

FINC3017: IPM Notes

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Week 1 - Introduction

Monday, 25 July 2016

2:06 pm

Essay:

Essay will be on 'betting against beta'.

Investment Assets:

Assets that can be invested in:

- Property
- Equity
- Currency
- Derivatives
- Commodities
- Debt (bonds)

Participants:

- Individuals
- Investment managers (funds)
- Insurance companies
 - They collect premiums and must ensure they have enough money to pay out claims
- Superannuation/pension funds
 - Aggressive/defensive allocation
- Banks
- Governments
 - Issue bonds
- Sovereign wealth funds
 - Future Fund in Australia
- Universities (endowments)
- Hedge funds
- Algorithmic traders (high frequency traders)
- Market makers and dealers

Investment funds industry

Managed funds:

- Pool investors' funds

1. Unit trusts

- Funds are pooled usually into specific type of assets
- Investors assigned units in the fund which are typically traded
- Invest in tradable units e.g. listed property trusts
- Open-ended funds
 - Issue new units at any time
 - Value of each unit depends on the value of the underlying investments

2. Superannuation funds

- Accept and manage contributions from employers and/or employees to provide retirement income benefits
- Two structures
 - Defined benefit
 - Retirement payout is determined based on a formula
 - Defined contribution
 - Also term accumulation funds
 - Value of retirement payout depends on investments of contributions in the fund

- Key point: In defined contribution the investor takes on the risk, in DB the superfund takes on the risk
- Superannuation makes up 80% of assets under management, which has grown to \$2.5 trillion

3. Hedge funds

- Seek to hedge against risky price movements via short selling, arbitrage trading, derivatives, distressed securities, low-grade bonds, and high leverage portfolios so as to maximise the expected return-risk of the portfolio
- Access to hedge funds is limited
- They can do a lot i.e. v flexible

4. Exchange traded funds

- Listed on stock market
- Trade as per any stock
- Hybrid between listed security and an open-ended fund
- Provide ease of access (cheap entry/exit)
- Often have an explicit objective and benchmark (e.g. index tracking)

Asset Allocation

Strategic allocation:

- Benchmark allocation between asset classes
 - Cash
 - Fixed interest
 - Property
 - Alternative investments
 - Equity
- These classes are based on risk e.g. equity carries with it more risk (would be more willing to take that on the younger you are)
- Generally investment managers will have a range of portfolio weights for each asset class
- Allocation depends on the objective of the fund
 - Balanced funds, conservative funds, imputation funds, inflation funds

Tactical allocation:

- Allocation is active between asset classes
- Takes the actual portfolio holdings away from the strategic asset allocation
- Managers attempt to exploit temporary mispricing by adjusting exposure to different asset classes
- Move between a minimum and maximum bonds on the amounts invested in each class

Trends in Australia:

- Significant increase in overseas assets due to decreased transaction costs for international trading
- Increase in unit trusts
- Significant decrease in domestic bonds (18% to 6%)

Interest Rates

Interest is a promised rate of return denominated in some unit of account over some time period.

One must differentiate between nominal and real interest rate.

- Real interest rate incorporates inflation uncertainty i.e. change in CPI (purchasing power)

Nominal interest rate = growth rate of money

Real interest rate = growth rate of purchasing power

Real rate = nominal - inflation/1+inflation

Equilibrium interest rate:

- 4 basic factors that determine equilibrium:
 - Supply
 - Demand
 - Government actions
 - Expected inflation.

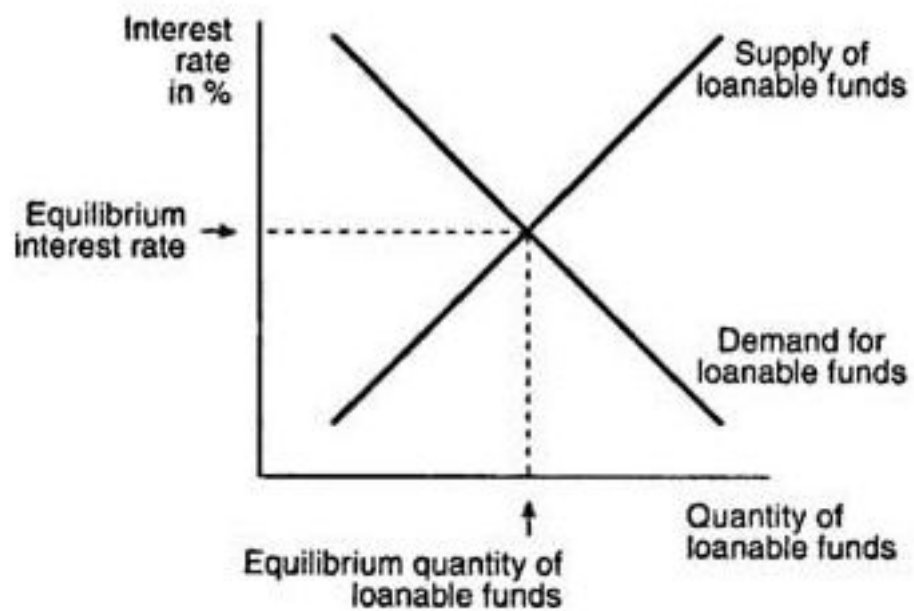


Figure 1

Determination of the equilibrium interest rate

Analysis:

- Downward sloping demand curve
 - The lower the real interest rate, the more businesses will want to invest in physical capital.
 - Assuming that businesses rank projects by the expected real return on invested capital, firms will undertake more projects the lower the real interest rate on the funds needed to finance those projects.
- Upward sloping supply curve
 - This is because the higher the real interest rate, the greater the supply of household savings.

- Assumption is that at higher real interest rates households will choose to postpone some current consumption and set aside or invest more of their disposable income for future use.
- X axis = quantity of funds, Y axis = Real rate of interest
- Government action
 - Shift supply or demand curves through either fiscal or monetary policy
 - Example: increase in government in deficit --> increase in borrowing demand --> shifts demand curve to the right --> increases real interest rate
 - Example: expansionary monetary policy --> supply curve to the right

Rates of return and different holding periods:

Effective Annual Rate: percentage increase in funds invested over a one-year horizon.

- Equals the total return, $rf(1)$, and the gross return, $(1 + \text{EAR})$

Compounding is used for investments that are either shorter or longer than a year.

$$1 + \text{EAR} = [1 + Rf(T)^{1/T}]$$

APR are rates that use simple, instead of compounding interest.

- $\text{APR} = (1 + \text{EAR})^T - 1/T$

As T approaches zero, one approaches continuous compounding.

$$1 + \text{EAR} = \exp(R_{cc}) = e^{R_{cc}}$$

To find R_{cc} :

$$\ln(1 + \text{EAR}) = R_{cc}$$

Risk and Risk Premiums

Holding-Period Returns:

- When investing, the realised rate of return depends on:
 - Price per share at year's end
 - Cash dividends you will collect over the year

$$\text{HPR} = \text{ending price of a share} - \text{beginning price} + \text{cash dividend} / \text{beginning price}$$

Note:

- HPR treats the dividend as paid at the end of the holding period.
 - When dividends received earlier, HPR **ignores reinvestment income** between the receipt of the payment and the end of the holding period.
- Percent return from dividends is called the dividend yield, and so dividend yield plus the rate of capital gains = HPR

Expected return and standard deviation

$$\text{Expected return} = \text{probability} \times \text{HPR}$$

Standard deviation is a measure of risk, defined as the square root of the variance.

- Higher the volatility (risky), higher the standard deviation
- It is a measure of the uncertainty of outcomes

Standard deviation does not distinguish between good and bad surprises, it simply measures rates of returns on their deviation from the mean.