Lecture

INSTITUTE OF ACTUARIAL & QUANTITATIVE STUDIES

Class: MSc

Subject : Fixed Income Products

Subject Code:

Chapter: Unit 1 Chapter 2

Chapter Name: Issuance, Funding and Trading of Fixed income markets

Today's Agenda

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   3. Maturity
   4. Currency
   5. Type of coupon
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Today's Agenda

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    4. Corporate notes & bonds

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    1. Repurchase agreements
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1 Classification of Fixed Income Markets

- Type of Issuer
- Bonds credit quality
- Maturity
- Currency Denomination
- Type of coupon
- Where bonds are issued and traded

1.1 Classification by Type of Issuer

- Government and Government-related sector
  - World Bank;
  - sovereign governments;
  - local governments,
  - quasi-government entities e.g. railways or highways

- Corporate sector
  - financial (HDFC, HDFC bank, Goldman Sachs)
  - non-financial companies (Reliance)

- Structured finance sector
  - Bonds created from securitization

1.2 Classification by Credit Quality

- Credit worthiness as judged by rating agencies
- Credit worthiness indicated credit risk
- Credit ratings are not static
- Some institutional investors (banks or insurers) are prohibited from investing in non-investment grade or “high-yield” instruments
- Investment grade market more liquid than non-investment grade

1.3 Classification by Maturity

- **Money market securities** –maturity at issuance of less than one year
- **Capital market securities** – maturity at issuance of more than one year

1.4 Classification by Currency

Currency denomination of bond effects which country's interest rates drive bond prices (a bond denominated in Rs will be affected by Re interest rates)

1.5 Classification by Type of Coupon

- Fixed-Rate Debt

- Floating-rate Debt

- Demand side
  1. Floating-rate debt sought for balance sheet management
  2. Interest rate risk can lead to losses and volatility
  3. To curb interest rate risk, banks that issue floating-rate debt prefer to make floating-rate debt
  4. Floating-rate debt also sought by investors who believe that rates will rise

- Supply Side
  1. Floating-rate debt issued by institutions financing short-term loans (e.g. consumer finance)
  2. Corporates issue floating-rate bonds when they expect interest rates to fall

1.5.1 Reference Rates

- Coupon Rate of Floating Rate bond = Reference Rate + spread
- Spread is constant till maturity
- Lower credit quality of issuer → Higher the spread
- Reference rate drives coupon rate
- Libor – Eurobond market
- US dollar Libor – US dollar Libor

e.g. For a floating rate US dollar bond with quarterly coupon, reference rate would be 3month Libor

1.5.2 Demise of LIBOR (LIBOR scandal)

- Scheme in which bankers at several major financial institutions colluded with each other to manipulate the London Interbank Offered Rate (LIBOR)
- Caused distrust in the financial industry and led to fines, lawsuits, and regulatory actions.
- Came to light in 2012, evidence suggests had been ongoing since as early as 2003.
- Leading financial institutions implicated including DB, Barclays, Citigroup, JPMorgan Chase, and RBS
- As a result, LIBOR's credibility is eroded and it is now being phased out.
- According to the Federal Reserve and regulators in the U.K., LIBOR will be phased out by June 30, 2023, and replaced by the Secured Overnight Financing Rate (SOFR).
- LIBOR one-week and two-month USD LIBOR rates will no longer be published after December 31, 2021.1
- Other reference rates include Euribor (euros), Tibor (yen), Sibor (Singapore), Hibor (HKD), Mibor (INR), Koribor (Korean Won)

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1.6 Classification by Geography

- Domestic bond – issued in a specific country, denominated in the currency of that country, and sold in that country issued by a domiciled issuer
- Foreign bond – issued in a specific country, denominated in the currency of that country, and sold in that country issued by an issuer domiciled in another country
- Domestic and foreign bond subject to local legal, regulatory and tax requirements
- Eurobond – issued internationally outside the jurisdiction of country in whose currency it is denominated
- Eurobond subject to less legal, regulatory and tax constraints
- Eurobond more attractive to issue because of less constraints and international pool of investors
- Distinction also made between developed markets (US, UK, Japan) and developing markets (India, China)

1.7 Classification – Others

- Inflation-linked bonds
- Tax-exempt bonds – (eg NHAI bonds or REC bonds – offer exemption on capital gains tax in India)

2 Fixed Income Indices

- Index – describes the status of a market
- Acts as a performance benchmark
- Constructed of portfolio of securities
- Each security has a weight – may be on price or value (market cap)
- Some indices are :
    1. Barclays Capital Global Aggregate Bond Index,
    2. J.P. Morgan Emerging Market Bond Index (EMBI) Global
    3. FTSE Global Bond Index Series
- Tax-exempt bonds – (eg NHAI bonds or REC bonds – offer exemption on capital gains tax in India)

2 Example – S&P BSE India Corporate Bond Index

- Tracks the performance of local-currency denominated corporate bonds from India

3 Investors in Fixed Income Securities

Central Banks

- Invest directly in Fixed-income securities
- Open market operations
- Buy (sell) to increase (decrease) the monetary base
- Buy/sell foreign currency bonds to maintain currency level or to manage foreign reserves

Institutional Investors

- Include pension funds, hedge funds, insurance companies, bonds, charitable foundations, sovereign wealth funds
- Invest directly in Invest directly in Fixed-income securities

Retail investors

- Invest through fixed-income mutual funds or ETF
- Aim is steady income
- Bond issuances happen OTC, therefore retail investors use funds or ETF

4 Bond Investing – New reforms

Why does the RBI want retail investors to participate in Bond Markets?

Retail investors can soon open accounts with RBI for investing in govt bonds

1 min read . Updated: 05 Feb 2021, 12:11 PM IST

Staff Writer

- RBI will soon issue guidelines in this regard
- The platform will be called Retail Direct

In a major structural reform, The Reserve Bank of India will soon allow retail investors open Gilt or G-Sec accounts with the central bank, a move that will help deepen bond markets in India.

RBI will soon issue guidelines for this process. India will join a handful of countries where retail investors have direct access to government bonds - both primary and secondary - the RBI chief said.

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Primary Bond Markets

- Primary bond markets are markets in which issuers first sell bonds to investors to raise capital.
- Issuances in primary bond markets are frequent.
- Different bond issuing mechanisms are used depending on the type of issuer and the type of bond issued.
- A bond issue can be sold via a public offering (or public offer), in which any member of the public may buy the bonds, or via a private placement, in which only a selected group of investors may buy the bonds.

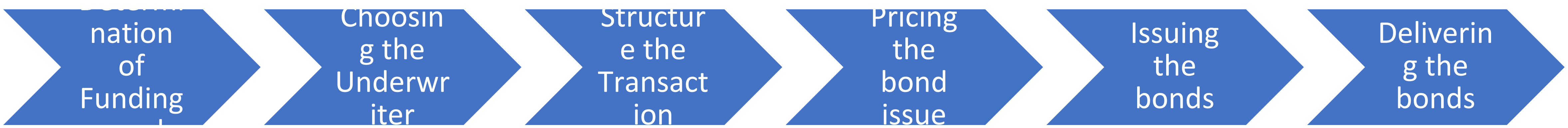
5.1 Primary Markets – Public Offering

- Any member of the public can buy the bonds
- Investment banks play critical role
- Mechanisms are
  1. Underwritten/firm commitment offering
  2. Best effort offering
  3. Auction

5.2 Primary Markets - Underwritten Offering

- Underwriter takes the risk associated with selling

- Used for
  1. Corporate bonds,
  2. Municipal bonds
  3. Securitized bonds



5.3 Primary Market – Shelf Registration

- A shelf registration allows certain authorized issuers to offer additional bonds to the general public without having to prepare a new and separate offering circular for each bond issue.

- Rather, the issuer prepares a single, all-encompassing offering circular that describes a range of future bond issuances, all under the same document.

5.4 Primary Market – Auctions

- An auction is a method that involves bidding.
- It is helpful in providing price discovery (i.e., it facilitates supply and demand in determining prices) and in allocating securities.

5.5 Primary Market – Private placements

- A private placement is typically a non-underwritten, unregistered offering of bonds that is sold only to an investor or a small group of investors. Typical investors in privately placed bonds are large institutional investors.

- A private placement can be accomplished directly between the issuer and the investor(s) or through an investment bank.

- Private placements sometimes represent a step in the company's financing evolution between syndicated loans (loans from a group of lenders to a single borrower) and public offerings.

- Privately placed bonds are often issued in small aggregate amounts, at times by unknown issuers.

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Secondary Bond Market

- Also called “After-market”
- Trades through broker or directly
- Major players – large institutional investors and central banks
- Liquidity is a key concept for market success
- Most bonds traded in OTC market
- No of active traders has gone up than buyers who held till maturity

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Secondary Bond Market

- Organized exchange
  - Buyers and sellers meet to trade
  - Trades must happen at the exchange
- OTC Market
  - Buyers and sellers matched through a communications network
  - Need platform like Bloomberg Fixed Income Electronic Trading Platform

6.1 Key Concepts

- **Bid-offer spread** : Difference between price at which a market maker will buy (bid) and price at which he will sell (offer)
    1. 5 bps for very liquid bonds to more than 50 bps for less liquid bonds

- **Settlement** : Process after trade is made
    1. Bond passed to buyer and payment made to seller
    2. Government and quasi-government settled on T+1 basis
    3. Corporate on T+3 basis
    4. Cash settlement is standard for some bonds

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Sovereign Bonds

- Sovereign bonds are the bonds issued by national governments.
- Bond names vary depending on the country of issue and the bond's maturity.
- In the United States,
  1. Treasury bills (T-bills) are one year or shorter,
  2. Treasury notes (T-notes) have maturity between 1 year and 10 years, and
  3. Treasury bonds (T-bonds) have an original maturity of longer than 10 years.
- In India
  1. Treasury bills or T-bills are short-term G-Sec bonds with maturity < one year (91 days, 182 days and 365 days)
  2. Government bonds are G-Sec bonds with a maturity of one year or more
- The majority of the trading in secondary markets is of sovereign securities that were most recently issued. These securities are called "on the run."
- Last sovereign bond for a given maturity is called the benchmark issue

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Sovereign Bonds

- Sovereign bonds are usually unsecured obligations of the sovereign issuer.
- That is, they are not backed by collateral but by the taxing authority of the national government.
- Local currency sovereign bonds have low(er) credit risk because of the taxing and money issuing power of the government.
- Foreign currency sovereign bonds' credit risk depends on the strength of the national economy and government finances

7.1 Case Study - LTCM

- LTCM made convergence trades. -finding securities that were mispriced relative to one another, taking long positions in the cheap ones and short positions in the rich ones.
- There were four main types of trade:

– Convergence among U.S., Japan, and European sovereign bonds;
– Convergence among European sovereign bonds;
– Convergence between on-the-run and off-the-run U.S. government bonds;
– Long positions in emerging markets sovereigns, hedged back to dollars.

- Because these differences in values were tiny, the fund needed to take large and highly leveraged positions

WHAT WENT WRONG?

- 1998: Russia declares a moratorium on its Treasury debt.
- Massive "flight to quality“ - investors flooding out of any remotely risky market and into the most secure instruments within the already "risk-free" government bond market.
- On-the-run and Off-the-run diverge more instead of converging
- Results in a liquidity crisis of enormous proportions, dealing a severe blow to LTCM's portfolio.

7.2 Types of Sovereign Bonds

National governments issue different types of bonds, such as the following:

- **Fixed-rate bonds** are by far are the most common type of sovereign bond.
    1. Two types of fixed-rate bonds are common: zero-coupon bonds (or pure discount bonds) and coupon bonds.

- Some national governments around the world issue bonds with a **floating rate of interest** that resets periodically based on changes in the level of a reference rate, such as Libor.

- Many national governments issue **inflation-linked bonds**, or linkers, whose cash flows are adjusted for inflation.

8 Non-sovereign government bonds

- Non-sovereign government bonds – Issued by governments below the national level, such as
  1. provinces,
  2. regions,
  3. states, and
  4. cities.

- Typically issued to finance public projects, such as schools, motorways, hospitals, bridges, and airports.

- The sources for paying interest and repaying the principal include
  1. the taxing authority of the local government,
  2. the cash flows of the project the bond issue is financing, and
  3. special taxes and fees established specifically for the purpose of making interest payments and principal repayments.

9 Quasi-government bonds

- Issued by quasi-government organizations, which are established to perform some functions for the government.
- Do not offer an explicit guarantee by the national government, although investors often perceive an implicit guarantee.
- Quasi-government entities typically do not have direct taxing authority;
- Bonds are repaid from the cash flows generated by the entity or from the project the bond issue is financing.

10 Supranational Bonds

- A form of often highly rated bonds is issued by supranational agencies, also referred to as multilateral agencies. The most well-known supranational agencies are the International Bank for Reconstruction and Development (the World Bank), the International Monetary Fund (IMF), the European Investment Bank (EIB), the Asian Development Bank (ADB), and the African Development Bank (AFDB). Bonds issued by supranational agencies are called supranational bonds .

- Supranational bonds are typically plain vanilla bonds, although fl oating-rate bonds and callable bonds are sometimes issued.

11

Corporate Debt

- Sources of Debt capital for companies
  - Bank Loans and syndicated loans
  - Commercial paper
  - Corporate notes and bonds

11.1 Bank Loans and syndicated loans

Bilateral loan

- A bilateral loan is from a single lender to a single borrower.
- Primary source of debt financing for small and medium-size companies as well as for large companies in countries where bond markets are underdeveloped.

Syndicated Loan

- A syndicated loan is from a group of lenders, called the “syndicate,” to a single borrower.
- Primarily originated by banks, and the loans are extended to companies but also to governments and government-related entities.

11.2 When Corporate Debt defaults

List released by RBI on Supreme Court order on top 10 willful corporate defaulters

	Borrower name	Sum of funded advances outstanding and amount technically/prudentially written off
1	Gitanjali gems	5,492
2	Rei Agro limited	4,314
3	Winsome Diamonds and Jewellery Limited	4,076
4	Rotomac Global Private Limited	2,850
5	Kudos Chemie limited	2,326
6	Ruchi Soya Industries Limited	2,212
7	Zoom Developers Private Limited	2,012
8	Forever Precious Jewellery and Diamonds Private Limited	1,962
9	Kingfisher Airlines Limited	1,943
10	Deccan Chronicle Holdings Limited	1,915

11.3 Commercial Paper

- Short-term, unsecured promissory note issued in the public market or via a private placement that represents a debt obligation of the issuer.
- Valuable source of flexible, readily available, and relatively low-cost short-term financing.
- Source of funding for working capital and seasonal demands for cash.
- Maturity can range from overnight to one year, but a typical issue matures in less than three months.
- The largest issuers of commercial paper are financial institutions, but some nonfinancial companies are also regular issuers of commercial paper.
- Most commercial paper is of high credit quality.

11.4 Corporate Notes and Bonds

Corporate notes and bonds are the debt instruments issued by private companies and have these characteristics

- Can be privately placed or sold in public markets
- Range in maturity from 1 to over 30 years
- May have fixed, floating, payment-in-kind (PIK), or zero- coupon structures
- May have a serial or term maturity structure
- May be unsecured or backed by collateral of various forms
- May have various contingency provisions
- Mostly traded over the counter

12 Short-term Funding Alternatives

- Financial institutions, such as banks, have larger financing needs than nonfinancial companies because of the nature of their operations.
- Banks have access to funds from these sources

The retail market	• for example, deposits from their customers
The wholesale market	• for example, central bank funds, interbank deposits, certificates of deposit, and repurchase agreements

12.1 Repurchase Agreements

- Repurchase agreements are an important source of funding not only for banks but also for other market participants.

- A repurchase agreement, or repo, is the sale of a security with a simultaneous agreement by the seller to buy the same security back from the purchaser at an agreed-on price and future date.

- A repurchase agreement can be viewed as a collateralized loan in which the security sold and subsequently repurchased represents the collateral posted.

12.1 Repurchase Agreements

Repurchase price	• Price at which the dealer repurchases the security
Repurchase date	• Date when the security is repurchased, often the next business day
Repo rate	• Interest rate on a repurchase agreement • Affected by the risk associated with collateral, the repo term, the delivery requirement, the supply and demand conditions of the collateral, and the interest rates of alternative financing
Repo margin	• Difference between the market value of the security used as collateral and the value of the loan

12.2 Application - How the RBI sets Interest Rates

Comparison Criteria	Repo Rate	Reverse Repo Rate
Lender and Borrower	Lender – RBI, Borrower – Commercial Banks.	Lender – Commercial Banks, Borrower – RBI.
Borrower's Objective	To manage short term deficiency of funds	To reduce overall supply of money in the economy
Rate of Interest	Higher than reverse repo rate	Lower than repo rate
Interest Charge Applicable to	Repurchase Agreement	Reverse Repurchase Agreement
Mechanism of Operation	Commercial banks get funds from RBI using government bonds as collateral.	Commercial banks deposit their excess funds with RBI and receive interest from the deposit.
Impact of Higher Rate	Cost of funds increases for commercial banks hence loans become more expensive.	Money supply in the economy decreases as commercial banks park more surplus funds with RBI.
Impact of Lower Rate	Cost of funds is lower for commercial banks leading to reduced interest rates on loans.	Money supply in the economy increases as banks lend more and reduce their deposits with RBI.