Macroanalysis and Microevaluation of the Stock Market

Questions to be answered:

• What are the expected and the empirical relationships between economic activity and security markets?
• What is the macroeconomic approach to estimating future market returns?
• What are the major macroeconomic techniques used to project the securities market?
• What is the leading economic indicator approach? What are its uses and shortcomings?
• What are the expected and the empirical relationships between the growth of the money supply and stock prices?
Macroanalysis and Microvaluation of the Stock Market

- What is meant by excess liquidity and how is it measured?
- What is the effect of monetary policy on stock prices in the United States and around the world?
- What are the expected and the empirical relationships between inflation, interest rates, and bond prices?
- What are the expected and empirical relationships between inflation and stock prices?
- How do the basic valuation variables differ among countries?
- What factors should be considered when analyzing the outlook for a foreign economy and its stock and bond market?
- What is the asset allocation procedure for a global portfolio?
- For a world asset allocation, what is meant by normal weighting, underweighting, and overweighting?
How do we apply the dividend discount model (DDM) to the valuation of the aggregate stock market?

What would be the prevailing value of the market as represented by the S&P Industrials Index based upon the reduced form DDM?

What would be the prevailing value of the aggregate stock based upon the present value of free cash flow to equity (FCFE) model?
The Components of Market Analysis

Macromarket Analysis

• A strong relationship exists between the economy and the stock market

• Security markets reflect what is expected to go on in the economy because the value of an investment is determined by
  – its expected cash flows
  – required rate of return (i.e., the discount rate)
Economic Activity and Security Markets

Stock Market as a Leading Indicator of the economy

– Stock prices reflect expectations of earnings, dividends, and interest rates

– Stock market reacts to various leading indicator series- ie. corporate earnings, corporate profit margins, interest rates, and changes on the growth rate of the money supply.

➢ Since this series tends to lead the economy, when investors adjust stock prices to reflect these leading economic series, expectations for stock prices become a leading series as well.
Cyclical Indicator Approach to Forecasting the Economy

• This approach is based on the belief that the aggregate economy expands and contracts in discernable periods that it can identified by the movements in specific economic series

• Cyclical indicator categories
  – leading indicators
  – coincident indicators
  – lagging indicators
Cyclical Indicator Categories

- **Leading indicators** – economic series that usually reach peaks or troughs before corresponding peaks or troughs in aggregate economy activity
  > The group includes the 10 series shown in Exhibit 12.2-Brown & Reilly (refer handout)

- **Coincident indicators** – economic series that have peaks and troughs that roughly coincide with the peaks and troughs in the business cycle. Many of these economic series are used to define the business cycle. (refer Exhibit 12.2)
Cyclical Indicator Categories

• **Lagging indicators** – economic series that experience their peaks and troughs after those of the aggregate economy

• **Selected series** – economic series that are expected to influence aggregate economic activity but do not fall into one of the three main groups. This includes such series as US balance of payments and federal surplus or deficit.
Cyclical Indicator Approach to Forecasting the Economy

• **Analytical measures of performance**
  
  – **diffusion indexes** – indicates how pervasive a given movement is in a series. Eg. new orders for equipment by 100 companies – the diffusion index for this series would indicate what proportion of the 100 companies are reporting higher orders during an expansion.

  • **Trends** - also important to know the prevailing trend for a diffusion index. -check peak/troughs of diffusion index against aggregate series

  • **Rates of change** - whether a series is increasing is useful, but knowing that a 7% increase in month following a 12% increase in the previous month shows that the series is increasing but at a declining rate.
Cyclical Indicator Approach to Forecasting the Economy

• Analytical measures of performance
  • comparison with previous cycles – would reveal whether a given series is moving slower or faster that during prior cycles.
Cyclical Indicator Approach to Forecasting the Economy

• Limitations of cyclical indicator approach
  – false signals – when a series is moving in one direction suddenly reverses and nulifies a prior signal or hesitates, which is difficult to interpret. High variability is a series causes this problem
  – currency of the data and revisions – some data series take time to be reported, but a bigger problem are revisions in data especially if the revision changes the direction implied by the original data.
Cyclical Indicator Approach to Forecasting the Economy

- Limitations of cyclical indicator approach
  - Economic sectors not represented - no series to reflects the service sector
  - No series represents the global economy
  - Political and international developments are not factored into a statistical system
Cyclical Indicator Approach to Forecasting the Economy

Other leading indicator series

– CIBCR:
  • Long-leading index – intended to provide earlier signals of major turning points in the economy
  • leading employment index – forecast changes in US employment
  • Leading inflation index – to forecast US inflation
Cyclical Indicator Approach to Forecasting the Economy

Other leading indicator series

- International leading indicator series – set of composite leading indicators for 8 other major industrial countries: Canada, Germany, France, UK, Italy, Japan, Australia and Taiwan (+US)

- Surveys of sentiment and expectations –
  - eg, monthly surveys on consumer expectations. Others include firm’s capital spending or inventory investment plans
  - Economic stats released by the government is another source of helpful information about current economic trends.
Monetary Variables, the Economy, and Stock Prices

- Money supply and the economy
- Money supply and stock prices
- Inflation, interest rates, and security prices
Money Supply and the Economy

- Declines in the rate of growth of the money supply have preceded business contraction by an average of 20 months
- Increases in the rate of growth of the money supply have preceded economic expansions by about 8 months
Money Supply and Stock Prices

- Excess Liquidity and Stock Prices – earlier studies show strong relationship between money supply changes and stock prices.
- However, subsequent studies found that changes in the growth rate of the money supply consistently lagged stock returns by about 3 months.
Monetary Variables, the Economy, and Stock Prices

• Other economic variables and stock prices
  – growth in industrial production
  – changes in the risk premium
  – twists in the yield curve
  – measures of unanticipated inflation
  – changes in expected inflation during periods of volatile inflation
Inflation, Interest Rates, and Security Prices

• Inflation and interest rates
  – generally move together
  – investors are not good at predicting inflation

• Interest rates and bond prices
  – negative relationship (the only variable that changes is the discount factor)
  – more effect on longer term bonds

• Inflation, Interest rates and stock prices (see handouts)
  – not direct and not consistent
  – effect varies over time
Analysis of World Security Markets

- Goldman, Sachs & Co.
  *World Investing Strategy Highlights*
- Inflation and exchange rates
- Correlations among returns
- Individual country stock price changes
- Individual country analysis
- World asset allocation
Microvaluation Analysis

• The Dividend Discount Model (DDM)
• The Free Cash Flow to Equity Model (FCFE)
• The Earnings Multiplier Technique
• Other Relative Valuation Ratios
Estimating Expected Earnings Per Share

- Estimating Gross Domestic Product
- Estimating Sales per Share for a Market Series
- Alternative Estimates of Corporate Net Profits
- Estimating Aggregate Operating Profit Margin
- Estimating Depreciation Expense
- Estimating Interest Expense
- Estimating the Tax Rate
Estimating the Stock Market Earnings Multiplier

- Determinants of the Earnings Multiplier
- Estimating the Required Rate of Return
- Estimating the Growth Rate of Dividends
- Estimating the Dividend-Payout Ratio
Calculating an Estimate of the Value for the Market Series

• It is important to understand the relevant variables and how they relate to the critical estimates of earnings per share and the earnings multiplier

• The two critical estimates that are necessary for both the cash flow models and the earnings multiplier approach are the required rate of return discount rate and the expected growth rate of earnings, cash flow, and dividends
Using Other Relative Valuation Ratios

- The price-to-book-value ratio (P/BV)
- The price-to-cash-flow ratio (P/CF)
- The price-to-sales ratio (P/S)
Microvaluation of World Markets

It is crucial to keep three important factors in mind:

• The basic valuation model and concepts apply globally
• While the models and concepts are the same, the input values can and will vary dramatically across countries
• The valuation of non-domestic markets will almost certainly be more onerous because of several additional variables or constraints that must be considered such as exchange rate risk and country or political risk