Module - 35

International Bond Market:
An Introduction

Developed by: Dr. Prabina Rajib
Associate Professor (Finance & Accounts)
Vinod Gupta School of Management
IIT Kharagpur, 721 302
Email: prabina@vgsom.iitkgp.ernet.in
This chapter focuses on international bond market but predominantly from Indian companies’ point of view. International bond market has a long history but India’s entry to this arena is not very old. Since liberalization of Indian capital market many Indian companies have tapped international market and have raised both debt i.e., Eurobonds, foreign bonds, as well as quasi debt instruments like FCCBs (Foreign Currency Convertible Bonds). Many of these bonds and international debts are also issued with varying features like FRNs (Floating Rate Notes). These aspects are extensively discussed.

No discussion on bond is complete without understanding the bond rating mechanism. Also a company international bond or debt rating is influenced by the sovereign rating. Hence both ratings at company level and sovereign rating aspects are discussed in this module.

**Learning Objectives:**

This module covers:

- **History of International Bond Market**
- **Types of International Bonds**
  - Foreign Bond
  - Eurobond
  - Sovereign Bond
- **Variations in Bond Features**
  - Fixed Coupon
  - Floating Coupon
  - Zero Coupon
  - Convertible Bond
  - Dual Currency Bond
- **Floating Rate (LIBOR) calculation methodology.**
International Bond Market has long history. It dates back several centuries. Many wars have been fought by kings funded by borrowing money from other royal houses from different countries. Though it is beyond the scope of this session to discuss the long history of bond market in detail, one interesting study is worth mentioning here.

Ferguson’s 2006 paper studied impact of political risk on international bond market during two distinct periods – 1843 between the 1880 and during 1880-1914. This clearly indicates that international bond market was active even during middle of nineteenth century.

### 35.1 History of International Bond Market:

International Bond Market has long history. It dates back several centuries. Many wars have been fought by kings funded by borrowing money from other royal houses from different countries. Though it is beyond the scope of this session to discuss the long history of bond market in detail, one interesting study is worth mentioning here.

Ferguson’s 2006 paper studied impact of political risk on international bond market during two distinct periods – 1843 between the 1880 and during 1880-1914. This clearly indicates that international bond market was active even during middle of nineteenth century.

### 35.2 Types of International Bond Market:

International Bond market can be categorized into basic types: **Foreign Bond and Euro Bond**.

**Euro Bond**: In Euro bond, a foreign company issues a bond denominated in a currency which is not the home currency of the investors. For example, an US company issues bond and raises capital in Japan denominated in US Dollar. This will be an example Euro Bond. If the US company issues bond in Pound sterling in Japan, it will also be considered as Euro Bond. In the earlier case, it would be considered as a Euro Dollar Bond while in the later case, it would be known as Euro Sterling Bond. Historical development of Eurobond market is attributed to the unfavorable tax regime in USA during 1960s. This forced companies to issue USD denominated bond outside USA. The First Eurobond was done in 1963.

**Foreign Bond**: **Foreign Bond** is a bond where foreign company issues bond denominated in the currency denomination of the foreign country. For example, an US company issues bond and raises capital in Japan denominated in Japanese Yen. In other words, the Japanese investors are not exposed to foreign exchange risk while investing in a foreign bond. At this junction it is important to understand that a Japanese company may also issue bond and raise capital in Japan denominated in Japanese Yen. But bonds issued by the Japanese company are termed as **Domestic Bonds**. In case of a foreign bond, the bond issuer is from a foreign country. An Indian company issuing USD bond in any country belonging to Middle East region is an example of foreign bond.
Details given in the Table 35.1 clearly differentiates among Domestic, Foreign and Euro Bond.

<table>
<thead>
<tr>
<th>Issuer Company Nationality</th>
<th>Currency Denomination of the Bond</th>
<th>Bond Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>Domestic</td>
<td>Domestic Bond</td>
</tr>
<tr>
<td>Foreign</td>
<td>Domestic</td>
<td>Foreign Bond</td>
</tr>
<tr>
<td>Foreign</td>
<td>Foreign</td>
<td>Eurobond</td>
</tr>
<tr>
<td>Domestic</td>
<td>Foreign</td>
<td>Eurobond</td>
</tr>
</tbody>
</table>

More details about Eurobond and Foreign Bonds are discussed in Section 35.3.

Besides Foreign Bonds and Euro Bonds, some companies also issue Global Bonds though very few companies have issued these bonds. In a global bond issue, the issuer offers the bonds to investors of many countries at one go. Normally these bonds are denominated in multiple currencies. Global bonds are normally issued by large multinational or transnational companies or as sovereign bonds. Sovereign bonds are issued by the government of a country representing bonds issued by a country. More details about Sovereign Bond aspect is discussed in next session, Session 36.
Box 35.1 lists the global bond offered by AT&T in 2001. It can be seen that AT&T is offering the global bond with different parts having different durations as well as with different currency denomination.

### Box 35.1: AT&T Closes $10 Billion Global Bond Offering.

**Date:** Wednesday, November 21 2001  
**Source:** [www.allbusiness.com/banking-finance/financial.../6189802-1.html](http://www.allbusiness.com/banking-finance/financial.../6189802-1.html)

AT&T today announced it has closed a $10 billion global bond offering, the second largest issuance by a United States corporation.

The company said the **offer will consist of five tranches:**  
- $1.5 billion in five-year notes;  
- $2.75 billion in ten-year notes;  
- $2.75 billion in 30-year notes;  
- 1.5 billion euros of two-year notes;  
- and 2 billion euros of five-year notes.

"We are very pleased with the strong investor interest in this offering," said Charles H. Noski, AT&T senior executive vice president and chief financial officer. "The success of this placement allows us to further strengthen our balance sheet and gain greater financial flexibility."

AT&T said it plans to use the proceeds from the offering primarily to retire short-term debt.

This transaction was lead-managed by Credit Suisse First Boston, Goldman, Sachs & Company and Salomon Smith Barney.

---

Box 35.1 lists the global bond offered by AT&T in 2001. It can be seen that AT&T is offering the global bond with different parts having different durations as well as with different currency denomination.

### 35.3 Eurobonds and Foreign Bonds:

#### Foreign Bonds:
Foreign bonds are issued with very interesting names. **Table 35.2** shows these names and country where these bonds are issued.

<table>
<thead>
<tr>
<th>Yankee Bonds</th>
<th>Foreign Bonds sold in U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samurai Bonds</td>
<td>Foreign Bonds sold in Japan.</td>
</tr>
<tr>
<td>Bulldog Bonds</td>
<td>Foreign Bonds sold in U.K.</td>
</tr>
<tr>
<td>Rembrandt Bond</td>
<td>Foreign Bonds sold in Netherland.</td>
</tr>
<tr>
<td>Matador Bond</td>
<td>Foreign Bonds sold in Spain.</td>
</tr>
</tbody>
</table>
Maple Bond: Foreign Bonds sold in Canada.
Kangaroo Bond: Foreign Bonds sold in Australia.

However it is to be noted here that all foreign bonds do not any country specific name associated with these. Many companies have issued foreign bonds in Hong Kong, but there is no specific name associated with foreign bonds issued in Hong Kong.

All foreign bonds have to be registered and have to abide by the rules and regulation of the foreign country where these bonds are issued. For example Yankee bonds (foreign bonds issued in U.S.) have to be registered with SEC of US and have to follow the same accounting and disclosure requirement of domestic bonds. In fact, these foreign bonds have to be like domestic bonds in all aspects. All foreign bonds are also rated by credit rating organizations. Though many-a-times, countries have done away with the rating requirement.

Among the foreign bond market, the Yankee bond and Samurai bond market attracts the maximum number of issuance. In early part of 2010, there has been lots of activity in the Samurai bond market. In February 2010, the Philippines Government raised Yen 100 Billion of Samurai Bond. In June 2010, the state-owned Korea Development Bank has sold Samurai bonds worth 27 billion yen.

Euro Bonds: Euro Bonds are issued in the offshore market and not governed by any specific country rules and regulation. Most of the Eurobonds are issued in Western European Countries, Middle East and Asian Countries. Most Eurobonds are issued in either USD or Euro. Eurobonds many not be rated. Hence issuers of the Eurobond must be reputed enough to attract investors.
With relative good rating, Eurobond market has fairly lesser number of defaults. But with the onset of major recessionary phase in 2008, many Eurobonds issuers have defaulted.
### 35.1 Bond Features Variations:

To make a bond attractive to issuers of these bonds have issued bonds with wide variety of features. Some of these features are discussed in this section.

**Fixed Coupon Bond:** In a fixed coupon bond, the issuer announces a fixed coupon rate to be paid during the life of the bond. Fixed coupon bonds are normally associated with shorter duration bonds.

Fluctuation in interest rate may make fixed coupon bond more attractive to the investors of the bond issuers. For example, a company issues a bond with 15 year maturity at 8% per annum interest rate. After 4 years of the issue, prevailing interest rate has gone down to 6%. In other words, after 4 years, the company will be able to raise 11 year maturity bond at 6%. But it has pay now 8%. The company is incurring loss. The company can issue bond and raise capital and retire the old bond, but there is cost and time associated with it. Similarly if the interest rate has gone up to 11%, the investors are losing out. Hence neither the issuer nor the investors would prefer to issue a long maturity fixed coupon bond. Such bond normally come with **call or put provisions**. Call and put provisions allow the issuer or investors respectively to retire the bond prematurely.

**Floating Coupon Bond:** In a floating coupon bond, the interest rate is pegged to some benchmark rate. Benchmark Rate is market determined interest rate which varies from time to time. The most popular floating rate benchmark is the LIBOR rates calculated by British Banker’s Association (BBA). Detailed LIBOR calculation methodology is given in **Annexure 35.1**. Now let us take an example how the floating rate bond coupon payment works. On 20th February 2010, a company issues 10 year Euro Sterling bond with coupon rate as Libor (Pound Sterling) + 150 bp payable semiannually. A basis point is nothing but 0.01%. Hence 150 basis point is 1.50%. The applicable Libor rate is the 1-year pound Sterling rate prevailing one week before the coupon payment date. Each bond has £10,000 as face value. The coupon payment dates are 20th August and 20th February each year.
Suppose on 13th August 2010, 1-Year Libor Pound Sterling rate is 3.75%. With this 1.50% to be added. So the coupon rate for Feb-August 2010 is 5.25%. Suppose on 13th February 2011, 1-Year Libor Pound Sterling rate is 3.10%. The coupon rate for August 2010- February 2011 is going to be 4.6%. Hence depending on the movement of the benchmark rate, the coupon rate varies from period to period.

But what happens if 1-Year Libor Pound Sterling rate increases to 8% or goes down 0.15%. In the former case, the company will bleed and in the later case investor will lose out. To avoid such extreme situations, companies normally come out a **floor and cap rate**. Even if the Libor increases to a higher rate, the maximum coupon payment will have a cap. Similarly, even though Libor goes down substantially, the investors will receive the floor rate. In other words, **cap rate is the maximum rate paid the issuer. Floor rate is the lowest rate received by the investors.**

All these bond covenants are clearly spelt out in the bond-issue prospectus so that the investors make an informed judgment about the investment.

**Zero Coupon Bond:** A company may issue zero coupon bonds to international investors. In a zero coupon bond, bonds are issued at a discount to the face value and when investors sale these bonds or at maturity, they receive a higher amount.

**Convertible bond:** A convertible bond behaves like plain vanilla fixed coupon bond for the some part of the bond and then gets converted to company’s shares or ADRs/GDRs. Many Indian companies have issued **FCCBs (Foreign currency convertible bonds)** which are discussed in detail in the next section.

**Dual Currency Bonds:** In a dual currency bond, the principal and coupon rate denominated in two different currencies. Dual currency bonds are different from the dual trench Eurobonds issued. In a dual trench bond issue, a company simultaneously offers bonds in two different currencies, let us say, USD and Yen. But interest and principal is denominated in a single currency (both in USD or YEN) unlike dual currency bond.

There can be many variants to these bond issues. Companies put together different bond features so as to attract different international investors with varied requirements and different regulatory and tax structure.
1. Bonds that are sold in a foreign country and are denominated in that foreign country currency is known as
   a. Foreign bonds.
   b. Eurobonds.
   c. Domestic bonds
   d. All of these.

2. Bonds sold foreign country and are denominated in a currency other than that of the country in which they are sold are known as
   a. Foreign bonds.
   b. Eurobonds.
   c. Eurocurrencies.
   d. Eurodollars.

3. Call & Put Provision on bonds are there
   a. Change the coupon rate at a later date
   b. Change the maturity of the bond at a later date
   c. Change the face value of the bond at a later rate.
   d. Change the maturity of the bond at a later date.

4. Match the following foreign bonds with the country where these are issued.
   a. Yankee Bonds i. Netherland
   b. Samurai Bonds ii. Canada
   c. Bulldog Bonds iii. U.K.
   d. Rembrandt Bond iv. Spain
   e. Matador Bond v. US
   f. Maple Bond vi. Australia
   g. Kangaroo Bond vii. Japan
1. What are the main difference between Eurobond and Foreign Bonds?
2. Explain how the coupon rate is calculated for floating rate bond.
3. Better the bond rating, lesser is the coupon rate associated with the bond. How this aspect is taken care when companies issue floating rate bonds pegged to say Libor?
4. Explain why many Indian Companies have faced serious trouble over FCCB issuance.
5. Compare and Contrast the features of India Development Bond (IDB), Resurgent India Bond (RIB), and India Millennium Deposit (IMD) issued by State Bank of India.
6. As per your understanding what aspects should be considered for rating a company’s bond issuance? How it will differ from rating a national government or sovereign rating.

**Answer to Multiple Choice Questions:**

1. A
2. B
3. D
4. (a,v)(b,vi) (c,iii) (d,i) (e,iv)(f,ii)(g, vi)


SBI MTN pierces India’s sovereign rating. Source: http://www.hindu.com/2004/12/07/stories/2004120705201700.htm
Annexure 35.1
LIBOR Calculation

Source: http://www.bbalibor.com/bba/jsp/polopoly.jsp?d=1627

Bbalibor stands for **London InterBank Offered Rate**. It is produced for ten currencies with 15 maturities quoted for each, ranging from overnight to 12 Months producing 150 rates each business day.

Bbalibor is a benchmark; giving an indication of the average rate a leading bank, for a given currency, can obtain unsecured funding for a given period in a given currency. It therefore represents the lowest real-world cost of unsecured funding in the London market.

Individual Bbalibor rates are the end product of a calculation based upon submissions from a panel, made up of the largest, most active banks in each currency Bbalibor is quoted for.

**Definition:** The key concept is that Bbalibor is based upon the offered rate, and not the bid rate. Every contributor bank is asked to base their Bbalibor submissions on the following question; “At what rate could you borrow funds, were you to do so by asking for and then accepting inter-bank offers in a reasonable market size just prior to 11 am?” Therefore, submissions are based upon the lowest perceived rate that a bank on a certain currency panel could go into the inter-bank money market and obtain sizable funding, for a given maturity.

The rates are not based on actual transaction, indeed it would not be possible to create the suite of Bbalibor rates if this was a requirement, as not all banks will require funds in marketable size each day in each of the currencies and maturities they quote. However, this does not mean the rates do not reflect true cost of interbank funding. A bank will know what its credit and liquidity risk profile is from rates at which it has dealt, and can construct a curve to predict accurately the correct rate for currencies or maturities in which it has not been active.

“Reasonable market size” is intentionally left loosely defined. This is because it would have to be constantly monitored, and in the current conditions it would have to be changed almost daily, certainly every week, and would vary between currencies, maturities and even contributors. This would lead to a great deal of confusion.

The current definition became the standard after a review in 1998 where previous submissions from panel members were based upon the following: “At what rate do you think interbank term deposits will be offered by one prime bank to another prime bank for a reasonable market size today at 11am?” The new definition enables accountability for the rates.
All Bbalibor fixes are quoted as an annualised interest rate. This is a market convention. So, as an example, if an overnight sterling rate from a contributor bank is given as 2.00000%, that does not mean that a contributing bank would expect to pay 2% of the value of an overnight loan in interest. Instead, it means that it would expect to pay 2% divided by 365.

**What is Bbalibor used for?** Bbalibor is the primary benchmark for short term interest rates globally. It is used as a barometer to measure strain in money markets and often as a gauge of the market’s expectation of future central bank interest rates. Independent research indicates that around $350 trillion of swaps and $10 trillion of loans are indexed to bbalibor. It is the basis for settlement of interest rate contracts on many of the world’s major futures and options exchanges. It is written into standard derivative and loan documentation such as the ISDA terms. It is also used for an increasing range of retail products, such as mortgages and college loans.

**Selection of Contributors:** Contributor banks are selected for currency panels with the aim of reflecting the balance of the market for a given currency based upon three guiding principles:

1. scale of market activity
2. credit rating
3. perceived expertise in the currency concerned.

Each Panel for the 10 currencies, ranging from 8 to 16 contributors, is chosen by the independent Foreign Exchange and Money Markets Committee (FX & MM Committee) to give the best representation of activity within the London money market for a particular currency. Therefore, with all due to consideration to current economic situations, bbalibor submissions from panel members will be on average the lowest interbank unsecured loan offers within the money market that are on offer.

Every year the FX & MM Committee undertakes an assessment of each panel, based upon a review by the BBA of the contributors. The review re-evaluates each bank by ranking them according to their total money market and swaps activity over the previous year and selecting the banks with the largest scale of activity with due concern given to the other 2 criteria. The review is not limited to contributors as any Banks can submit themselves to the evaluation process for any currency.
**Calculation:** Thomson Reuters are our designated calculation agent. They audit data submitted by panel banks and create the rates using the definitions provided by the FX & MM Committee, and they do so under the supervision of BBA.

Each cash desk in a contributor bank has a Thomson Reuters application installed. Each morning between 11.00 and 11.20 an individual at each bank, typically the currency dealer, takes their own rates for the day and inputs them into this, which links directly to the fixings team at Thomson Reuters. Banks cannot see each others’ rates as they submit, only after final publication. Thomson Reuters run a barrage of automated and manual tests on the submitted rates before they are sent to the calculation engine. After calculation the data is released to the market, via Thomson Reuters and nine other data vendors.

Every Bbalibor rate produced by Thomson Reuters is calculated by the same method, using a trimmed arithmetic mean. Once Thomson Reuters receive each contributor submissions they rank them in descending order and then drop the top and bottom quartiles – this is the trimming. The middle two quartiles reflecting 50% of the quotes are then averaged to create a Bbalibor quote. This is repeated for every currency and maturity resulting in 150 rates produced every business day.

Please see the below example for a US dollar quote for one maturity.

<table>
<thead>
<tr>
<th>Bank</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barclays Bank plc</td>
<td>2.15</td>
</tr>
<tr>
<td>Bank of Tokyo-Mitsubishi UFJ Ltd</td>
<td>2.15</td>
</tr>
<tr>
<td>HSBC</td>
<td>2.12</td>
</tr>
<tr>
<td>Royal Bank of Scotland Group</td>
<td>2.11</td>
</tr>
<tr>
<td>UBS AG</td>
<td>2.105</td>
</tr>
<tr>
<td>Abbey National</td>
<td>2.1</td>
</tr>
<tr>
<td>Bank of America</td>
<td>2.1</td>
</tr>
<tr>
<td>Citibank NA</td>
<td>2.1</td>
</tr>
<tr>
<td>Mizuho Corporate Bank</td>
<td>2.1</td>
</tr>
<tr>
<td>Rabobank</td>
<td>2.1</td>
</tr>
<tr>
<td>Royal Bank of Canada</td>
<td>2.1</td>
</tr>
<tr>
<td>WestLB AG</td>
<td>2.1</td>
</tr>
<tr>
<td>BNP Paribas</td>
<td>2.05</td>
</tr>
<tr>
<td>Lloyds Banking Group</td>
<td>2.1</td>
</tr>
<tr>
<td>Deutsche Bank AG</td>
<td>1.95</td>
</tr>
<tr>
<td>JP Morgan Chase</td>
<td>1.95</td>
</tr>
</tbody>
</table>

\[
\text{Bbalibor Rate} = \frac{2.15 + 2.105}{2} = 2.10063
\]

The decision to drop the bottom and top quartiles in the calculation was taking to increase the accuracy of Bbalibor quotes. As previously described, Bbalibor is a benchmark and including outliers for any given reason will not reflect a market rate. By dropping outliers it is out of the control of any individual panel contributor to influence the calculation and affect the Bbalibor quote.
**Inception of Bbalibor:** Bbalibor was first developed in the 1980s as demand grew for an accurate measure of the real rate at which banks would lend money to each other. This became increasingly important as London's status grew as an international financial centre. More than 20 per cent of all international bank lending and more than 30 per cent of all foreign exchange transactions now take place in London.

In 1984 UK banks asked the BBA to develop a calculation that could be used as an impartial basis for calculating interest on syndicated loans. This led to the creation of “BBAIRS” – the BBA Interest Rate Settlement in 1985, which in 1986 became Bbalibor. The objectivity and accuracy of the rates allowed derivatives to be created based on the data as a reference, and this has flourished to become an enormously successful cornerstone of business transacted in the City and worldwide.