy and hold management
   2. Making adjustments through life stages
      a. Changes in risk tolerance
      b. Changes in investment goals
LECTURE 2: Fundamentals of Risk and Return

I. RISK AND RETURN: MEASURING RETURNS

A. Holding Period Return
   1. Measure total return: include income and price changes over a specified period of time

B. Annualizing Holding Period Returns
   1. \((1 + \text{HPR}_j, t)^m - 1\)

C. Expected versus Actual Returns

D. Risk and return: Measuring average returns
   1. Average HPR of many individual periods
      a. Arithmetic mean - simple average
   2. Average HPR of many individual periods
      a. Geometric mean - average compound rate

E. What is risk?
   1. Uncertainty - the possibility that the actual return may differ from the expected return
   2. Probability - the chance of something occurring
   3. Expected Returns - the sum of possible returns times the probability of each return

F. Measuring risk
   1. Range: the difference between the highest and lowest values.

G. Required rate of return
   1. Nominal rate of return = Real rate of return + Expected rate of inflation + Default premium
   2. Time value of money
   3. Related to Riskiness of investment

H. Relationship between risk and return
   1. Higher returns with higher risk
   2. Risk aversion - incentives to accept risk

II. INVESTMENT TRUISMS

A. Diversification
   1. Risk reduction by diversifying investments
   2. Coefficient of variation measures return for risk: \(\text{SD} / \text{Mean}\)
   3. Individual returns are not perfectly correlated
LECTURE 3: Direct Investment Alternatives

I. Student Learning Objectives
   A. Direct Investment Classes
   B. Indirect Investments
   C. Investment performance

II. Direct Investment Classes
   A. Nonmarketable Financial Claims
      1. Bank deposits including Credit Unions
      2. U.S. savings bonds
      3. Cash value of [whole] life insurance policies
   B. Marketable Financial Claims
      1. Money market instruments
      2. Capital market instruments
      3. Derivative securities

III. Marketable Financial Claims
   A. Money market instruments (maturity < 1 yr)
      1. Treasury bills (T-bills)
      2. Commercial paper
      3. Banker’s acceptances
      4. Negotiable CD’s (Certificates of Deposit)
      5. Repurchase agreements
      6. Foreign short-term securities
      7. Money market instruments
         a. Mature in less than one year
         b. Very similar in nature
         c. High quality
         d. Large denominations
         e. Discount securities
         f. No stated interest rate
         g. Sold at a discount from stated value
B. Short-term Treasuries
   1. T-bill  $10,000 minimum face account
      a. Three month, six month, and one year maturities
      b. Backed by “full faith and credit” of US Govt.
      c. Discount securities - no stated interest rate

C. Federal agency securities
   1. $10,000 minimum face
   2. Not backed by “full faith and credit”
   3. Discount securities - no stated interest rate

D. Commercial paper
   1. Issued by most creditworthy corporations
   2. Mature in less than one year
   3. Large denominations - $100,000 +
   4. Sold directly or through dealers
   5. Pure Discount securities

E. Banker’s Acceptances
   1. Issued by corporation
   2. Backed by bank (bank accepts responsibility to pay off all parties…)
   3. Facilitates trade
   4. Manufacturer gets paid upon shipment
   5. Retailer pays after selling merchandise

F. Negotiable CDs
   1. Not federally insured
   2. Over $100,000 face
   3. May be sold before maturity

G. Repurchase agreements (repos)
   1. Loans with government securities as collateral
   2. Pure Discount securities

H. Taxable equivalent yield
   1. Compares after tax yield of exempt to non-exempt investments
      \[
      \text{TEY} = \frac{\text{yield}}{1-T}
      \]
      where T is investor’s marginal tax rate
2. Example: 6% tax-exempt yield and 40% marginal tax rate
   \[ TEY = \frac{.06}{1 - .4} = .10 \]
3. 6% tax-exempt = 10% taxable

IV. Capital market instruments (long maturities)
   A. Common stocks
   B. Preferred stocks
   C. Bonds
   D. Treasuries
   E. Federal agencies
   F. Municipals
   G. Corporate
   H. Foreign
   I. Mortgage pass throughs
   J. Capital market instruments
      1. Maturity longer than one year
      2. Issued by governments and corporations
      3. Very diverse instruments
         a. Fixed-income securities (bonds)
         b. Common stocks
         c. Derivative securities

V. Fixed-income securities (bonds)
   A. Coupon rate: Regular interest payments at fixed rates
   B. Call provisions: The right to buy back bond before maturity
   C. Treasury bonds and notes
   D. Federal agency securities
   E. Municipal securities
   F. Municipal Bonds
      1. General obligation bond: Backed by the government that issues the bond
      2. Revenue bond: Financed by revenue producing projects
      3. Serial bond: Staggered maturity dates
      4. Term bond: All bonds mature on the same date
      5. Bond rating: assessment by independent bond rating agency
   G. Corporate Debt
      1. Mortgage bond: Secured by collateral
2. Debenture: Unsecured bond
3. Income bond: Corporate equivalent of a revenue bond.

H. Mortgage pass-through securities
1. Securitization of mortgages
   a. Federal National Mortgage Association (Fannie Mae)
   b. Government National Mortgage Association (Ginnie Mae)
   c. Federal Home Lone Mortgage Corporation (Freddie Mac)
2. Mortgages are insured against default

I. Foreign bonds
1. Yankee bonds: Foreign bonds issued in the United States
2. Bulldog bonds: Foreign bonds issued in the United Kingdom
3. Eurobonds: Dollar-denominated bonds issued outside the United States

J. Euroyen bonds: Issued in yen, but outside Japan

VI. Marketable Equity claims
A. Preferred stock
1. Hybrid security
   a. Characteristics of common stock (equity) and bonds (fixed payout)
   b. Represents equity ownership
   c. Yields fixed rates

B. Common stock
1. Ownership of the corporation
2. Residual claim on assets
3. Limited liability
4. Potential for capital appreciation
5. Blue chip: Most consistently profitable companies
6. Voting rights
   a. Elect directors and vote on important company matters
   b. Making changes to corporate charter
7. Preemptive rights: Rights to retain a proportionate ownership in a company
VII. Marketable Financial Claims

A. Derivative securities
   1. Claims on financial claims - derived claim
   2. Stock options
      a. Calls
      b. Puts
   3. Futures

B. Corporate created
   1. Convertibles
   2. Warrants

VIII. Real Assets

A. Precious metals: gold, silver, platinum
B. Gems: diamonds, emeralds, rubies
C. Collectibles: fine art, antiques, baseball cards
D. Real estate
   1. Owner occupied or investment property
   2. Real Estate Investment Trusts (REIT)

IX. Indirect Investment

A. Indirect investing involves selection or placement by a second party
B. Open-end Mutual funds
   1. With/without loads
   2. Net asset value \( \approx \) price or value
   3. Issuer redeems at NAV
   4. Continually issue and redeem shares
   5. Managed portfolio
C. Closed-end funds
   1. Fixed number of shares trading like stocks
   2. Issuer does not offer redemption services
   3. Managed portfolio
D. Unit investment trusts
   1. Fixed number of shares
   2. Hold set portfolio
E. Mutual funds
1. Rapid growth in recent years
2. Increase in assets & number of funds
3. Many categories of funds
4. Load and no-load funds
5. Sales charges
6. Compare total fund expenses
7. Measured by Net Asset Value (NAV)
8. Value of mutual fund assets minus liabilities divided by number of outstanding shares

X. Foreign stocks

A. American Depository Receipt (ADR)
   1. Denominated in US dollars
   2. Trade on US stock exchanges
   3. Receipt for shares held in US bank
   4. Value based on underlying shares

B. International mutual funds

C. Buy direct on foreign stock exchanges

XI. Derivative securities

A. Stock options
   1. Value derived from value of underlying asset
   2. Put - option to sell
   3. Call - option to buy

B. Hedge - option used to reduce risk of stock position

C. Corporate created derivative securities
   1. Convertibles - option to convert (bonds or preferred stock) for common stock
   2. Warrants - call option issued by companies

D. Futures contracts
   1. Contract to deliver an asset in the future at a price agreed to today
   2. Party that sells or agrees to deliver is “short”
   3. Party that buys or agrees to accept delivery is “long”
   4. Hedgers - owns or needs to buy the commodity
   5. Speculators - trade only for potential profit
XII. Historic Performance (aggregate returns)

A. Stocks, bonds, and T-bills
   1. Stocks outperformed bonds
   2. Small-firm stocks outperformed large-firms (small market value)
   3. Bonds outperformed T-bills
   4. T-bills barely outperformed inflation

B. Domestic and international stocks
   1. Some holding periods outperform domestic stocks
   2. Europe, Australia, and Far East
   3. Emerging markets

C. Paper assets versus real assets
   1. In recent years stocks and bonds returns have outperformed investments in precious metals and single family dwellings
   2. During the 1970s with strong inflationary pressures, real assets outperformed stocks and bonds
LECTURE 4: Mutual Funds

I. STUDENT LEARNING OBJECTIVES
   A. What are mutual funds?
   B. Selecting a mutual fund
   C. Managing mutual fund investments
   D. Alternatives to mutual funds

II. UNDERSTANDING MUTUAL FUNDS
   A. Mutual funds pool funds from many investors to buy securities
   B. Mutual funds have grown in importance
   C. Open-end investment companies, or mutual funds, continually issue and redeem shares
   D. Net asset value (NAV) of a fund is the market value of the fund’s assets less any liabilities, divided by the number of shares outstanding at that time

III. ADVANTAGES OF MUTUAL FUNDS
   A. Diversification
   B. Smaller minimum investments to access large diversified portfolio
   C. Professional management

IV. REGULATIONS AND TAXATION
   A. Mutual Fund Act of 1940 regulates U. S. fund operations through the SEC
   B. State approval is also required for sales
   C. Most funds are taxed as regulated investment companies, which requires all investment income be distributed to shareholders each year and all tax liability falls to individual shareholders

V. GROWTH AND DEVELOPMENT OF MUTUAL FUNDS
   A. Massachusetts Investment Trust in 1924
   B. Growth accelerated after World War II
   C. Funds grew in number and type in the 1970’s
   D. 1980’s saw extraordinary growth
   E. Mutual funds in other countries have also grown rapidly in recent years
VI. TYPES OF FUNDS
   A. Overall investment objectives
      1. Growth, Income, Growth & Income, etc.
   B. Types of securities purchased
      1. Equity funds, money market funds, bonds
   C. Load funds versus no-load funds
      1. Load charges are assessed when shares are purchased (front-end) or sold (back-end)

VII. SERVICES OFFERED BY MUTUAL FUNDS
   A. Automatic reinvestment of distributions
   B. Automatic investment plans
   C. Check writing (money market funds)
   D. Exchange privileges within fund families
   E. Periodic statements

VIII. SELECTING AND EVALUATING MUTUAL FUNDS
   A. Thousands of funds to select from
   B. Set goals
   C. Assess risk and returns before selecting
   D. Evaluate services offered by the fund
   E. Examine fees and expenses
      1. Load charges and operating expenses
   F. Load charges
      1. Contingent deferred sales charge (CDSC) is a back-end load that declines over time
      2. Back-end loads discourage trading by investors
      3. Front-end loads compensate the broker
      4. No-load funds have grown
   G. Operating expenses
      1. Measured as percent of NAV
      2. Management or advisory fees and other operating expenses
      3. Paid out of investment income
      4. 12b -1 fees cover distribution costs
   H. Compare loads and operating expenses for varying time periods in evaluating funds
   I. No evidence that higher fees or load charges bring superior performance

IX. EVALUATING HISTORICAL PERFORMANCE
A. Performance is important criteria
B. Consider risk and return using standard deviation and beta to measure risk
C. Absolute performance
D. Relative performance to a benchmark such as S&P 500 or average return of mutual fund group
E. Consistency of performance over time
F. Assessing future performance
   1. Past performance is a poor predictor since funds do not over the long term post better risk-adjusted performance than the broad market averages
   2. Others feel that past performance is a reasonable, though imperfect, predictor because past performance reflects more than mere luck
G. Performance and taxes
   1. Mutual funds are not taxed directly on income or capital gains as these are passed on to the shareholders
   2. Returns can be broken down into distributions and change in NAV
   3. Portfolio turnover relates to higher capital gains distributions and unrealized capital gains
   4. Don’t purchase just before a distribution

X. MANAGING MUTUAL FUND INVESTMENTS
   A. Passive versus active
   B. Investment objectives change through time
   C. Dollar-cost averaging is investing equal dollar amounts at regular intervals and can be beneficial when prices fluctuate but if prices continually rise, buying more earlier is better
   D. Rebalancing means adjusting a portfolio return to its target asset allocation

XI. SELLING A MUTUAL FUND
   A. Changes in investment objectives
   B. Poor performance - but have a long-term perspective
   C. Funds that have grown too much too fast

XII. OTHER TYPES OF INVESTMENT COMPANIES
   A. Unit investment trust is an unmanaged portfolio of fixed income securities
      1. Sponsor will usually buy and sell at NAV
   B. Closed-end investment company offers managed portfolios.
      1. Market prices may vary from NAV and generally sell at discounts
   C. Dual purpose funds are closed-end funds with income shares and capital shares, and a predetermined life span
LECTURE 5: Organization of Financial Markets

I. Student Learning Objectives
   A. Characteristics of Financial Markets
   B. Perfect and Complete Markets
   C. Efficient Markets
   D. Primary Financial Markets
   E. Secondary Financial Markets

II. Characteristics of Financial Markets
   A. Fair, open, and orderly trading
   B. [Instant] Liquidity
   C. Trading information readily available
   D. Price continuity
   E. Low transaction costs
   F. Regulatory oversight

III. Perfect and Complete Markets
   A. Perfect market - frictionless trading
      1. No transaction costs
      2. No taxes
      3. No constraining regulations
   B. Complete Markets
      1. All types, sizes, and maturities available
      2. Infinitely divisible securities

IV. Efficient Markets
   A. Efficient Markets Hypothesis (EMH)
      1. Prices reflect all relevant information
      2. New information disclosed to all at once
      3. Prices adjust quickly to new information
      4. Impossible to earn abnormal returns
B. Testing of the EMH
   1. Weak Form Efficiency (using historical data)
   2. Semi-Strong Form Efficiency (new information)
   3. Strong Form Efficiency (insider information)

V. Primary Financial Markets
   A. Investors buy new issues directly
      1. At preset (offering) prices
      2. By sealed bid (treasuries)
   B. Investment Bankers
      1. Financial intermediaries who get providers and demanders of capital together (for a fee)
      2. Help in pricing and issuing new securities
      3. Bear risk of selling new securities
      4. Distributes issue to the public
   C. Investment Banking Functions
      1. Advising
         a. Timing
         b. Pricing
         c. Terms and Features
      2. Underwriting
         a. Full
         b. Best Efforts
      3. Distribution
         a. Selling syndicate
   D. Investment Banking
      1. Initial Public Offerings (IPOs)
         a. The first sale of common stock to the public
      2. Private Placements
      3. Private sale of securities directly to investors (Lettered stock)
         a. Reduced liquidity - no secondary market
         b. Secondary registration required to sell to public
         c. Avoids underwriting discount (concession)
         d. Avoids registration costs with SEC
VI. Secondary Financial Markets

A. Trade seasoned securities
   1. Provide liquidity
   2. Cost of liquidity services = bid-ask spread
   3. Bid: the price # will pay to buy security
   4. Ask: the price # will take to sell security
   5. # = Market maker, Specialist, another trader

B. Spread size a function of risk and activity

C. Provide current price information

VII. Types of Secondary Markets

A. Registered Exchanges
   1. NYSE, AMEX, Regional exchanges
   2. Trading by [open] auction or electronic

B. Foreign Exchanges (Tokyo, London, Toronto)

C. Over-the-Counter (OTC) markets
   1. NASDAQ is primary player
   2. Liquidity services more costly
   3. Trading by computer (versus auction)
   4. Most bonds traded OTC (Corps, Govs, Muni's)

D. New York Stock Exchange (NYSE): The “Big Board”
   1. Stocks must meet listing requirements
   2. Auction market
   3. Only members can trade on the floor
   4. Must own a “seat” to be a member (1366)
   5. 42 specialists act as market makers
   6. Many seats owned by brokerage houses*
   7. More than 3000 issues actively traded + bonds

E. American Stock Exchange (AMEX)
   1. Less stringent listing requirements
   2. Smaller issues, Lower volumes
   3. Less than 1000 issues actively traded.
   4. Recently acquired by Nasdaq
F. Regional Exchanges
   1. Five Major Regional Exchanges
   2. Boston, Philadelphia, Cincinnati (NMS), Midwest, Pacific
   3. Dual listing (regional & national exchanges)
   4. Typically lower transaction costs than OTC
   5. Different trading hours than NYSE, AMEX

G. The NASDAQ Stock Market
   1. National Association of Securities Dealers Automated Quotation system
   2. Computer based system to serve OTC market for stocks
   3. Gathers market makers together
   4. Must have at least two market makers
   5. Provides better pricing information
   6. Less restrictive listing requirements

H. NYSE versus NASDAQ
   1. Spreads generally smaller on NYSE
   2. Limit orders posted publicly on NYSE
   3. NASDAQ market makers support stock
   4. Highest volume stocks on NASDAQ
   5. Small stocks handled better by NASDAQ
   6. Getting off NYSE requires shareholder vote

VIII. Other Markets
   A. Third market
      1. Over the counter trading of NYSE and AMEX listed stocks to overcome high costs of NYSE and AMEX transactions (1970’s)

   B. Fourth Market
      1. Private trading of listed stocks between institutions via ECN

   C. Major Foreign Markets
      1. Paris, German, Zurich, Toronto, Australia

   D. Emerging Markets
      1. Brazil, Chile, China, Malaysia, Russia, Turkey
Lecture 6: Investor Participation

I. Learning Objectives
   A. Market Trading Dynamics
   B. Regulation of Financial Markets

II. Market Trading Dynamics
   A. Full service brokerage firm
      1. Assigned broker - personalized service
      2. Gives investment advice (research reports)
      3. Executes orders
   B. Discount broker
      1. Executes orders
      2. Lower commissions
      3. Some advise (research reports)
   C. Brokerage Accounts
      1. Cash account
         a. Pay full cost of all securities purchased
         b. 3 day settlement
      2. Margin account
         a. Finance portion of purchases (interest charges)
         b. Same day settlement
      3. Securities Investor Protection Corporation SIPC
         a. Insures brokerage accounts up to $500,000
         b. Does not cover market losses
   D. Market Order
      1. Buy or sell at the best current price
      2. Settlement within three days
   E. Limit Order
      1. Puts a limit on price
      2. Time period can vary: day, GTC
F. Stop Order
   1. Becomes order if price reaches specified price
   2. No guarantee of execution at specified price

G. Margin Accounts
   1. Minimum required margin is 50% (equity)
   2. Balance of purchase price loaned by broker
   3. Margin % Regulated by Federal Reserve
   4. Maintenance margin is lower
   5. Allows for some price fluctuation
   6. Margin call when equity drops below 30%
   7. Additional deposit required to meet margin requirements
   8. Margin trading has greater risk of loss and greater potential for profitability (ROI).

H. Long Position
   1. Expectation - market heading higher
   2. Purchase stock via market order at the Ask
   3. Purchase stock via limit order at specified price

I. Selling Short
   1. Expectation - market heading lower
   2. Stock borrowed from broker
   3. Profits on drop in prices
   4. NYSE - short sale can only be on an uptick

J. Block trade
   1. Purchase or sale of 10,000+ shares
   2. NYSE Allows block trades away from floor

K. Program trading
   1. Computer generated buy/sell decisions
   2. Quick reaction to mispricing or momentum
   3. Index arbitrage most popular motivation
   4. may exaggerate market moves
   5. may trade ahead of small orders
III. Regulation of Financial Markets

A. Securities Act of 1933
   1. Registration of securities
   2. Prospectus required - full and fair disclosure

B. Securities Act of 1934
   1. Securities and Exchange Commission (SEC)
   2. Insider trading prohibited
   3. Reporting requirements - form 10-K

C. State regulations
   1. Blue sky laws - vary by state

D. Regulation in other countries
   1. Many follow U.S. model
   2. Canadian is provincial rather than national
   3. Japan regulated by the Ministry of Finance
   4. Germany does not separate banking and securities industries (no Glass-Steagall)

E. SEC Oversight / Self-Regulation
   1. SEC - EDGAR System
   2. National Association of Securities Dealers (NASD): Rules of conduct
   3. NYSE: Market surveillance - Audit trail
   4. NASDAQ: Recent reforms following SEC investigation
LECTURE 7: Market Efficiency: Concept and Reality

I. Student Learning Objectives

A. What is the Efficient Markets Hypothesis? (EMH)
B. What are the implications of the EMH?
C. Are there different forms of the EMH?
D. How do we test for efficient markets?
E. What is the evidence for and against the EMH

II. Efficient Market Hypothesis (EMH)

A. Prices fully reflect all available information
B. Prices adjust quickly to new information
C. Implications of the EMH
   1. Information cannot be used to earn abnormal returns
   2. Short-term price movements cannot be predicted - a random walk
      a. Time series in which each change is independent from previous value
      b. Random series may appear to have patterns
      c. Use of runs test for randomness
   3. Technical analysis is of no value even under weak-form EMH which requires that either the patterns are mere illusions, or other investors would also recognize any patterns
   4. Fundamental analysis is only of value if one has superior forecasting skills and can act before the market can react to new public information
   5. Active portfolio management probably cannot outperform passive portfolio management
   6. Portfolio selection will depend upon risk preferences, age, income, etc….

III. Sources of Market Efficiency

A. Competition for “best” investments
B. Large number of investors
C. Ongoing research and market analysis keeps prices moving toward intrinsic values

IV. Forms of EMH

A. Weak-form market efficiency
   1. Current prices reflect all historical information
B. Semi-strong-form market efficiency
   1. Prices fully reflect all public information
C. Strong-form market efficiency
   1. Prices fully reflect all public and private information

D. Strong-form Market Efficiency and Insider Trading
   1. Even insiders cannot use private information to earn abnormal profits.
   2. Moreover - Prohibited by law (1934 Act)
   3. Insiders monitored by SEC and financial markets

V. Testing Market Efficiency
   A. Types of tests
      1. Historical (ex post)
      2. Ex ante
   B. Establish a benchmark (market portfolio)
   C. Length and selection of time periods affects results (artifacts).
   D. All tests are subject to criticism.
   E. Roll’s Critique: knowledge of true market portfolio does not exist.
   F. Qualitative versus quantitative efficiency
   G. How efficient are the markets?
   H. Problem of market irrationality

VI. Traditional Tests of the E M H
   A. Usefulness of historical prices
      1. Random nature of security prices and returns
      2. Trading rules
      3. subjective
      4. objective
   B. Market reaction to new public information
      1. Market may react before the announcement
      2. Expectations - inside information -?
      3. Market may delay in reacting to announcement

VII. Anomalies Evidence Against Market Efficiency
   A. Calendar anomalies
      1. January effect
      2. Weekend effect
B. Small-firm effect
   1. Stocks of small firms outperform large companies
   2. Risk measure may not be adequate
   3. Institutional investors overlook small firms
C. Performance of Investment Professionals
   1. Value Line rankings
   2. Fund Manager performance

VIII. Are Markets Efficient?
A. Some Evidence supports the EMH
   1. Cannot cover transaction expenses
   2. Timing models inter-temporally unstable
B. More Evidence contradicts the EMH
   1. Serial properties of economic data
   2. Improvements in data mining
   3. Better analytical techniques