[Week 1]

Introduction

Market Participants

- Different participants have different goals and objectives. They have different risk preferences and investment horizons.
- Market participants include:
    o Individuals
    o Investment managers (funds)
    o Insurance companies
    o Superannuation and pension funds
    o Banks
    o Governments
    o Sovereign wealth funds
    o Universities (endowments)
    o Hedge funds
    o Algorithmic traders
    o Market makers and dealers

Asset Allocation and Funds

- Managed funds fall into a number of categories that pool investors funds.
    o Unit trusts
        ▪ Investor's funds are pooled, usually into specific types of assets.
        ▪ Investors are assigned units in the fund which are typically traded.
        ▪ Invest in tradable units
            • Sell a fixed number of units to investors, closed end funds.
        ▪ An unlisted trust, however can issue new units at any time.
            • Value of each unit depends on the value of underlying investments.
            • Open-ended funds, in the US they are called Mutual funds.
    o Superannuation funds accept and manage contributions from employers and employees to provide retirement income benefits.
        ▪ Known globally as pension funds.
        ▪ Managed by life insurance companies, fund administrators, master trusts and pooled trusts.
        ▪ There are different structures: defined benefit funds, and defined contribution funds.
            • In defined benefit funds the retirement payout is based on a formula.
            • In defined contribution funds (also termed 'accumulation funds') the value of the retirement payout depends on investments of contributions in the fund.
    o Hedge funds
        ▪ Hedge funds seek to hedge against risky price movements via short selling, arbitrage trading, derivatives, distressed securities, low-grade bonds, and high-leveraged portfolios, as to maximise the expected return-risk of the portfolio.
        ▪ Access to hedge funds is limited.
    o Exchange trade funds
        ▪ ETFs are listed on the stock market.
        ▪ Trades as per any stock, throughout the day, unlike other managed funds.
        ▪ They are essentially a hybrid between a listed security and an open-ended fund.
        ▪ Provide ease of access and the low costs of entry and exist.
        ▪ The often have an explicit and objective (i.e. index tracking).

- Strategic asset allocation is a benchmark allocation between asset classes. The allocation between classes will generally be determined by risk.
    - Example of asset classes:
        - Cash
        - Fixed interest
        - Property
        - Alternative investments
        - Equity
    - An investment manager will generally have a range of portfolio weights for each asset class.
    - The asset allocation will depend on the objectives of the fund (balanced funds, conservative funds, imputation funds, etc.).
- Tactical asset allocation is active between asset classes. It takes the actual portfolio holdings away from the strategic asset allocation.
    - Managers attempt to exploit temporary mispricing by adjusting exposure to different asset classes.
    - The tactical allocation will move between minimum and maximum bounds on the amounts invested in each.

Risk, Return and the Historical Record

<u>Determinants of the Level of Interest Rates</u>

- Interest rates and forecast of their future are one of the most important inputs into an investment decision. Forecasting interest rates is notoriously difficult, however the fundamental drivers of interest rates are:
    - The supply of funds from savers (primary households).
    - The demand of funds from businesses to be used to finance investment (and other private sector uses).
    - The government's net demand for funds as modified by the actions of central banks.

Real and Nominal Rates of Interest

- An interest rate is a promised rate of return denominated in some unit of accounts (currency units generally) over some period of time.
- Assuming that these is no default risk, a promised rate of interest can be considered a risk-free rate for that particular unit of account and time period.
- If an interest rate is risk from for one unit of account and a single time period, it will generally not be the risk-free rate for another unit of account and time period.
- The consumer price index ('CPI') measures purchasing power by averaging the prices of goods and services in a basket that comprises of ordinary items for household consumption.
- Part of interest earnings will be offset by a reduction in the purchasing power of dollars. This creates the difference between nominal and real interest rates.
    - Nominal interest rates are the growth rate of money.
    - Real interest rates are the growth rate of purchasing power.
- The relationship between nominal interest rates and real interest rates can be approximated as:

$$rr \approx rn - i$$

> *where:*
> *rr = real interest rate*
> *rn = nominal interest rate*
> *I = inflation rate*

- The exact relationship between nominal and real rates is expressed as:

$$1 + rr = \frac{1 + rn}{1 + i}$$

which rearranges to:

$$rr = \frac{rn}{1 + i} \quad 1$$

where:
rr = real interest rate
rn = nominal interest rate
i = inflation rate

- Future inflation rates can never be known with certainty and expectations must be relied upon. As such, the real rate of return is risky even when the nominal rate is risk-free.

The Equilibrium of Real Interest Rates

- Real interest rates are determined by three basic factors: supply, demand and government actions. As nominal rates are impacted by inflation, the expectations of future inflation will be a fourth factor that determines nominal rates.
- Standard properties of supply and demand can be applied to the availability of funds. As interest rates increase, the supply of funds will increase as saving is encouraged. As rates increase, it is more attractive for investment and borrowing to occur, increasing the demand for funds.
- Through the use of fiscal and monetary policy, the public sector has a considerable impact on the supply and demand of funds.

The Equilibrium of Nominal Interest Rates

- Higher nominal rates are expected when rates of inflation are higher. This is because a higher nominal rate is necessary to maintain the expected return offered by an investment.
- This relationship can be used to establish the implication that when real rates are relatively stable, changes in nominal rates ought to predict inflation.
  - Studies have found this to have mixed results. Overall, the logic tends to fit the data just as well as other means of predicting inflation.
  - Nominal rates can be thought of as a sum of the required real rate plus a 'noisy' forecast of inflation.

Comparing Rates of Return for Different Holding Periods

- Holding an investment for a longer period of time will intuitively yield a greater return.
- To compare returns of investments of different investment horizons, the total return must be looked at as a rate of rate for a common period.
- This is achieved by looking at the effective annual rate ('EAR'). This represents the percentage increase in funds over a one-year horizon.
- The relationship between the EAR and the return for a given period is expressed as:

$$1 + EAR = (1 + r_T)^{1/T}$$

where:
EAR = effective annual rate
r_T = rate for the given period 'T'
T = period of time expressed in years

- Annualised rates on short-term investments are often reported using simple rather than compound inters. These are called annual percentage rates ('APR'). The relationship between the EAR and the APR is expressed as: