

Chp 8-10 Assets Markets

29 October 2022 14:25

Chp 11; Behaviour of markets

30 October 2022 10:39

Chp 11; Behaviour of the markets

economics based (imp chp from exam perspective)

Why govt changes interest rates OR factors affected by int rate OR economic level of country affected by int rates

1) Economic growth

If real interest rates are low:

it increases consumption © cuz savings become less due to lower bank interest rates

Borrowing increases due to lower int rate, low borrowing cost and therefore Investment (I) spending will increase by corporates

Agg. Demand = $C + I + G + \text{Exports less imports}$

Increases in C and I will increase AD which in turn leads to increase in overall growth of economy

2) Inflation

There is a direct relationship between qty of money in an economy and level of prices in an economy

$MV = PY$ (qty theory of money)

M - money supply, V - velocity, P - price, Y - level of income/no of transactions

An increase in M will lead to increase in price level and therefore inflation

Govt influences int rates to maintain the level of inflation in an economy



3) To control the exchange rate

If int rate are more in country A than in country B, increase in demand for country A currency due to higher int rates and higher returns on investment. Appreciation of country A's currency. If currency is over appreciated then govt will reduce int rate.

Theories of Yield curve

Yield curve: plot of int rates against term to redemption

When yield curve is upward sloping:

With increase in term to redemption -> increase in int rate

When yield curve is downward sloping:

With increase in term to redemption -> decrease in int rate

10 yrs bond will give less int rate than 5 yr bond

Expectations theory

If you are expecting short term int rates will increase/decrease it will actually increase/decrease leading to upward/downward sloping curve

Another aspect is that investors expect int rates to go up if inflation is high so that int rates can at least beat inflation. To control future inflation, govt increases int rate to reduce consumption and investments to reduce AD. There need not be an actual change in factors, just investors expectation will have impact on bond price.

Liquidity Preference theory

liquidity preference theory is based on the generally accepted belief that investors prefer liquid assets to illiquid ones. Investors will require higher compensation for less liquidity in long term bonds.

The yield curve is always upwards sloping according to Liquidity preference theory.(acc to TAJ, contradicting with TB) According to liquidity preference theory, the yield curve should have a slope greater than that predicted by the pure expectations theory. Expectations theory yield curve+ liquidity premium = liquidity preference theory yield curve

Inflation Risk premium theory

(write this only when nominal bonds are talked abt, not real bonds as inflation protection is there in real bonds)

According to this theory, long term bonds have greater uncertainties and hence greater inflation uncertainties too. Thus investor will want higher interest rates to compensate for this risk in a long term bond. Again, the yield curve will be upward sloping.

The theory applies if it is assumed that some investors have real liabilities (i.e., liabilities that change as inflation changes), and so purchasing conventional bonds leads to a mismatching risk.

Market segmentation theory

Investors try to match their investments to the NTCU of their liabilities. If investor/company has short term liabilities, ex. General insurance companies, then they will invest in short term bonds. If company has long term liabilities like life insurance companies or pension funds, then they invest in long term bonds. Prices and hence yields are dependent on market demand and supply.

Factors influencing bond yields

1) Inflation

Inflation erodes real value of income and capital repayments, incase of fixed coupon bonds

Expecting inflation to increase, then require higher bond yields, compensation to beat higher inflation

Expecting inflation to decrease, then require lower bond yields

2) Short term interest rates

Short term int rate increase, then GRY of bond also increase

Short term int rate decrease, then GRY of bond also decrease

GRY nominal yield = risk free rate (short term int rate?)+ expected inflation + inflation risk premium

3) Fiscal deficit

Govt. expenditure > govt. revenue => govt. resorts to borrowing

Govt. can issue bonds or print currency to cover up the deficit

Issue of bonds will lead to more supply and hence prices reduces, leading to increase in interest rate and GRY

Printing more currency leads to more supply of money which in short term reduces interest rate and GRY. But reduction in int rates will lead to increase in consumption and investment leading to increase in Agg demand. This will lead to inflation which again will mean that in long run, the int rate and GRY will increase.

Hence, in general, fiscal deficit will lead to rise in int rate and GRY.

4) Return on alternative investments

If other investments such as equity or property is giving higher returns, then in order to lure investors higher yields might be required for bonds

5) Institutional cashflow

If there is an increase in cashflow in the economy, then investors will want to invest this money and hence the demand for bonds will increase. The price for bonds will increase and therefore the interest rates/GRY will fall.

6) Changes in regulation

If there is a change in regulation of say, either minimum 10% investment in bonds, then this impacts demand, price and GRY of bonds depending on whether demand increased/decreased from before the change in regulation.

7) Exchange rates

If investors simply choose the investment that gives them the highest return (ie they ignored currency risk and the need to match liabilities) then we would expect the following equation to hold when investment markets are in equilibrium:

Return on n year UK govt bonds = Return on n year US govt bonds + expected appreciation of dollar against pounds

In short run, change in US interest rate will lead to US/UK exchange rate

In long run, exchange rate will follow its long term path purchasing power parity (PPP). So any change in UK int rate will lead to changes in US int rate. Any changes in foreign int rate will lead to change in domestic int rate.

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Factors influencing level of Equity market

1) Expectations of profit

PV of share = PV of future cashflows, level of return on equity depends on profits

2) Interest rate

Low int rate leads to increase in economic activity, Consumption and Investment increase

This leads to increased levels of profitability and hence increase in dividends. Thus, increase in general level of equity market.

3) Inflation

Price of share is PV of dividends/future cash flows

If inflation increases, then we expect dividends to increase too for compensating increase in inflation

And hence increases in level of equity markets

4) Equity risk premium

Min return expected is risk free rate, and in addition we req equity risk premium (ERP)

ERP compensates for default risk, less marketability and high volatility of equity.

Increase in ERP due to any of the above factors, equity returns will increase and hence level of equity markets increase

5) Real economic growth

If we are expecting economy to grow, it will increase the level of dividends. Changes in level of dividends will lead to changes in equity returns

6) Currency

If we have weak domestic currency, ie depreciation. Hence exports will increase as for them it is cheaper. Increase in exports will increase profitability of companies that exports which will increase equity returns

At the same time, foreign currency appreciating due to our lower domestic currency value, then imports gets expensive. If a company is dependent on imports, then profits reduce due to higher costs, and hence lower equity returns.

Factors influencing level of Property market

1) Economic growth

Increase in economic growth, then increase in demand for commercial and industry premises. Demand for property will increase, both commercial and private. Rents will increase, therefore property value increase as value of property = PV of rents.

- 2) Structural changes in demand for property
Due to covid and work from home, no demand for office space. Lower rents due to lower demand and hence drop in property value
- 3) Development lags
Property is fixed in location
Takes time to develop
It is subject to lot of statutory control
Any changes/restrictions by local authority that restricts development will reduce supply irrespective of demand. For example, govt puts restriction on sea facing villas owing to environmental concerns, supply of such property will reduce irrespective of demand. Supply becomes relatively inelastic.
- 4) Inflation
If inflation increases, rents will increase to maintain its real value, which leads to increase in level of property markets
- 5) Interest rates
If int rates increase, PV of rent will drop, property value declines
- 6) No of investors
If more investors more demand hence price of property increases
- 7) Exchange rates
Not much impact. If domestic market is very cheap, then more investors, both domestic and foreign. Thus more demand and increase in price of property.

9/11/22

Changes in Demand / Supply that affect prices (non economic factors)

Non economic factors impacting demand

Changes in cashflow of institutional investors - if they have more money, then demand increases and vice-versa
Changes in liabilities
changes in regulation
Fashion or sentiment changes
Changes in level of education
Changes in taxation
Changes in price of alternative investments

Non economic factors impacting supply

Equity market
rights issue (issue shares to existing shareholders at a relatively lower rate than market)
New share issues

Bond market
Fiscal deficit - increases supply of bonds
Govt strategy - issue bonds (increases supply) or print money (no impact on supply)

Questions that can be asked from this chapter:

Factors affecting various market

How changes in interest rate impact the economy/ increase in money supply impacting equity market

15/11/22

Q1) What does the yield curve represent? How do you think the yields of different bonds, viz., Central government, state government, and corporate bonds would compare against each other? (6mks)

The yield curve represents the plot of yield against term to redemption. Generally, the yield is the gross redemption yield of coupon paying bonds.

Risk (default): Central government < State govt. < corporate

Marketability: Central govt. > State govt. > corporate

Liquidity: Central govt. > State govt. > corporate

Since risk of default is highest in corporate bonds, we see that the marketability and liquidity is low and hence the yield is highest

Central govt bonds more marketable and liquid than state govt. Hence, investors require more yield in state bonds than central bonds but definitely less than corporate bonds.

Return: corporate > state govt. > central govt.

Fiscal deficit, govt bonds supply increase and may sell very cheap and hence GRY on govt bonds may be more

13/12/22

Q2) The central bank of a country has just announced reduction in short term int rates

- i) Explain why the central bank may have taken this course of action
- ii) Discuss how a reduction in short term int rates would affect the following types of domestic investments; govt bonds and equities

Ans:

- i) The central bank might have reduced short term interest rates for the following reasons

To boost economic growth rate:

When interest rates are low, investors spend more as the int rates offered on savings by banks are less. Hence consumption increases

The borrowing costs too reduce and companies will invest more due to the lower cost.

Thus C and I increase resulting in increase in AD, $AD = C + I + G + \text{exports} - \text{imports}$. This results in overall growth of economy due to increased levels of demand for goods.

To control inflation

When int rates are low, investors and companies borrow more. This increases money supply in the economy $MV = PY$, assuming V and Y are held constant. Thus, increase in money supply will increase prices, leading to inflation. This would have been to combat deflation in the economy which will stall economic growth

To control exchange rates

If currency is over appreciated, the govt will reduce int rates to remain competitive with other economies and attract foreign investment. Reducing interest rates, will counter the over appreciation and thus exchange rates can be controlled.

Some other reasons include

To lower the cost of borrowing for govt from central bank especially, when there is fiscal deficit

To reduce value of domestic currency and make exports more competitive

To address any imbalance in the economy, such as high levels of unemployment or rising levels of inequality by increasing money supply and increasing AD which the companies are likely to meet.

May be due to political reasons

Due to international pressures if int rates in the international markets have been lowered.

ii)

Govt bonds

Reduction in int rates will lead to GRY of govt bonds, and the prices of bonds will go up
 Investors who own govt bonds during a rate cut will experience increase in cap gain
 If currently, short term int rates are decreasing, then expectation of inflation increases and uncertainty of inflation also increases
 Cuz of reduction in short term int rates, expectation of future increase in long term int rates due to inflationary expectation
 As int rates are low, lesser foreign investors will be investing in domestic bonds
 As price increases, the demand may fall over the short term but since long term int rates are expected to go up, demand will increase in the long run.

Equities

Low int rates will increase C and I, hence increase in AD.
 Therefore increase in profitability of company and hence dividends.
 Thus prices of equity will go up.
 PV of future dividends will increase, hence price increases
 Since short term int rates have decreased, inflation will increase, hence inflationary expectation increase leading to increase in dividends as compensation
 Exchange rates depreciate, exports competitive and imports expensive
 If exporter then more profits, if importer then fall in profit

Q3)

A country has seen a steady acceleration in the growth of the money supply.
 (i) Outline the possible government policy responses. [2]
 (ii) Describe the likely impact on a portfolio of short-term, medium-term and long-term conventional and index-linked government bonds. [3]
 (iii) Explain the economic circumstances that might cause corporate bonds to underperform government bonds. Consider the case where the bonds are held to redemption and the case where they are sold prior to redemption. [3]
 (iv) State three policy objectives that a government may try to achieve by altering the level of short-term interest rates and explain how changing interest rates can achieve these objectives. [6]
 [Total 14]

Ans:

- i) According to quantity theory of money; $MV=PY$
 So a steady acceleration in growth of money supply will imply increase in prices too, assuming velocity and no of transactions are held constant
 Hence this will lead to increase in inflation in the economy
 The govt may increase short term interest rates to counter inflation as money supply will reduce in the market due to increased cost of borrowing
 Hence consumption and investment will fall, leading to reduced aggregate demand to counter inflation

The govt can also undertake fiscal measures such as reducing govt spending or increasing taxes which will again reduce agg demand

Monetary policy; the govt can sell bonds to reduce the money supply in the market
 Govt can do unwinding of quantitative easing - decline printing currency

The government can intervene in the exchange markets by buying or selling its currency in order to reduce money supply by changing the supply and demand for currency

Because of political reasons, govt not responding at all

- ii) Policy responses are leading to increase in int rates
 Due to Increase in short term int rates, short term bond yields increase
 Price of short term govt bond will fall

Long/medium term

If markets expect int rates to continue to increase, then GRY of long and medium term will also increase

If the rise in int rates has countered inflation, then due to lower expected inflation, GRY will fall

Price of indexed linked bonds

If market is worried about uncertainty of expected inflation, they will increase the demand for indexed linked bonds and hence price will go up

If market believes govt will increase int rates to counter inflation, then GRY of bonds will increase and hence prices will fall

NOTE: I have confusion in relationship btwn int rates and GRY

Int rates reduce, more C and I, more profit, higher prices due to good position of company and lower risk, hence price of bond increase and GRY decrease **DOUBT: higher inflation leads to higher expected GRY to beat inflation?**

Int rates increase, borrowing cost increase, less agg demand, less economic activity, lower profits, higher risk in bonds, lower price, higher GRY

Thus short term int rates directly linked to GRY of bonds

iii) If held till redemption, corporate bond will underperform if actual risk corporate > govt is less than expected risk of corporate > govt

If sold before redemption, then if at the time of sale price of corporate bond < govt bond then underperformance due to:

Recession- very less economic activity, companies not profitable. Then govt bonds will perform better than corporate as investors will not be wanting to take the risk of default

Lower marketability of corporate bonds than govt bonds in a recession especially due to risk.

Govt fiscal deficit has reduced, govt will issue lesser govt bonds, less supply,

If govt bond supply is very less, hence price increases; more than corporate bonds, more cap gain

iv) expand this...

To stimulate economic growth - reduce short term int rates

To control inflation - increase int rates

To control exchange rates - increase int rates, currency appreciates

Q4) Suggest why the equity market may rise on a day when govt bond yields fall all durations? 4mks

Ans:

Equity yield = risk free rate + equity risk premium, if govt GRY is falling then equity yield also falling.

GRY of bonds falling implies prices are increasing

This means demand for bonds have increased

Investors have more money supply, hence demanding more bonds, thus they may invest in equity too

Prices of govt bond increases, investors want an alternative source of investment to achieve higher yields for same price as equity returns > govt bonds

Lower borrowing costs due as increased money supply, hence more economic activity due to increased Investments and hence equity price rises

Increased investor confidence, if govt bond yields are low implies economy doing good, hence invest in companies, lower risk of default

Increased expectations of future economic growth; since economy is good, it will continue to grow, hence invest and earn higher returns

Low interest rates also imply the currency depreciates as it becomes less attractive for foreign investment. Hence exports become more competitive and profits of exporters increase

Chp12 - Valuation of Investments

13 December 2022 21:37

Different methods to value assets/investments

1) Market value

If security is quoted, then the sale value is the market value
The market value keeps on changing
We will know exact value with certainty at the time of transaction
Can only known for quoted securities
Not subjective
Easily available, if available
Easily explainable - no need for complex derivations

3 types of value available in a quoted exchange; bid price, offer price, mid value market value

Bid price - price you are willing to buy
Offer price - price you are willing to sell
Mid value - avg of bid n offer

2) Historic book value

If quoted value not available, then use book value
Price paid originally for asset
Objective, no subjectivity
Well understood and explainable
Conservative approach - value at purchase, no consideration for in between changes

3) Written down value

Historic book value adjusted for movements in value
Written up - appreciation/revaluation (land due to development)
Written down - due to depreciation (machinery)

4) Fair value

Value for which is an asset could be exchanged or liability settled between knowledgeable willing parties at arms length
Use the most recent available price
Market value (generally this is used)
Price found out by broker
Stochastic modelling

5) Discounted cashflow

Present Value of future cashflows - expected income and capital stream
Easily consistent with liability valuation
But very big subjectivity wrt discount rate
Govt bond yield
Govt bond yield + risk premium

6) Stochastic modelling

Extension of discounted cashflow method
Future cashflows are random or int rates are random or both are random
Random means they will be assigned a probability distn
This is for a more complicated scenario like derivation valuation
Better picture of valuation due to range of outcomes

Consistent with liability valuation

7) Arbitrage value

Calculated by a replicating strategy - replicate investment payoffs with a combination of other investments payoff.

Difficult technique

Used for derivatives - futures, options valuation

Q) Discuss the suitability of using market price to value a holding of an ordinary share (4mks)

Ans:

Advantages

Ordinary shares are likely to be quoted. Hence market value is appropriate as It known only for quoted assets.

Readily available

Easily understood and explainable

No subjectivity

Disadvantages

Keeps on changing, not fixed value

Very volatile

May not be available for unquoted securities

Exact value will be known with certainty only at time of transaction

Need clarity which price to use - bid/offer/mid-value

14/12/22

Discuss how we will value assets

Bond Valuation

(Discounted cashflow approach used)

Govt bonds or corporate bonds can be valued by discounting cashflows at a particular rate

The rate used should be consistent with liability valuation

Equity Valuation

Market Value - provided there is a suitable quoted market available for that equity

Simple approach

Objective means of valuation

Dividend discount model - General and Simplified

General

Value of equity $V = \sum_{t=1}^{\infty} \frac{D_t}{V(t)}$, $t = 1$ to ∞ , V = value of share, D_t = value of dividend pymt at time t , $V(t)$ = discount factor

Simplified model

$\frac{D}{(1+i)} + \frac{D(1+g)}{(1+i)^2} + \frac{D(1+g)^2}{(1+i)^3} + \dots$

Int rate $>$ growth rate

Dividends are payable annually, with next payment in one year's time

Dividends grow at a constant rate of g pa

Assuming no taxes, no expenses

$PV = \frac{D}{(1+i)} * [1 + \frac{(1+g)}{(1+i)} + \frac{(1+g)^2}{(1+i)^2} + \dots]$

$PV = \frac{D}{(1+i)} * \frac{1}{(1+g / 1+i)}$

$PV = \frac{D}{i-g}$

Property Valuation

Discounted cashflow approach

We assume rents will continue till perpetuity

PV of rents = value of property

$PV = R_0 \cdot \text{adue}(12); <n1> + v^{n1} \cdot R_1 \cdot \text{adue}(12); <n2-n1> + \dots$

R_0 - first time period rent, n_i 's - rent review timings...need not be annual

Chp13 - Relationship between returns on asset classes

14 December 2022 10:40

Required return - my need

Required return on any asset = risk free real rate of return + expected inflation + risk premium

Risk premium - compensation that investors need for investing in that particular type of asset

Real rate rather nominal rate - real yield on indexed linked govt bond

Expected return - my want

The return that investor expects to achieve on the asset

Expected return = initial income yield + expected capital growth

Capital growth is change in price

Price = PV of income = income/DF, DF using income yield = income/income yield

Example; Equity price = Dividend/dividend yield

Hence, Expected capital growth = income growth + impact of change in yield

expected return = required return, then assets are fairly priced

expected return > required return, then assets appears to be cheap

expected return < required return, then assets appears to be dear

Q) State the factors that determine the size of the difference btwn the yields of conventional bond and index linked bonds (4mks)

Inflation protection - offered by indexed linked bonds and no inflation protection on conventional bonds

Credit worthiness of issuer - if issued by two diff govts, then risk premium will change

Time period of bond

Marketability - indexed linked bonds are generally less marketable than conventional bonds as it is more complex and less understood by investors

Liquidity - indexed linked bonds are generally less liquid than conventional bonds

Supply and demand - arising due to currency strengths of the 2 diff govt bonds

Difference in taxation rates

Different rate of coupons

Difference in volatility of return

Differences due to economic or political reasons

Q)

(i) List four economic factors, other than inflation, that influence the level of government bond yields. [2]

(ii) 'If there is a time lag in indexation, lower expected inflation will increase the real yield on index-linked government bonds. So if we expect inflation to fall we should invest in index-linked government bonds.' Comment on whether you agree with the various aspects of this statement. [3]

(iii) Outline the circumstances that may cause the inflation risk premium on fixed-interest bond yields to change. [3]

[Total 8]

i) Interest rates

Returns on alternate source of investments

Exchange rates

Money supply

Fiscal deficit

Changes in regulation

li) yes, if there is a lag, real yield will increase due to lower expected inflation, as indexed linked coupons will reduce, implying price falls and real yield increase.

But last month/period is not inflation protected due to time lag

The real yield on fixed int securities is very sensitive to expected inflation as no inflation protection is there

If we expect inflation to fall, then invest in fixed int security, than indexed linked bonds for higher real yields as the coupons on indexed linked bonds will reduce due to it being indexed linked where as fixed int bond will give fixed coupons, hence more return.

Choice of asset should depend on type of liability we have to meet.

lii)

Changes in interest rates - if int rates increase, then inflation risk premium may also increase

level of inflation in the economy - If going to rise more inflation risk premium and vice-versa

Investor expectation - if investor expects inflation to go up or is worried about the uncertainty of inflation then more inflation risk premium

Changes in credit worthiness of issuer - credit worthiness improves, then lower inflation risk premium

Change in Political stability

Change in Quantitative easing, money supply - govt measure to control inflation

Change In pace of economic growth

Chp 14 Investment Strategy

22 August 2022 20:03

(Long Que/ case-study oriented que, situation -> form of investment strategy)

Factors to be taken into consideration

Indirect application of chapter more expected in exam

Ques from perspective of investor or investment company

Factors to be taken into consideration while framing investment strategy

1) Investment objectives

To meet my liabilities as they fall due

To increase return

To reduce risk

2) Risk level of an investor

Riskiness associated with different asset classes

Risky nature of investor – whether investor is risk averse(prefer govt bonds or money market instruments) or risk loving (equity or property)

3) Nature of liabilities

Liabilities are real or nominal? If nominal invest in fixed int bonds or money market instruments. If real then invest in equity or property

4) Currency of my liabilities

If liabilities are denominated in domestic-currency then go for domestic asset. If overseas liabilities, then overseas assets

5) Term of liabilities

Long term – invest in equity/property

Short term – bonds

Very short term – money market

6) Uncertainty of liabilities

If liabilities are uncertain, then invest in liquid assets, as we will have enough money to meet them

7) Taxation

Tax position of investor

Tax treatment of different asset classes, some asset classes may have advantages

If I am taxed heavily on cashflow, then prefer instruments that give cap gains(ZCB)

If I am taxed heavily on cap gains, then prefer instruments that give cashflows(equity)

8) Legal restrictions

Min proportion in fixed interest bonds (say 30%) if investing on behalf of a company.

Individual investor may not have restrictions

9) Size of assets

Free assets available, then afford mismatching

If assets size is less compared to liabilities, then go for complete matching

10) Existing asset portfolio

If current portfolio is well diversified, then can afford unique assets also

If current portfolio is biased towards one particular asset, then diversify

11) Strategy followed by others – can adopt similar strategy or consider it

12) Need for diversification (same as point 10?)

13) Expected return from various asset classes

High return – equity/property

Stable return - bonds

(Not exam style que)

Q1) Suggest ways that a portfolio may be diversified within each of the following investment types - 8mks

Domestic equity

Equities of different industrial sectors can be purchased so that there is heterogeneity and the returns from each industry are fairly independent

By doing overseas exposure - (find what this means)

Quoted vs unquoted shares

Size of company - small vs large

Public vs private company equity

Companies of different gearing

Overseas equity

Equities can be purchased from different countries

Different currencies so that there is enough heterogeneity and the returns from each country is fairly independent

Equity from emerging vs developed economy

Different geography

Property

Property from different location can be purchased so that a particular location's events do not affect the returns from other location

Residential vs commercial - invest a fair mix of property in both these kinds

Domestic vs overseas

Leasehold vs freehold

Property shares vs property pooled funds

Fixed interest bonds

Bonds of different companies from varied sectors

Govt bonds vs corporate bonds

Size of company - small vs large

Short term vs long term bonds

Investing in bonds with different credit rating, for diversification we can go for junk bonds(a high-yielding high-risk security, typically issued by a company seeking to raise capital quickly in order to finance a takeover.)

Q2) Outline the points a charity should take into account while reviewing its investment strategy - 10mks

The objectives of the charity

to meet its fund requirements for doing charity

Returns

To increase the returns - to get more money for charity

If the charity prefers high returns, then invest in equity or property

If charity prefers stable returns, invest in bonds

Risk

To reduce risk as the money received will most often be through donations for charity.

Reputational risk - loss of donation money

the charity might be risk averse as it might not want to lose donation money. Hence invest in secure assets

Nature of liabilities

real terms as the cost associated with charity performed will increase in line with inflation

Hence invest in asset classes that give real returns, example - equity/property/indexed linked bonds

Term of liabilities

The charity should match its assets to term of liabilities

Term of liabilities of charity are generally short term, unless they have entered into a long term contract

If short term, then invest in short term bonds, money markets

If long term, then invest in equity/ property

Currency

Generally liabilities are domestic, hence invest in domestic asset classes

If overseas charity performed then invest in overseas asset classes as well, else domestic classes

Uncertainties

Invest in money markets to meet any uncertain liabilities

Tax

Tax position of charity, whether it is exempt from tax or not

invest in tax exempt assets

If taxed more on cap gains, invest in assets that give more cashflows, example equity

If taxed more on cashflows, invest in assets that give more cap gains, like ZCB

Strategy followed by other charities

can consider the strategy followed by other charities

Diversification

If current asset portfolio is biased towards one assets, then diversify else can invest in unique/particular asset with high returns depending on the risk appetite

Size of assets

Assets of charity may include the current asset portfolio plus expected donation from different stakeholders(private govt)

The value of these assets should be measured against the liabilities to check for level of mismatching

High level of statutory restrictions

Have to maintain lot of free assets

Cashflows (same as uncertainty?)

Any event like natural disaster might require charity to fund, hence require high cashflow return asset classes

Also take into consideration the prospects of different cashflow from different stakeholders

22/10/2022

Questions Video

14mks que

i) State the principles of investment for a provider of defined benefit scheme

To meet the scheme liabilities as they fall due

To maximize the return subject to minimum level of risk

(These are principles of investment in general and can be used here)

ii) Outline the key factors the trustees of a defined benefit need to consider when finalizing a fund's investment strategy

Risk appetite of the sponsor

Any regulatory restrictions

Consider nature of liabilities, that liabilities are secure and we can pay liabilities as and when they fall due
Current liquidity position
The current level of diversification
Tax efficiency
Size of assets
Current levels of assets/solvency position of scheme - surplus or deficit

lii) Due to recent events stock of blue chip companies fallen by more than 30% in last 3 months. Investment manager of DB which invests in debt and cash, feels appropriate to invest in equity to give enhanced returns in medium to long term. Discuss pros and cons of this suggestion

Pros

The liabilities of DB scheme are long term and real in nature. So investment in equities can help in meeting these liabilities
Blue chip companies - you can invest when prices are down and can sell when prices go up
Blue chip companies have higher credit rating and they are less likely to default on a dividend payment. Hence the investment is secure in that regard.
A source of diversification compared to other investments
Higher return in equity
Better protection against inflation which is not the case with cash/debt
lower contribution in future due to current higher returns

Cons

Chances of more fall in price in future
DB schemes requires to make payment on retirement or death, the timing of which is uncertain. So they require stable assets to meet the liabilities. Equity returns are volatile, and the risk appetite of the sponsor may not allow investment in equity
cost involved in investing in equity
Time involved in analyzing equity for investing
Requirement of expertise for investing and selection of equity shares
Tax Benefits may not be available. Other assets may provide better tax benefits.
Have to bear the regulatory restriction of minimum investment in equity.

Q2) 6 mks

Defined contribution scheme and freedom to invest in money markets, debt fund, equity, property fund. Switch option between funds is allowed. Contributions locked till subscriber turns 60 after which he can buy an annuity from a life insurance company. Discuss suitable investment strategy for subscriber currently aged 40 till he turns 60.

NOTE: Strategy is asked, not factors like consider risk appetite

Age 40 (20yrs left)

Objective is maximization of your wealth
Can invest 100% in equity and property
Time horizon is long, so property can give greater returns than equity
The subscriber can also invest in property funds, but he will have to bear charges for that.

Age 50-54 (10-5 yrs left)

Objective is to reduce the riskiness of portfolio
Pull out from property and invest in equity (60-70%) and debt (30%-40%)

Age 55-57

Subscriber wants to remove volatility
Equity -30/40% , debt - 50/60%

Last 2-3 yrs

Again reduce volatility
Pull out from debt investments and Invest in money markets

29/10/22

Q3) 10mks

An individual aged 50 is married and is currently employed with a manufacturing company. Retirement age is 60yrs. He has approached you to provide financial advice about planning his finances for a comfortable retired life.

- i) How is the expenditure post retirement(Por) different from pre retirement(Pr)
Por he will not have travel expenses to office, if that was not already covered but the company
Pr he might have expenses relating to his children's education/marriage
Por due to his age, he might have higher medical expenses
His expenses will reduce in general Por as he will start living on pensions and there is no regular income
Por increase in leisure activities increase; Might have plans like world tour por

ii) List info you will ask the individual before providing further advice

His cash savings
Investments in:
Property
Equity
Debt/bonds
Any inherited wealth

Liabilities
Does he owe anything. Loan?
Medical history

How much are you planning to save for retirement
His expected level of income por
Family members dependents; age of dependent, expenses on dependents like education, marriage
His current salary
Any insurance in place? Either purchased or company sponsored?
Any major plans like world tour for which money is required
Any other sources of income like business? Or income from spouse?
Retirement plan. Shifting anywhere else, location, or same place
Expected increase in salary
Risk appetite; risk averse/risk loving/ neutral

Chp15-Asset Liability Management

14 December 2022

17:42

Principles of investment

An investor should select investments that are appropriate to nature, term, currency and uncertainty of liabilities that reflect his risk appetite (NTCU)

Maximize return for a given level of risk

Net liability outgo

Benefit payments + expenses - premiums/contribution income

Nature of benefits payments

- Guaranteed in money terms - fixed, doesn't change with inflation
- Guaranteed in terms of an index - price index, earnings index, or any other similar index like inflation
- Discretionary - not fixed in amt or in terms of an index but are payable at the discretion of the provider. Bonus payments in with profit Assurance contracts based on profitability of company
- Investment linked - for unit linked schemes. Benefits payable where the amt is determined by the value of investments underlying the contracts after deducting expenses and mgmt charges

Nature of expenses

- Expenses generally increase over a period of time
- Increase at rate between price inflation and earnings inflation
- Earnings inflation include - price inflation and promotional inflation

Nature of premiums/contribution income

- Fixed in monetary terms
- Increasing in line with an index - price inflation index/earnings inflation index

Select assets wrt different nature of liabilities (Match NTCU of assets & Liability)

If liabilities are guaranteed in money terms

Invest in assets that provide guaranteed return

Match assets both in timing and amount of liability outgo

If both timing and amount are matched then known as pure matching

If liabilities are guaranteed in terms of price index

Select assets which provide return which is linked to inflation

Indexed linked bonds or equity(if indexed linked bonds are not available for long term)

Equity return is not guaranteed

If liability is Discretionary

Invest in assets that maximize returns subject to acceptable level of risk

Only if max returns then we will be able to pay bonus

If liabilities are investment linked

Investing in assets that are used to determine the benefits of the investment linked liabilities

Restrictions on investment

- 1) Restriction on type of assets that a provider can invest in
- 2) Restriction on amount that can be invested
- 3) Restriction to match asset and liabilities by currency

- 4) Restriction on maximum exposure to a single counter party, max limit on individual asset class like equity max limit
- 5) Restriction on certain proportion to invest in safe assets like govt bonds
- 6) Restriction to hold mismatching reserve (not always possible to do pure matching). Mismatching extent depends on free assets we own. [Free assets refer to a company's assets that are not encumbered by any liabilities. In other words, these are assets that the company is able to use freely to generate revenue or meet its obligations without having to worry about being used to pay off existing debts.]
- 7) Limit on the extent of mismatching allowed

Liability hedging

- Assets are chosen in such a way as to perform in the same way as liabilities
- Hedging means protection against unpredictable changes in liabilities as a result of unpredictable changes in factors that influence liabilities.
- For example, interest rates, mortality experience
- This not only takes care of pure matching of timing and amount but also other factors that impact liability and ensure assets behave similarly.
- Hedging liabilities wrt all factors that affect liabilities may not be possible - approx. liabilities hedging. This protects from specific factors that impact liability
- Full liability hedging - generally achieved in unit linked assets, as assets are chosen to perform similar to liabilities

Mismatching

Depends on

- 1) Level of free assets/Surplus
Provider can depart from the matching strategies to improve the overall return on its assets
- 2) Regulatory constraints

Guaranteed benefits liabilities, invest in guaranteed return assets. But if those assets default then company will become insolvent.

If no free assets, company cannot tolerate variability in return

Hence if free assets are there, invest in assets that are not fixed returns, acts as a cushion for variability

Liabilities are discretionary, useless to do pure matching. We have to max return

If free assets, then invest such that max returns to pay discretionary benefits as per benchmarks set

Liabilities are investment linked, then invest in same underlying asset. If free assets, can do mismatching to max returns

Asset Liability Model

We use asset liability model as a tool to determine what assets to invest in a given particular objective

How far can provider depart from pure matched position

How can we determine the cashflows to match liability proceeds

Specify objectives

Risk of not meeting liabilities

Max solvency levels

Min probability of default

Model constructed to project asset proceeds and liability outgo

Outcome is examined with the model and compared with investment objective

Choose investment strategy depending on the outcome that matched objective

Model

1) Deterministic

Inputs/parameters are fixed, result is single outcome

Re-run model based on diff set of assumptions to get more outcomes

2) Stochastic

Uncertainty, volatility more in model, then choose this

Assign probability distn to parameters/inputs

Result is range of outcomes

Better capable to project results for complex portfolios

Expensive and time consuming

Q)