Institute of Actuaries of India

Subject SA7-Investment and Finance

March 2021 Examination

INDICATIVE SOLUTION

The indicative solution has been written by the Examiners with the aim of helping candidates. The solutions given are only indicative. It is realized that there could be other points as valid answers and examiner have given credit for any alternative approach or interpretation which they consider to be reasonable.

Solution 1:

i) a) Market Neutral strategy

- Today, many investors remain reluctant to invest in stocks given market uncertainty.
  - While bonds offer an alternative, their values may start to decline if interest rates begin to rise.
  - Market neutral strategies provide another viable option. These portfolios combine offsetting long/short positions, seeking to offer consistent positive returns whether markets rise or fall.

- Positive return potential in any market environment
  - Market neutral strategies and other absolute return investments pursue positive returns no matter what happens to the economy, interest rates or financial markets.

- This approach to capturing non-correlated performance has the potential to:
  - increase returns for the investor
  - reduce the risk for the given level of expected return
  - and expand diversification when added to a portfolio of traditional assets.

- Professionally managed market neutral portfolios implement short and long positions in an effort to eliminate market risk exposure.

- This can produce positive returns independent of the broad market if the portfolio's long positions outperform its short positions.
  - For example, returns would be positive in rising markets if longs rise more than shorts.
  - In declining markets, returns would be positive if longs fall less than shorts

- The return difference between long and short holdings is known as the "spread," and a market neutral strategy's total return is created by this spread plus any interest earned from cash holdings.

- Consequently, a portfolio that combines equal long and short positions relies purely on manager stock selection skill to generate returns.

[4]

b) One of the most common market neutral strategies involves investing equal dollars in long (buy) and short (sell) positions.

- In a typical market neutral portfolio, the goal is for total returns to exceed prevailing money market rates by anywhere from 2% to 5%.

- Compared to long-only stock investing, these strategies have the potential to generate relatively attractive returns with significantly less volatility, since they can benefit from both rising and declining stock positions.

- Generally speaking, market neutral strategies include three sources of return: the actively managed long and short positions and the cash component.

- The long portfolio houses the manager's best "buy" decisions.
  - These are attractive stocks the manager believes will appreciate in value over time.
  - As such, the long portfolio realizes positive results when its stocks rise in value and negative results when prices decline.

- The short portfolio contains stocks the manager considers unattractive or trading at higher prices than their true worth.

- To capitalize on these likely underperformers, the manager borrows stocks, sells them immediately and invests the proceeds in cash.
- If a shorted stock declines in value, the manager can buy it back for less than the original sales price, thus earning a profit when borrowed shares are returned to the lender.
- Conversely, if a shorted stock rises in value, the manager pays a higher price and suffers a loss.

- The cash component is funded primarily with the proceeds from short sales.
  - It is invested in Treasury bills or other cash equivalents earning prevailing interest rates.
  - It also serves as the margin account for the short portfolio.

[4]

c) Skilled stock selection is key

- When a portfolio combines equal long and short positions, stock selection becomes the driving force behind performance.
  - Success depends on selecting longs likely to appreciate more rapidly in rising markets and shorts likely to decline faster in falling markets.
  - As a result, market neutral managers rely heavily on an intensive research effort to gather insights into stocks and generate sound investment ideas.
  - In a falling market, for example, strong stock selection should help limit losses from long positions, while maximizing gains from short positions to earn a positive net spread.

- Using long buys and short sells to take offsetting positions in a specific sector or industry is known as "hedging."
  - For example, a manager may hedge exposure to the health care sector by purchasing (long) health care stocks expected to perform well and selling (short) health care stocks expected to perform poorly.
  - This strategy seeks to reduce overall portfolio risk and enhance return potential by neutralizing exposure to broad market movements, which are also known as "beta."

- In a market neutral strategy, the manager needs to maintain zero beta exposure to the overall market to avoid introducing any added risk or volatility into the portfolio.
  - Market neutral strategies often also seek to maintain dollar and sector neutrality as part of a disciplined portfolio implementation process.
  - The net spread between long and short performance drives returns when the strategy is truly market neutral and directly reflects the manager's stock-picking skills

- The strategy call for a very high degree of sophistication and knowledge which itself is so expensive that unless the fund the a huge one, it can neutralise any excess returns; partly due to costly information and partly due to high remuneration of active fund manager.

[4]

ii) **a)** Traditionally, most stock portfolios were constructed using one style (or factor such as value, growth, momentum and volatility).

- These portfolio typically underperform when the underlying premise does not fit prevailing market conditions.
- Multi factor portfolios aims to address this problem by employing more than one factor to select stocks for the portfolio.
- This strategy addresses high sector concentration of single factor based index strategies through diversification of factor-risk exposures and exhibiting lower performance swings.
- Through this approach, an investor gets access to smart beta strategy which is rule-based and cost-effective.

Some example of multi factor portfolios /index are

- NIFTY Alpha Low-Volatility 30 = 50% alpha + 50% low volatility.
- NIFTY Quality Low-Volatility 30 = 50% quality + 50% low volatility
- NIFTY Alpha Quality Low-Volatility 30 = 1/3 Alpha + 1/3 Quality + 1/3 Low Vol.
- NIFTY Alpha Quality Value Low-Volatility 30 = 25% Alpha + 25% Quality + 25% Value + 25%Low Volatility.

[4]

b)

The ETF under consideration here is typical example of example (ii) given above

- Stocks with high quality (represented by Jensen's Alpha, returns over what markets/indices deliver) and Stocks with low standard deviation (measure of volatility) are selected using a rule-driven process.
- This is a passive scheme based on certain rules.
- The strategy does not take into account the valuations of the stocks, which are high currently.
- Most smart beta ETFs in India suffer from low liquidity on the stock exchanges.
- Also, smart-beta funds are yet to develop a long track record. Therefore, it may be hard to assess how such schemes would perform across market cycles.
- These funds need to develop a record of delivering across cycles and adequate liquidity need to be made available for these ETFs (which may lower the return).

[3]

c) ETFs are generally passively managed mutual fund schemes tracking a benchmark index and reflect the performance of that index.

- Tracks an index- Index is based on research and back tested data with periodic rebalancing
- Similar to Open ended mutual fund scheme
  - but with Lower expense ratio compared to actively managed schemes
  - and lower turnover and higher transparency as compared to actively managed schemes
- Intraday trading on the exchange - Adequate liquidity with AMC & on stock exchange
- Real time prices
- Provides diversification benefits
- Put limit orders
- Minimum trading lot -1 unit on the exchange
- Mandatory delivery into your Demat account

[4]

d) Salient features of benchmark index

- Universe – Selection of universe of stocks from liquid indices e.g. NIFTY 100 & NIFTY Midcap 50
- No. Of Constituents – 30 to 100 stocks selected from liquid indices
- Weight – suitable weightage between high quality stocks and low volatility stocks (e.g. 50%:50%) as per mandate for Beta.
- Stock Cap – Suitable cap across individual stock/Industry/Sector/economy (say 5% for individual stock)
- Rebalancing – Annual or semi annual. Too frequent will not be cost effective and less frequent may left the portfolio with significant risk

[4]

iii) Portfolio construction challenges

Each of these criteria is difficult to achieve in isolation

Protection of capital and growth of the purchasing power of investments

- Insurance policies carry a heavy load of costs
  - Capital charges; intermediary commissions; shareholder loadings; administration expenses; asset management fees.
- This makes it difficult to guarantee no loss on capital cost-effectively
  - or to produce attractive rates of return in excess of inflation

- The problem is exacerbated in the current environment of historically low interest rates, which makes the pricing of protection structures expensive
- The only asset class guaranteed to keep pace with inflation (if held to maturity) is index linked bonds
- And demand has driven real yields so low (well below 5%) that the returns may be barely enough to cover just the expenses

Client access to funds

- Apart from the constraints of insurance legislation it is difficult to structure products with an attractive value proposition if the term of the investment is unknown at the outset
- This imposes a liquidity constraint that would preclude a wide range of asset classes (even ignoring the clients' risk appetite)

Product ease of explanation

- This market segment is not financially sophisticated
- This does not mean that products cannot be financially complex in generating the outcome to the client
  - But from the client's perspective the product promise will have to be very simple to explain or there is a high risk of mis-selling
- So any complexity that increases the risk to clients should be avoided
- E.g. this would include passing the risk of the investment return from an absolute return type fund - where the probability of not meeting the target of inflation-plus returns over the product life is not insignificant – onto the client

It is even more difficult to achieve the criteria in combination

Returns vs. Access

- Providing clients with access to their funds limits the investment strategies available
  - Growth assets are inherently volatile and would be inappropriate as a strategy if returns are guaranteed over short terms
  - But defensive assets are unlikely to deliver required returns after expenses
  - Even defensive assets like longer dated bonds may be unsuitable
  - Protection structures are usually designed to pay off only after a specified term

Returns vs. Ease of understanding

- Returns can only be augmented by taking on risks such as market volatility or credit
- risks
  - But most investment risks are unlikely to be well understood by the clients
- Clients' demand for simple products can be met by giving guarantees
  - If these are underwritten by the insurer it increases capital requirements and hence costs
  - If underwritten by a bank there will be dilution of return to cover bank's margins and the introduction of credit exposure to the bank (albeit small)

Accessibility of funds vs. Ease of understanding

- To create products that allow clients to access their savings more easily the product will have to
  - ... invest very conservatively
  - ... or apply surrender conditions
- In the first instance clients who do not access their funds may be disappointed with the meagre returns generated from near-cash portfolios
- In the second instance clients who are unaware of market dynamics will not understand why their money has diminished in value when they withdraw their savings

[5]

iv) **a) Passive investment strategies**

Philosophical basis of passive investment

- The primary motivation for using passive strategies seems to be to minimise costs
  - This pre-supposes that active management does not add more value by alpha generation than it detracts through costs
- This is still a hotly debated topic in the equity market context
  - It seems that through market cycles active and passive strategies alternate in effectiveness
  - This is largely driven by varying levels of volatility (because high volatility
  - causes all shares to move in unison negating stock picking advantage)
  - ... and the success or otherwise of large cap shares (because indices tend to have a higher weighting of them)
  - Active bond managers appear to be able to outperform passive strategies more consistently
  - ... but the scope for outperformance is more limited
  - ... and this may be purely a function of using sovereign debt fund, which only contains government and quasi-government bonds, as a benchmark as opposed to something more appropriate
  - And the fees are lower than for equities so the savings are also less
- Another consideration is the product's sensitivity to downside
  - It is often argued that passive management guarantees a return less than the index (after costs) while active management has the potential to outperform the index after fees, if the right manager was chosen
  - But active management also creates the potential to underperform the index – possibly by a large margin, especially net of fees
  - If this outcome (perhaps at a time when markets are also falling) is very detrimental to the product, putting a cap of the downside relative to the index could be an attractive feature

[3]

b) Availability of passive vehicles

- Vehicles are not available for all asset classes or strategies
- In India it is easiest to track equity indices - via ETFs and passive mutual funds
  - ...but equities may only be a small part of these portfolios
- The cheapest indices to track (such as the NIFTY50) may also have the least appropriate risk profile
  - Vehicles to track the more desirable indices may not be available
  - ... in which case the costs of creating them might negate the anticipated savings
  - ... or they might be subject to higher tracking errors because replication is problematic
- However, the choice of vehicles is widening as the range of ETFs and passive mutual funds is steadily growing

[1.5]

c) Which index to track

- Passive investment locks the returns onto that of the index being tracked, with minor variations for costs and errors of matching
- But choosing the index is likely to have a far more decisive effect on the investment outcome than the difference between the returns of the index and the average active
- manager
- Much recent research has concentrated on the inefficiency of cap-weighted indices
- So finding a more efficient index, and especially one with desirable risk characteristics, would be highly beneficial and probably more than compensate for any lost alpha
- E.g. an ETF based on high dividend paying shares might have a desirable "value" profile rather than the VIX

[1.5]

d) "Smart passive"

- There is a developing range of semi-passive products called "smart passive" funds - quasi-indexed portfolios with actively chosen sector or style tilts or biases in an attempt to add outperformance or improve the risk characteristics of the portfolio
- By specifying a lower tracking error and deploying a lower risk budget the risks of underperformance are reduced
- They could be useful in providing reasonably low cost portfolios that have appropriate risk/return characteristics to suit the savings products
- The use of these, and any non-vanilla passive funds, does imply that research on the vehicles and the asset managers will be required – with the associated costs

[2]

v) Aligning interests on fees

- A common structure of fees is
  - ... for the asset manager to charge a fixed base fee in percentage terms
  - ... with a performance fee paid if a hurdle rate is surpassed
- The choice of hurdle rate is critical to ensure that the manager is only rewarded for alpha added
- This goes some way to aligning interests because the manager benefits most when it produces superior returns for the client
- But the balance still favours the asset manager
  - ... because the base fee is seldom more than 10 basis points less than the fixed only fee whereas the performance fee is usually capped at much higher levels, like 100bps in total across all components
- The asymmetry in benefit can be illustrated by postulating an unethical manager using this structure and managing half its clients with one extreme market view and the other half with a diametrically opposite view
  - The manager will earn the fixed fee on all clients and quite possibly the full performance fee on the half that benefited by actual market conditions
  - If the fee basis was 50bps + 20% capped at 100bps the manager will earn 75bps on the total portfolio (50bps on one half and 100 bps on the other) without requiring any skill
- A manager may also be tempted to take excessive risks in order to earn the performance-based fee

To more fully align interests, the fee structure might

- Include more severe penalties for underperformance such that the asset manager only covers costs or even incurs losses
  - This would probably only be feasible within a group - where the ultimate good of the shareholders of the group takes precedence over the earnings of the individual entities within the group
- Include claw-back clauses that allow for past performance fees to be refunded if later performance flags
  - To ensure that transitory performance is not rewarded and
  - ... the performance fee does not in effect give a free annual call option to the asset manager
- Adopt the strategy of a "high-water mark" commonly used in hedge funds
  - This ensures that future outperformance is not rewarded until past underperformance is made good
  - Again this should work well with an in-house manager which will have to answer to the group board and cannot cancel the mandate if it gets too far "under water"
- Monitoring and calculating these watermarks and claw-backs can get very complex [5]

[45 Marks]

Solution 2:

i) **a)** Money Market Instruments shall comprise of Short term investments with maturity not more than one year comprising of the following instruments:

- Certificate of deposit rated by a credit rating agency registered under SEBI (Credit Rating Agencies) Regulations, 1999
- Commercial paper rated by a credit rating agency registered under SEBI (Credit Rating Agencies) Regulations, 1999
- Reverse Repo
- Treasury Bills (including Cash Management Bills)
- Call, Notice, Term Money
- CBLO as per Schedules I and II of these Regulations.
- Any other instrument as may be prescribed by the Authority

[1.5]

b) Approved Assets

- debentures secured by a first charge on any immoveable property plant or equipment of any company which has paid interest in full
- debentures secured by a first charge on any immovable property, plant or equipment of any company where either the book value or the market value, whichever is less, of such property, plant or equipment is more than three times the value of such debentures
- first debentures secured by a floating charge on all its assets of any company which has paid dividends on its equity shares
- preference shares of any company which has paid dividends on its equity shares for at least two consecutive years immediately preceding
- equity shares of any listed company on which not less than ten percent dividends have been paid for at least two consecutive years immediately preceding
- immovable property situated in India, provided that the property is free of all encumbrances;
- loans on policies of life insurance within their surrender values issued by him or by an insurer whose business he has
- acquired and in respect of which business he has assumed liability;
- Fixed Deposits with banks) and;
- such other investments as the Authority may, by notification in the Official Gazette, declare to be Approved Investments.

[3]

c) Deemed Approved Assets

- All rated debentures (including bonds) and other rated & secured debt instruments. Equity shares, preference shares and debt instruments issued by All India Financial Institutions recognized as such by Reserve Bank of India
- Bonds or debentures issued by companies, rated not less than AA or its equivalent and A1 or equivalent ratings for short term bonds, debentures, certificate of deposits and commercial papers by a credit rating agency
- insurer's deposits [including fixed with banks (e.g. in current account, call deposits, notice deposits, certificate of deposits etc.) and deposits with primary dealers duly recognized by RBI
- Collateralized Borrowing & Lending Obligations (CBLO) created by the Clearing Corporation of India Ltd and recognized by the RBI and exposure to Gilt, G Sec and liquid mutual fund forming part of Approved Investments as per Mutual Fund Guidelines
- Asset Backed Securities with underlying Housing loans or having infrastructure assets as underlying as defined under 'infrastructure facility'
- Commercial papers issued by All India Financial Institutions recognized RBU and having a credit rating of A1 by a credit rating agency
- Money Market instruments

[2.5]

ii) Currently only RBI regulated lenders and mandates them to enter into ICA. Non- RBI regulated lenders like Mutual funds and insurance companies are not governed by it and thus may not cooperate may not lead to early resolution on stressed assets. Mutual funds and insurance companies are often the largest institutional investors and ICA without these entities may focus on recovery / interest of RBI regulated entities and thus prejudice the interest of millions of small investors show have invested through mutual funds and insurance companies. Thus, current ICA rules are not aligned in principle of equitable treatment of all the creditors. RBI, SEBI and IRDAI should potentially come up with amended regulations wider participation of wider stakeholder base to incorporate the interests of all the stakeholders.

[3]

iii) **a) Side Pocketing**

- 'Side pocket' allows managers of debt funds to segregate illiquid and distressed assets from other relatively liquid assets in a fund's portfolio.
- Such illiquid assets may include investments in bonds that are scarcely traded, commercial papers of companies in default, etc.
- In case of mutual funds, a side pocket creates a separate portfolio for illiquid, risky or stressed securities so that these do not affect other liquid assets of the scheme in case of a "credit event".
- In simple terms, a 'credit event' is defined as a sudden, usually negative, change in a borrower's capacity to pay their loan obligations. Example of a credit event include bankruptcy, debt restructuring and default on payments.

[2]

b) Advantage:

- Any debt mutual fund with significant stake in a company that is defaulted, is allowed to make use of the side-pocketing mechanism. This is because the default of one company may lead multiple investors to redeem their money from the scheme in order to avoid additional losses. The fund house will then be forced to sell its good quality papers in order to pay the investors redeeming their investments.
- Further, in a situation of crisis, generally, institutional investors have the first right to redemption. This process leads to retail investors getting stuck in segregated or toxic assets. This will further increase the quantity of bad assets in the portfolio leading to a further decline in the value of the fund.
- In such a scenario, it is better for the fund house to segregate its stressed investments and take a one-time loss on the fund's investment so that more and more investors do not rush to redeem their investments as the value of the fund decreases.
- Thus, implementing side-pocketing in such a scenario helps fund houses manage redemption pressures better given the fact that other holdings are not be impacted.
- Further, the units (in the segregated portfolio) have to be listed on a stock exchange within X (10 day) days to facilitate exit of the unit holders. Effectively, this makes the price discovery of the bad assets with investors having the freedom of either selling it at prevailing price or holding it if they expect the value to recover in future
- Side pocketing also ensures that investors who were in the investment at the time of write-off, will get a benefit if there is any recovery from the bond.
- The process of side pocketing ensures liquidity is not choked for investors holding the units of the primary scheme as allotment and redemption are done on liquid assets.

[2]

c) How it works:

- Side-pocketing enables the mutual fund schemes to split the Net Asset Value (NAV) into two parts.
- One NAV is for the liquid assets of the scheme and the other is for the side-pocketed illiquid ones. This ensures that the side-pocket does not adversely impact the liquidity and the valuation of the good quality assets held in the portfolio.
- Doing so ensures that if a security is downgraded to 'junk' or 'default' status in the side-pocket, the change will be restricted and would not end up affecting the entire scheme.

- Once the segregation of investment is done, segregated or toxic investments will be closed for future subscription. However, investors can continue to subscribe to the portion that comprises of liquid assets or safer assets.
- Once a side pocket is created, it is split off of the rest of the scheme and closed for subscription as well as redemption.
- Investors can, however, continue to invest and/or redeem their investments in the non-side pocketed portion of the schemes. In case, the fund house receives any money from the side-pocketed funds in the future, it will pay the amount back to the unitholders of the side-pocket.
- All existing investors in the scheme are allotted equal number of units in the segregated portfolio as held in the main portfolio and no redemption or subscription is allowed in the segregated portfolio. Thereafter, the units (in the segregated portfolio) have to be listed on a stock exchange within X (10 day) days to facilitate exit of the unit holders.

[3]

d) Limitations and mitigation

- Side pocketing is a process that should be used cautiously. Also, valuation of illiquid investments is contentious. Thus, the NAV of the illiquid asset will remain a concern.Also, two NAVs – one each of liquid asset and the illiquid asset will be difficult to track for investors.
- This provision could be misused by MFs to hide their bad investment decisions or take more more credit risky assets in portfolio to enhance the return.
- Trustees of all fund houses will have to put in place a framework that would negatively impact the performance incentives of fund managers, chief investment officers (CIOs), etc. involved in the investment process of securities under the segregated portfolio.
- The mutual funds must decide on the creation of a segregated portfolio on the day of a credit event, and the trustee approval is required to be taken within one working day of this.
- The SEBI has also stated that side pocket should not be looked upon as a sign of encouraging undue credit risks as any misuse of the option would be considered serious and stringent action can be taken.
- Any debt mutual fund with a corpus of Rs.1000 crore and at least 5% exposure to a company that is defaulted, is allowed to make use of the side-pocketing mechanism.
- An AMC (Asset Management Company) must propose to create a side pocket by amending the existing SID (Scheme Information Document) of the fund and allow an exit window of 30 days to the investors without charging an exit load.

[3]

[20 Marks]

Solution 3:

i)

- Sharpe ratio is the measure of risk-adjusted return of a financial portfolio. [1/2]
- A portfolio with a higher Sharpe ratio is considered superior relative to its peers [1/2]

- If the value of the Sharpe Ratio is 1.7, it essentially means that the fund has delivered 1.7% more returns than that from a risk-free financial asset.

- Beta denotes the sensitivity of the fund towards market movements. [1/2]
- It is the measure of the volatility of the fund portfolio to the market. [1/2]

Beta of 0.7, implies the fund is less volatile than the market. [1/2]

[Max 2]

ii) Sharpe ratio is very useful when investor has to compare returns between various funds. Higher ratio represents higher returns for every unit of risk [1]

Beta is very important when it comes to managing a portfolio. Different stocks in a portfolio have different betas and the portfolio manager will try to arrive at a target beta for the portfolio by adding or deleting certain stocks from the portfolio. low-beta of a portfolio pose less risk but also lower returns. High beta stocks go up more than the index when the markets are bullish and go down more than the market index when the markets are bearish. [1]

[2]

iii)

- Sharpe Ratio doesn't give any information on whether the equity investment is skewed towards a particular sector or not. As is the case here, the risk on investment is quite high, which the Sharpe ratio of the fund might not reflect.
- Another notable drawback of Sharpe ratio is that it cannot distinguish between upside and downside and focuses on volatility but not its direction.
- Sharpe ratios is backwards-looking and accounts for historical returns and volatility. The decisions based on the ratio assume future performance will be similar to the past
- The calculation of Sharpe ratio based on the assumption that returns are normally distributed, but in real market scenarios, the distribution might have fatter tails, which decreases the relevance of its use

Any 3 [3]

iv) Key questions to be asked

1. Returns over at least past 3 years instead of just 3 months?
2. Is it not a very easy algorithm that can be copied?
3. What is the definition of PE? Is it based on past earnings or future earning?
4. Does this algorithm lead to churning?
5. What's the expense incurred?
6. Is LOFTY the right benchmark for this portfolio?
7. What is the desired return at which he sells?

Any 4 [2]

v) PE of a stock = Price of the stock / Earning per share

- PE multiple is generally used by analysts and investors for evaluating the relative performance of the stock with respect to its peer.
- This ratio tells the amount we investors have to invest to receive a unit of the company's earnings.
- It is a very important multiple for a relative valuation of a stock.
- This ratio conveys very important information of stock value – whether they are undervalued, overvalued or fairly valued.
- Hence, for a stock, we investors can map whether it is a good time to buy an under priced stock or sell an overpriced stock.
- This benchmark PE is the industry median PE for a stock.
- Every industry has a benchmark PE for reference which is then used to gauge the share price of the stock

[1/2 mark for each point]
[2]

vi) Limitations to the algorithm

- The algorithm is based on PE ratio only.
- The first part of the P/E equation or price is straightforward as the current market price of the stock is easily obtained. But, determining an appropriate earnings definitions and number can be more difficult.
- Volatile market prices, which can throw off the P/E ratio in the short term.
- The P/E is typically calculated by measuring historical earnings or trailing earnings. Unfortunately, historical earnings are not of much use to investors because they reveal little about future earnings, which is what investors are most interested in determining.
- Forward earnings or future earnings are based on the opinions of analysts.
- Analysts can be overoptimistic in their assumptions during periods of economic expansion and overly pessimistic during times of economic contraction.
- One-time adjustments such as the sale of a subsidiary could inflate earnings in the short term. This complicates the predictions of future earnings since the influx of cash from the sale would not be a sustainable contributor to earnings in the long term.
- Although forward earnings can be useful, they are prone to inaccuracies.
- Earnings growth is not included in the P/E ratio.
- The biggest limitation to the P/E ratio is that it tells investors little about the company's EPS growth prospects.
- If the company is growing quickly, an investor might be comfortable buying it at a high P/E ratio expecting earnings growth to bring the P/E back down to a lower level.
- If earnings are not growing quickly enough, an investor might look elsewhere for a stock with a lower P/E.
- In short, it is difficult to tell if a high P/E multiple is the result of expected growth or if the stock is simply overvalued. [1/2 mark for each point]

[Max 3.5]

Non-Financial metric

- Management of the company. [1/2]

Any other suitable example **[Max 4]**

vii) Fee Structure

- Fee structure suggested is pretty standard where in upfront a fee is charged. Also, once the hurdle rate is met profit share arrangement is also pretty standard.
- 1.5% - 2.5% is standard in the market
- The hurdle rate here seems to be very low. For PMS typically the hurdle is 25% above which a profit share is charged
- The benchmark for the fee is Mutual fund industry where 2.5% is the charged for equity funds.

[1/2 mark for each point]

[Max 2]

[17 Marks]

Solution 4:

i) Asset Back Security

- Most asset-backed securities are structured using a “pass through” security whereby the retail bank creates a portfolio into which the loans from the retail bank are transferred.
- This can then be securitised and sold to investors.
- The payments of interest and capital from this security to investors are normally guaranteed by an institution so that the credit risk is removed.

- The responsibility for collection of payments on the debt normally remains with the issuing retail bank.
- The retail bank may take a certain proportion of the income from the payments in order to cover its costs.
- The default risk may or may not be passed to the investors [3]

ii) Default Risk

How can one be certain about the quality of loans backing this?
Is there any reports / evidence that can be studied?
In the event of default by the retail bank's customers, what happens to the payments?
Is there a guarantor?
Is there a risk of default by the retail bank itself?

Prepayment Risk

As the loans backing are mortgages, there is a risk of prepayment which means that the term of the debt will not be known.

Mortgages are repayable at any time by the bank's customers. If they repay, what happens to the investment?

Mismatch of Duration

This investment is a medium-term fixed interest investment that will provide a suitable match for the fixed liabilities of the institution

The institution has a risk with respect to the interest rate charged to mortgage customers. If the rate falls due to competitive pressures or due to the level of short-term interest rates, the yield on the investment will fall

Liquidity Risk

Liquidity may also be a concern for the institution, as it will require a certain amount of cashflow to meet claims and expenses.
It is not given if the company is expanding or contracting.
If the company is expanding it may be short of cash because of new business expenses on setting up the new policies.
If it is contracting it will perhaps be paying out more in claims than it received as premiums.
The need for regular income from the investment will be determined by such factors
Additional Spread

Is the additional spread sufficient to cover the additional risk being undertaken?

Marketability of this assets is a concern

Are there any regulatory norms that are to be checked?

Transaction Cost

The transaction costs of such a deal would be a concern. It is complex and requires a complicated legal framework to make it work

Tax

Tax may be a concern to the institution. The tax efficiency of this security would need to be carefully examined.

[1/2] mark for each point
[7]

iii) **Hyperinflation**

In economics, hyperinflation is inflation that is very high or "out of control", a condition in which prices increase rapidly as a currency loses its value. [1/2]
It is likely to be associated with near economic collapse. [1/2]

Gold – likely to be positive
In theory gold is likely to rise in price in line with general inflation as it should maintain its real value. Gold may increasingly be used as a store of wealth increasingly its functional use. [1]

Commodities - negatively
Is likely to maintain its real value offset to the extent its functional value will fall due to lower demand. Shutting down of industries etc may have an adverse impact on the investments. [1]

[Max 2]

iv)

- Quantitative Easing (QE) is a monetary policy used by some central banks to increase the supply of money.
- It usually involves both a direct increase in the money supply and a indirect effect from the reserves,
- QE is usually implemented by a central bank by first crediting its own account with money.
- It then purchases financial assets, for example government bonds, agency debt, mortgage-backed securities and corporate bonds, from banks and other financial institutions in a process referred to as open market operations.
- Buying these securities adds new money to the economy, and also serves to lower interest rates by bidding up fixed-income securities. It also expands the central bank's balance sheet

[2]

v) a) Impact on Bond Market

QE will likely directly impact the bond market due to the purchasing of bonds by the central bank – driving up prices and driving down yields. [1/2]
Speculation by market participants is likely to exacerbate this impact as speculators try to front-run the central bank. [1/2]
Those who sell government bonds to the central bank will likely want to purchase other bonds in their place. [1/2]
Central banks, such as the ECB and BOJ have begun to also directly purchase non-government bonds, meaning that there will also be a direct impact on those markets. [1/2]

Secondary impacts
The secondary impact will be that more corporate bonds are issued to take advantage of the lower yields and lower financing costs. [1/2]
This may moderate the increase in prices and decrease in yields in the bond markets. [1/2]
In the longer-term the additional issuance could lead to higher inflation due to increased economic activity. [1/2]

[Max 2]

b) Impact on Equity Market

Those who sell their assets to the central banks, e.g. their bonds or corporate bonds, will receive cash. [1/2]
Due to low yields they will typically want to invest the cash in equities and other higher yielding assets. [1/2]
This is likely to be result in rising prices for equities and other risky assets. [1/2]

Secondary impacts

Companies are likely to use the lower bond yields to issue more bonds for share buybacks. [1/2]

Companies may also refinance existing debt at lower yields. [1/2]

This is likely to lead to increased growth prospects and increased corporate profitability due to lower financing costs. [1/2]

[Max 2]

[18 Marks]

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