Lecture 8: Equity Portfolio Management Strategies

Today's Questions

- What are two generic equity portfolio management styles?
- What techniques can be used to construct passive index portfolios?
- What is a portfolio's tracking error?
- What are the 3 types of portfolio adjustment that active portfolio managers use?
- What are value-oriented & growth oriented investment styles?
- What are strategic & tactical approaches to asset allocation?

Passive Vs Active Management

- Total Portfolio Return
  - The total actual return on any equity portfolio can be decomposed into: – Expected return
    – Alpha
  - The Equation

    Total Actual Return = [Expected Return] + ["Alpha"]

    = [Risk-Free Rate + Risk Premium] + ["Alpha"]

- Passive equity portfolio management
  - Long-term buy-&-hold strategy
  - Usually tracks an index over time
  - Designed to mach market performance
  - Managers are judged on how well they track the target index
- Active equity portfolio management
  - Attempts to outperform a passive benchmark portfolio
  - on a risk-adjusted basis by seeking a positive "alpha" value

An Overview of Passive Strategies

- Attempt to replicate the performance of an index.
  - may slightly underperform the target index due to fees & commissions
- Strong rationale for this approach
  - Costs of active management (1 to 2 percent)
  - are hard to overcome in risk-adjusted performance.
- Many different market indexes are used for tracking portfolios
  - S&P 500 Index
  - NASDAQ Composite Index

Index Portfolio Construction Techniques: Full Replication

- Full Replication
  - All securities in the index are purchased in proportion to weights in the index.
  - This helps ensure close tracking
  - Increases transaction costs, particularly with dividend reinvestment
- Sampling
  - Buys a representative sample of stocks in the benchmark index according to their weights in the index.
  - Fewer stocks means lower commissions
  - Reinvestment of dividends is less difficult.
  - Will not track the index as closely, so there will be some tracking error.
- Quadratic Programming
  - Historical information on price changes & correlations
  - between securities are input into a computer program
  - that determines the composition of a portfolio
  - that will minimize tracking error with the benchmark

  - This relies on historical correlations, which may change over time,
  - leading to failure to track the index

Tracking Error & Index Portfolio Construction

- The goal of the passive manager should be to minimize
  - the portfolio's return volatility relative to the index, i.e., to minimize tracking error
- Tracking Error Measure
  - Return differential on time period t:

$$\Delta_t = R_{pt} - R_{bt}$$

Where;
- R_{pt} = return to the managed portfolio in Period t
- R_{bt} = return to the benchmark portfolio in Period t

- Tracking Error (TE)
  - is the standard deviation of Δ_t, normally annualized

$$TE = \sigma_\Delta \sqrt{P}$$

Where;
- P is the number of return periods in a year.

An
- Alternative definition we;
  - the Root Mean Square (RMS): $\sqrt{\sum \frac{1}{T} (\Delta t)^2}$

Management Styles by Tracking Error

Style	Tracking Error
Passive	<1% (normally <0.5%.)
Structured	1% - 3%
- Active management with control on TE	2+% (normally 5-15%.)
Active	

Methods of Index Portfolio Investing

- Index Mutual Funds
  - Investors buy shares in investment company, which invests the money raised in an index portfolio
  - The fund is not traded in an exchange
  - In an indexed portfolio, the fund manager will typically attempt to replicate the composition of the particular index exactly.
  - The fund manager will buy the exact securities comprising the index in their exact weights.

Methods of Index Portfolio Investing

- Index Mutual Funds
  - Change those positions anytime the composition of the index itself is changed
  - Low trading & management expense ratios
  - Advantage:
    - an inexpensive way for investors to acquire a diversified portfolio
  - Disadvantages:
    - no intraday trading;
    - potential tax repercussions when fund sells holdings
  - A famous index fund is the Vanguard's 500 Index Fund which mimics the S&P 500 index

- Exchange-Traded Funds (ETFs)
  - ETFs are depository receipts that give investors a pro rate claim
    - on the capital gains & cash flows of the securities
    - that are held on deposit by a financial institution
    - that issued the certificates
  - A significant advantage of ETFs over index mutual funds is that they can be bought & sold (& short sold) like common stock
  - Some notable examples of ETFs
    - Standard & Poor's 500 Depository Receipts (SPDRs)
    - iShares - indexed positions in many global equity markets
    - Sector ETFs

An Overview of Active Strategies

- Goal is to earn a portfolio return that exceeds
  - the return of a passive benchmark portfolio,
  - net of transaction costs,
  - on a risk-adjusted basis
- Need to select an appropriate benchmark
- Practical difficulties of active managers:
  - Transactions costs must be offset by superior performance vis-a-vis the benchmark
  - Higher risk-taking can also increase needed performance to beat the benchmark

Equity Portfolio Investment Philosophies & Strategies

- Passive Management Strategies
  1. Efficient Markets Hypothesis
     - Buy and hold
     - Indexing
- Active Management Strategies
  2. Fundamental Analysis
     - "Top down" (e.g., asset class rotation, sector rotation)
     - "Bottom up" (e.g., stock undervaluation / overvaluation)
  3. Technical Analysis
     - Contrarian (e.g., overreaction)
     - Continuation (e.g., price momentum)
  4. Anomalies & Attributes
     - Calender effects (e.g., weekend, January)
     - Information effects (e.g., neglect)
     - Security characteristics (e.g., P/E, P/B, earnings momentum, firm size)
     - Investment style (e.g., value, growth)

Fundamental Strategies

- Top-Down Vs Bottom-Up Approaches
  - Top-Down
    - Broad **country** & **asset class** allocations
    - **Sector** allocation decisions
    - Individual **securities** selection
  - Bottom-Up
    - Emphasizes the **selection of securities** without any initial market or sector analysis
    - Form a portfolio of equities that can be purchased
      - at a substantial discount to what his or her
      - valuation model indicates they are worth

- Three Generic Themes (Types of Adjustment):
  - Time the equity market by shifting funds
    - In to & out of stocks, bonds, and T-bills
    - depending on broad market forecasts
    - This is known as tactical asset allocation

  - shift funds among different equity sectors & industries
    - (e.g., financial stocks, technology stocks) or
    - among investment styles (e.g. value, growth large capitalization, small capitalization)
    - This is known as **sector** rotation

  - Do **stock picking** and look an individual
    - Issues in an attempt to find undervalued stocks

Fundamental Strategies

- The 130/30 Strategy
  - Long positions up to 130 percent of the portfolio's original capital & short positions up to 30%.
  - The use of the short positions creates the leverage needed, increasing both risk & expected returns compared to the fund's benchmark
  - Enable managers to make full use of their fundamental research
    - to buy stocks they identify as undervalued
    - as well as short those that are overvalued

Technical Strategies

- Contrarian Investment Strategy
  - The belief that the best time to buy (sell) a stock
  - is when the majority of other investors
  - are the most bearish (bullish) about it
  - The concept of mean reverting
  - The overreaction hypothesis
- Price Momentum Strategy
  - Opposite to contrarian
  - Focus on the trend of past prices alon & market purchase and sale decisions accordingly
  - Assume that recent trends in past prices with continue
  - Tends to work better in the short run

Anomalies & Attributes

- Earnings Momentum Strategy
  - Momentum is measured by the difference of actual EPS to the expected EPS (earnings surprises).
  - Purchases stocks that have accelerating earnings & sells (or short sells) stocks with disappointing earnings
- Calender-Related Anomalies
  - The weekend Effect
  - The January Effect

- Firm-Specific Attributes
  - Firm size
  - P/E and P/BV ratios.

Tax Efficiency & Active Equity Management

- Active portfolio managers especially need to consider
  - taxes when deciding whether to sell or hold a stock
  - whose value has increased.
- If a security is sold at a profit, capital gains are paid
  - and less is left on the portfolio to reinvest
- A new security (the reinvestment security)
  - needs to have a superior return sufficient
  - to make up for these taxes

- The size of the expected return depends on [redacted]
  - the expected holding period & the cost basis
  - (and amount of the capital gain) of the original security

- Measures of Tax Efficiency
- Portfolio Turnover
  - Measured as the total dollar value of the securities
  - sold from the portfolio in a year divided by
  - the average dollar value of the portfolio
- Tax Cost Ratio (%)
  - The Formula

$$\text{Tax Cost Ratio} = [1-(1+\text{TAR})/(1+\text{PTR})] \times 100$$

Where;
- PTR = pretax return
- TAR = tax-adjusted return.

Value Vs Growth

- A growth investor
  - focuses on the current & future economic "story" of a company,
  - with less regard to share valuation

- A value investor
  - focuses on share price in anticipation of a market correction
  - and, possibly, improving company fundamentals.

- Value stocks
  - generally have offered somewhat higher returns than growth stocks,
  - but this does not occur with much consistency
  - from one investment period to another

- Typical features of growth stocks:
  - High EPS growth
  - High P/E & P/BV ratios
  - High profitability
  - Sectors: technology, health, services

- Typical features of value stocks:
  - Underpriced according to various measures
  - Low P/E and P/BV ratios
  - High yield
  - Sectors: regulated industries; cyclical industries

Asset Allocation Strategies

- Integrated asset allocation:
  - Separately examine the following two factors:
    - Capital market conditions
    - Investor's objectives and constraints
- Strategic Vs tactical asset allocation:
  - Strategic:
    - Determines long-run policy weights (e.g. returns, risk & cov)
    - Constant mix (fixed over time)
  - Tactical:
    - Frequently adjusts asset weights to reflect market conditions
    - Often based on mean reversion
      - This is inherently contrarian
- Insured asset allocation
  - Adjusts asset weights to reflect changes in investor's needs
  - Often increases weight on riskier assets as wealth grows

- Selecting an Active Allocation Method
  - Perceptions of variability in the client's objectives and constraints
  - Perceived relationship between the past & future capital market conditions
  - The investor's needs & capital market conditions can be considered constant or variable.