Treasury Management

Virtual classes for CAIIB

Treasury management

- Introduction to Treasury management
- Treasury products
- Funding and regulatory aspects
- Treasury risk management
- Derivative products
- Treasury and ALM

Concept of treasury

- Originally engaged as a service centre
  - only in daily cash management
  - preemptive reserve management
  - Restricted deployment of surplus funds

Concept of treasury contd…

- Currently being looked as a profit centre
  - With active operations in all the markets in the country and abroad except commodity markets
  - Continues to deal in only short term markets excepting in case of SLR investments and capital market products

Integrated treasury

- Implies merger of both domestic and foreign markets meaning two way movement of funds depending upon changing market scenarios and emerging opportunities
- Forex, money and equity markets
- Being possible due to liberalised environment
- As markets are integrated so are the risks
- Derivatives are used extensively for the risk management

Enabling environment

- Creation of clearing corporation of India
- Establishment of NSDL
- Large number of NBFCs and mutual funds
- Private insurance providers
- FIIs and FDIs
- Availability of derivative products in money, equity and forex markets for interest and price risk hedging

Treasury's role in profit maximisation

- Treasury operations are more profitable due to
  - Large size deals leading to lesser operational expenses
  - Relatively risk free markets
  - Need for lesser capital outlay
  - Highly leveraged and with higher return on capital

Sources of Treasury's profits

- Forex market operations
  - both merchant and proprietary
  - Arbitrage in different markets due to time differentials though negligible
  - Both in cash and derivative markets

Sources of Treasury's profits

- Money market
  - Shuffling of investments taking advantage of price changes in investment holdings
  - Borrowing and Lending in money and Repos markets taking advantage of inherent strengths
  - Retailing of Govt. securities

Organisation of treasury

- Front office or dealing room
  - Dealers in various segments carrying actual trades
    - Forex markets - there can be specialists operating in forwards, derivatives
    - Securities markets- generally in secondary markets
    - Investment desk operating in primary markets

Organisation of treasury

- Back office
  - Verification of deals done and settlements thereof
  - Accounting, maintenance of Nostros and reporting to regulator
- Middle office
  - Risk management and adherence to various exposure limits and MIS to Board

Forex treasury products

- Spot trades
- Forwards

  Both for merchant cover operations and proprietary trade for profits

  Generally forward rates are related to interest differentials but in our country also on demand and supply

Forex treasury products Contd…

- Currency Swaps
  - for customers and
  - for funding of proprietary transactions and interest arbitrage
- Options and futures
- Investments
  - Surpluses in short and long term foreign currency assets –treasury bonds, inter bank loans, Nostro balances and also FC loans to domestic customers

Money markets

- Call money
- Notice money
- Term money
- Treasury bill
- Commercial paper
- Certificate of deposit
- Repos and reverse repos (over night by RBI) & acts as upper band and floor of money market rates
- Bill rediscounting

Securities market products

- Government securities (G-sec) and other approved securities for SLR compliance
  - Market stabilisation scheme
- Corporate debt –non SLR securities
  - Both medium & long term
  - Ratings, credit quality determine yields

Corporate debt

- Debentures transferable only by registration
- Bonds transferable by endorsement and delivery
- Convertible bonds
- Floating and fixed rate bonds
- Callable bonds
- Step up coupon bonds
- Deep discounting/zero coupon bonds

Bonds Contd..

- Period bonds where repayment is in instalments
- Premium bonds where premium is paid on redemption
- Collaterlised bonds
- Creation of trustee for managing the affairs and protecting interest of investors in case of debentures

Investments in equity market

- Cap on investments at 20% of net worth
- Both in primary and secondary markets
- As a Qualified institutional investor
- Private placement
- Requires an research desk

Investments from/in overseas markets

- FII investments
- ADR/ GDR issues of Indian corporates
- EEFC funds
- Foreign currency funds of banks
- borrowings & lending in call money markets subject to ceiling of 100 % and 25 % of net worth

Preemptory reserves - Funding aspects

- CRR currently at 5%
- Based on demand and term liabilities
- On fortnightly basis
- Min. 70% on each day
- Exempted liabilities include
  - Inter bank, RBI , ACU, CCIL
  - Capital, reserves
  - ECGC /DICGC SETTLED CLAIMS

SLR investments

- Currently at minimum 24% of NDTL
- Shortly going to be 25 %
- Approved securities include in addition to GOI securities
  - Excess cash with branches
  - State govt. securities
  - Other securities as identified by RBI

Regulations covering treasury

- Liquidity adjustment facility
  - Repos & Reverse Repos
- Payment and settlement systems
  - Negotiated dealing and
  - RTGS , SFMS

Risks in treasury

- We have credit, market and operational risks even in treasury operations
- Credit risk in debt, equity and forex OTC activities
- Market risks –liquidity and interest-in all operations
- Operational risk is very much present because of wholesale nature of business

Risk management

- Organisational controls
  - Dual control on activities
- Internal controls
  - Exposure ceiling limits
  - position limits
  - Deal size limits
  - Open position limits
  - Stop Loss limits

Risk measurement

- Value at risk (VaR)
  - It is an estimate of potential loss
  - Derived from the volatility in the market
  - Volatility is the standard deviation of the price over a chosen period
- Different methods for VaR
  - correlation using historical data
  - Simulation using various parameters
  - Monte Carlo simulation using larger number of parameters

Bond yields

- Yield is
  - different from interest (coupon) on a bond
  - Depends additionally on price and intermittent cash inflows (coupon payments)
  - It is IRR of the bond

Bond yields

- Current yield is coupon divided by the current price
- Yield to maturity is the yield if the bond is held till it matures
- Two bonds with same YTM may have different prices because of frequency of coupons

Duration

- Duration of a bond is a measure of the time taken to recover the initial investment in present value terms
- Duration is a measure of the average time prior to receipt of payments
- Every bond has a component of intermittent coupon payments and repayment at maturity
- During the life of the bond if the market interest changes the bond's price will be effected and also the rate at which these intermittent coupon payments can be reinvested.

Duration

- Duration takes into account the frequency of coupon payments and studies the price movements of a bond
- The period can be different for different bonds of same maturity because of size of intermittent payments
- Duration of a bond where there is no intermittent payments coincides with the tenor of the bond

Duration Contd….

- It is obtained as sum of the weighted averages of present values of inflows with weights being the time in years of the respective coupons
- Modified duration = D/ (1 + yield)
- Price variation in percentage terms

  = -MD * change in yield in bps

Duration Contd..

- Longer the duration, higher is the volatility
- Treasurer arrives at the duration of a portfolio by adding the durations of each of the member of the portfolio
- To protect the portfolio from any interest rate risk , the portfolio is to be held for a period equal to its duration
- This process needs frequent shuffling of the members since duration will change as the maturity date approaches

Derivative products

- Over the counter and exchange traded
- Forwards / Options
- Futures (stocks, currency & interest)
- Swaps (currency , interest rate & basis)
- Price insuring products(options)
- Price fixing products (others)

Derivatives

Derivatives are used by

- Market makers
- Hedgers
- Speculators
- arbitragers

Take an opposite position in derivative market to the position in the underlying /cash market

Forwards

- OTC contracts
- Both parties are committed to contract (definite delivery)
- Price fixing in nature
- Pay offs are linear to the underlying
- Existence of credit risk results in counter party exposure limits
- Forward price = spot price + cost of carry

Options

- Types by rights Call and Put
- Types by mode of settlement European and American
- Types by benefit
  - At the money, in the money and out of money
- Uses of options are as a hedge against price risk and also for trading for profit

Options Contd..

- In the money, at the money and out of money depends upon whether the strike price is better, equal or worse than the market price of option
- Current price of an option will depend upon a host of factors like underlying asset price and its volatility, strike price, interest rates, time to expiration
- All factors have a positive correlation with strike price except the strike price

Options Contd…

There is a mathematical relationship between the current prices of a Call and a Put option with the same expiry date and same strike price and is called

PUT – CALL parity

$$V_c - V_p = P_a - X$$ where

V_c = value of call; V_p = value of put

P_a = price of underlying asset and

X = PV of exercise price

Futures

- Futures are both financial and commodity
- Currency futures are similar to forwards
- Currency, stock and index futures are hedging instruments against price fluctuations
- Interest futures are a hedge against interest rate movements
- Either delivery or back out

Futures Contd..

Margin requirements

- Initial margin- enables trading in very high volumes compared to own stake
- Variable margin – due to daily MTM
- Maintenance margin (minimum margin to be maintained at all times)

Exchange traded currency futures

- Recently introduced as an exchange traded product
- Banks complying with the following can be clearing members
  - Minimum net worth of Rs. 500 crore.
  - Minimum CRAR of 10 %.
  - Net NPA should not exceed 3 %.
  - Bank should have made a net profit in last 3 years.
- Can trade for themselves/clients

Exchange traded interest futures

- Underlying security is 10Yr 7% coupon G-Sec
- Contract size is Rs 2 lacs
- Tenor of the contract is max. 12 months
- Available contracts are 4 quarterly ones
- Day count convention is 360 days

Hedging investments risks with long positions in futures

- Investor's risk is a fall in market interest which would impact his return on investment. When interest rates fall price of futures increases. By going long on futures (s)he can take advantage of a reduced interest situation in case it happens which will offset his loss in underlying market

Pricing of Futures

Spot price

\+ cost of borrowing

– income on the asset

= Futures price

Swaps

- Interest rate , equity and currency swaps
- Interest rate swaps can be
  - Floating to fixed
  - Floating to floating or a basis
  - Coupon swaps
- Forward rate agreement (FRA)
- Currency swaps
  - Only principal
  - Only interest
  - Principal and interest

RBI guidelines on derivatives

- Only plain vanilla swaps are permitted
- Banks can use them even for profit
- USD / INR and cross currency options are permitted but only for hedging
- Specific RBI permission is required to trade in options for profit
- Trading positions in derivatives to be MTM on daily basis
- Banks can become members of F&O segment to trade in exchange traded derivatives

Treasury's role in ALM

- Since treasury deals in large volumes of funds it can both mobilise and deploy the funds as per the banks' requirement either domestically or in overseas centres
- Being in constant touch with market players, treasury can have a better estimate of future interest rate movements in the market
- Treasury is also engaged in determining the transfer price mechanism

Important from exam point of view

Role of each segment in treasury
Relation between spot and forward rates
Relation between two spot rates
Diff. types in money market
Duration
Usage of repo & reverse repo in controlling liquidity

WISHING YOU ALL
SUCCESS IN EXAMS
&
THANK YOU
FOR
YOUR PATIENT HEARING