Swapskills Pte Ltd

Debt Instruments

Rates

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Corporations pursuing short term projects and long term growth have a constant need for short term and long term funding. They typically achieve this through the following ways—

Equity Funding: They may fund themselves by issuing new shares of common stock to equity investors. This allows investors to piggyback on the company's growth in expectation of cash dividends or a long term increase in the valuation of the company's equity.

Debt Funding: They may also fund themselves by issuing short and long term debt instruments. These are loan agreements of sorts by means of which corporations borrow money and compensate investors with a interest over the term of the investment and a return of principal and interest at maturity.

Hybrid Funding: A third type of funding for corporations is by issuing a class of paper that has both debt-like and equity-like features. They may be very junior debt, or equity with a fixed dividend payout plan for example.

Inside this issue:

Points of interest

- **Identify and understand every category of debt investment**
- **Take investor and issuer viewpoint on the same security and understand the circumstances when they may be of interest**

What determines an issuer's choice of funding method?

Given we saw three means to potentially source funding what might influence a treasurer's choice of one funding method over another? Here are some factors—

Cost of Funding

An organization would typically like to opt in for the source of funding that is the cheapest net of tax and underwriting fees. However sometimes cheaper funding may come at the expense of liquidity / immobility.

Existing Facilities with House Bank

The existing types of credit sources and investor base on prior issues may determine the cheapest funding source for a project. This is because overhead cost for a new issue may be lower owing to the prior relationship with a bank or lending house.

Underwriting Cost

An Investment bank which performs the activities of planning and issuing new securities, placing the paper in the capital markets and promoting trading liquidity in the secondary markets charges an underwriting cost as a percentage of the sum raised.

Shareholder interests

Any new capital raising activity will typically have to be approved by the company's board. Equity funding maybe preferred to limit leverage, while debt funding may be preferred so as to not dilute shareholding of existing equity investors.

Retaining Capital Structure

There maybe strict corporate policy on maximum leverage or the CFO may be working towards a target capital structure. In these circumstances taking on additional units of debt might be discouraged despite its cost advantages.

Tax Benefits

Interest payments on debt are tax deductible for a corporation. This may play a large part in considering a funding source.

Our focus for this module

Though 'Fixed Income' Securities were historically promises to pay a stream of semiannual payments for a given number of years and then repay the loan amount at the maturity date, the contract between the borrower and the lender however can be designed to have any kind of payment stream. This module will focus on debt instruments and their features.

Features of a Debt Security

Given our premise, we will base this module from the viewpoint of an issuer of a debt instrument trying to reach out to a potential investor. What are the variables or features of a debt security that if chosen correctly may help an issuer achieve his target level of funding?

Coupon

The Coupon is the Interest Payment Structure of the Debt Instrument.

Tenor

The period over which an issuer plans to amortize his debt. He will hence seek to reach out to an investor base who prefer investments of the specific timeframe.

Settlement Type

When amortizing principal ahead of time, this feature allows the issuer to either make a cash payment in excess of the interest payment, or deliver additional bonds to each investor.

Legal Wrapper

Once the features have been selected, an issuer may also choose to package the debt instrument as a note / bond / 144A security. This is based on the needs of the targeted investor base.

Revenue Streams

The issuer may also define where the revenue to pay out interest will come from i.e. projects / overall corporate revenues.

Seniority of Claims

The order in which investors get paid their interest and principal under the issue.

"Features maybe chosen in a combination to adequately fit the issuer's earnings prospects and target return on capital"

Redemption Provision

A Redemption Provision is a scheme that allows an issuer to prepay principal ahead of maturity. When outstanding principal under the funding line is reduced the interest paid upon principal decreases too which makes the means of funding cheaper for the issuer in the long term.

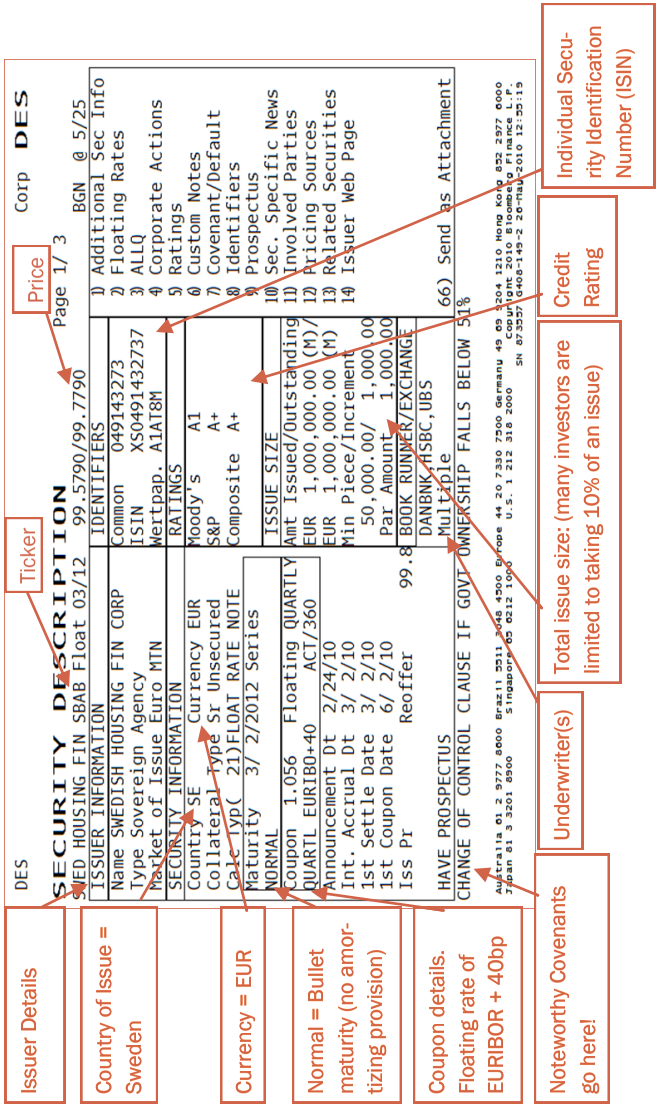
Covenants

Any further customization may be achieved by the use of covenants. Covenants are rules that investors and issuers are expected to adhere by over the term of the contract.

Credit Enhancement

Issuers may choose to have their instruments rated by a third party. This helps them appeal to a chosen class of investors and helps the instrument trade with higher liquidity.

Here is a screenshot of an on the run corporate bond issue from Bloomberg. Take a look at the features we mentioned—



Coupon

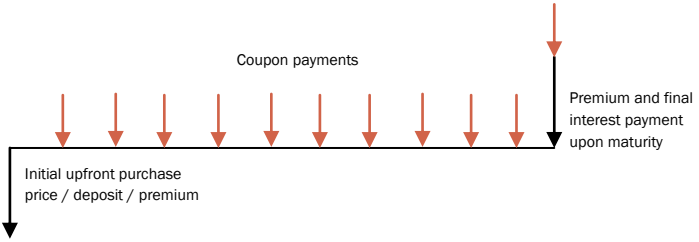
The coupon like we mentioned is the interest rate structure of the debt instrument. There are 3 constituents to a coupon -

1. The Interest Rate
2. The Day Count Convention
3. The Payment Frequency

1 Coupon Interest Rate

This may be a fixed rate (eg 3.5%), a floating rate (eg LIBOR + 2%) or a combination of a fixed and floating rate over the period of the bond. We will take a look at some examples very shortly but before that let's look at a graphic convention for understanding coupon structures—

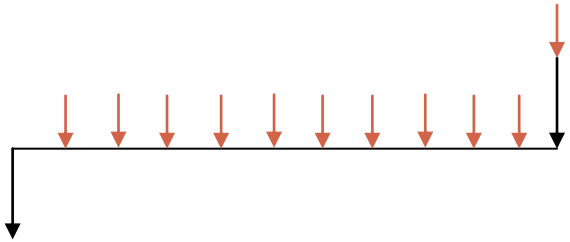
Here is a the timeline for a bond investment—



Let's take a look at some coupon structures using this convention. For each type of coupon structure we will also analyze a typical issuer and typical investor based on their asset and liability composition.

Fixed rate	*Floating rate*	*Inverse Floating Rate*
Capped Floating rate	*Floored Inverse Floater*	*Accrual*
Zero Coupon	*Step Up Coupon*	*Deferred Coupon*
Inflation Indexed	*Collared Floater*	

Fixed Rate Coupon (Eg. 2.5%)



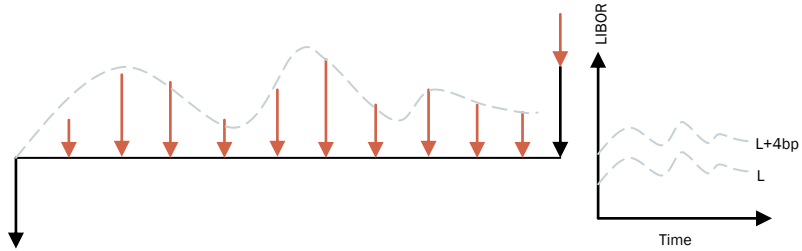
Typical Issuers

Typically Issued by Pension Funds and Insurance companies who have fixed rate assets and would like to match their funding costs with their assets.

Typical Investors

Investors prefer fixed rate bonds when they have a view that floating rate curve (typically LIBOR) is too steep, or when the economic cycle is in a declining stage and when equity linked investments come with greater risk and higher market volatilities.

Floating Rate Coupon (Eg. LIBOR + 4bp)



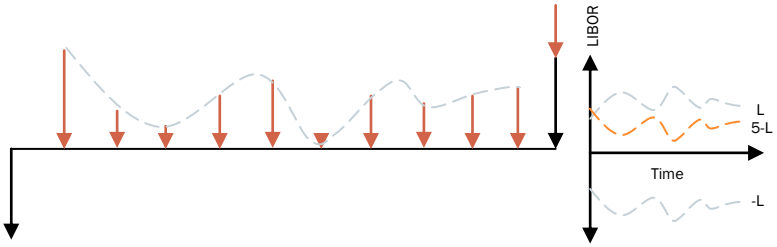
Typical Issuers

Auto loans, Mortgages, Educational Loans, Most commercial loans and loans in the Interbank market are linked to LIBOR. Issuers are typically banks.

Typical Investors

Typical investors who hold LIBOR linked loans and other securitized debt such as CDOs include banks, shadow banks, hedge funds, mutual funds and other financial institutions, who prefer exposure to a floating rate index to earn excess return for holding onto the interest rate exposure on the floating rate.

Inverse Floating Rate (Eg. 5% - LIBOR)



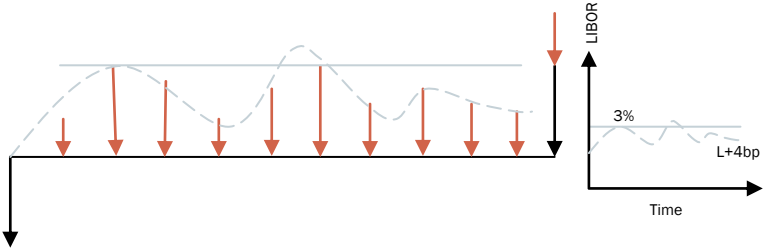
Typical Issuers

A typical issuer is one who believes that the yield curve is too flat. The CMO market is the largest issuer of inverse floaters. Almost all corporate inverse floaters are issued as structured notes, which mean that they are part of an underlying swap transaction.

Typical Investors

Typical investors are mutual funds, asset managers, pension plans, banks and financial institutions..

Capped Floating Rate Coupon (Eg. Min (LIBOR + 4bp,3%))



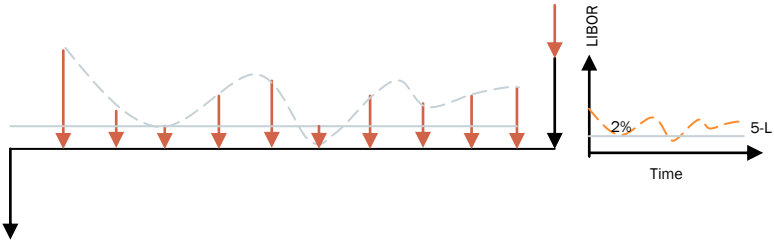
Typical Issuers

Typical issuers have a view that the LIBOR curve is too steep and would hence prefer to maintain a floating debt profile, but would like to cap their interest payments in case of adverse rises in the floating rate. They include corporates and financial institutions.

Typical Investors

This type of coupon structure foregoes making high payments when the floating rates increase. They can be found typically in structured notes and consist of a floating rate note and an embedded cap. Investors include corporate treasuries, banks and financial institutions.

Floored Inverse Floating Rate (Eg. Max(5% - LIBOR,2%))



Typical Issuers

When the floating index increases at the reset date such that the coupon is very low, the issuers are forced to ensure a minimum coupon under the embedded floor. Issuers could be corporates, commodity and agribusinesses and financial institutions.

Typical Investors

This type of coupon structure is popular in structured notes which consist of an inverse FRN and an embedded floor. Floor protects investors from low coupons and hence have a lower market risk attached to them. Investors include mutual fund bond portfolios, pension plans, insurers and banks.

Accrual Coupon

Typical Issuers

Popular in German corporates and sovereigns. Unlike a zero coupon bond, an accrual bond has a clearly stated coupon, except that it accrues and compounds as opposed to being paid. Since issuers do not have to make a payment until maturity they have greater flexibility with regards to the use of the funds (principal and interest).

Typical Investors

Accrual bonds do not pay a coupon and hence earn interest upon interest that gives them a greater yield at the expense of liquidity. This resembles a term deposit, which has limited liquidity but higher yields. Investors could be pension funds, corporates, Insurers who can forego immediate short and medium term liquidity on the investment.

Zero Coupon

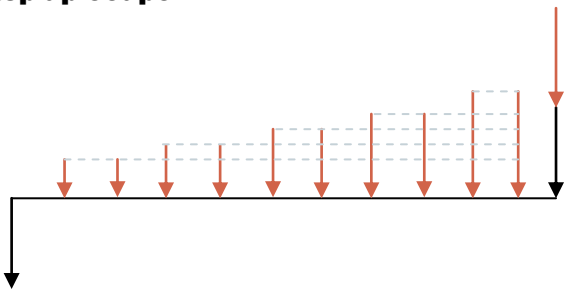
Typical Issuers

Zero coupon bonds do not pay periodic interest. They pay the par value at maturity and interest results from the fact that zero coupon bonds are initially sold at a price below par value. They are hence called pure discount securities. They are typically issued by sovereigns. US—Tbills, T notes and UK zero coupon Gilt strips are examples.

Typical Investors

Mutual funds and unit linked insurance policies use zero coupon bonds as a means of structuring a capital guarantee into an investment for investors. Banks use zero coupon bonds of varying maturity to guarantee minimum coupons on structured notes for fixed income investors.

Step up Coupon



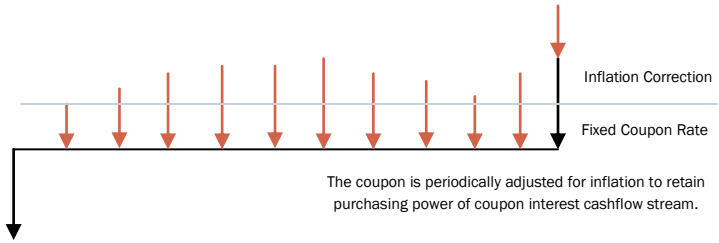
Typical Issuers

Step up coupon bonds pay a coupon rate which increases over the life of the bond. They are typically issued by corporates when funding a project with returns expected to be realized at increasing rates in different stages of the project.

Typical Investors

Mutual funds, unit trusts, insurance companies, private investors sometimes prefer a stepped coupon over a fixed rate when liquidity requirement in early stage of investment is low which effectively increases the yield.

Inflation Indexed Coupon



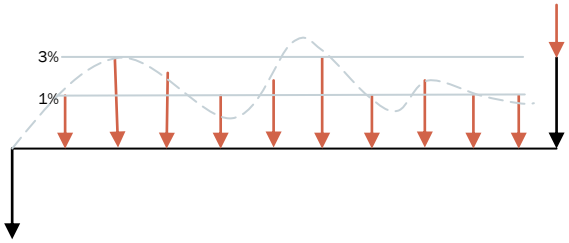
Typical Issuers

Issuers might include commodity and retail companies, as their sales prices depend to an extent on the level of inflation on the economy. Sovereign debt such as US TIPS (treasury inflation protected securities) are another example.

Typical Investors

Investors may include bond funds with mandates on maintaining real earnings expectations, corporates who seek a natural hedge to rising production costs in an inflationary setting.

Collared Floater (Eg. 1% (or) LIBOR + 4bp (or) 3%)



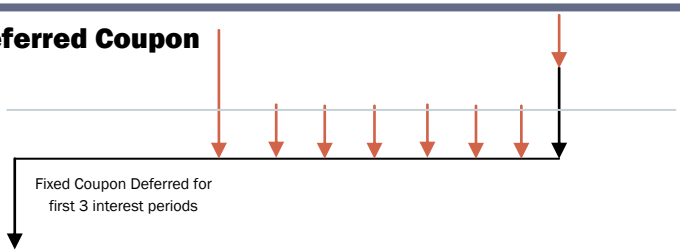
Typical Issuers

A typical issuer is one who would like to keep the level of the floating coupon payable between bounds. The issuer may be a corporate, who's risk management policy requires them to maintain floating rate exposure, but keep a certain proportion of their debt fixed / capped.

Typical Investors

Investors include typical investors in structured notes, namely bond funds, banks, hedge funds and financial institutions.

Deferred Coupon



Typical Issuers

The fixed coupon is deferred for a few interest periods before being paid. A typical issuer maybe a corporate, who is uncertain about their solvency in the short term, but are relatively more confident about their long term abilities to pay down debt. Project funding could also take a deferred coupon structure.

Typical Investors

Investors are those who can forego short term liquidity of funds in exchange for a higher yield. Also has tax advantages for the investor as interest income is zero in the early years and reduces the tax bill.

2 Day count convention

The second part of the coupon is the day count convention using which the rate is quoted. There are a few considerations that determine the chosen day count—

- This is typically decided by the jurisdiction where the issuer raises his funds and the tenor of funds (money basis v bond basis)
- An issuer might wish to match his liability servicing to his asset incomes.
- The issuer might like to raise debt to fund one of his subsidiaries and might choose to adopt their day count convention of their existing debt.
- It might be based on the standards adopted by the underwriter for the market / tenor.

There are 4 most popular day count conventions—

1. **Act/360:** The actual number of calendar days divided by a "year" of 360 days. Also known as "money market" basis
2. **Act/365:** Also referred to as Act/365 Fixed. The actual number of calendar days divided by a "year" of 365 days.
3. **30/360:** Same as 360/360, assuming that there are 12 calendar months each of 30 days and a "year" of 360 days.
4. **ACT/ACT:** The actual number of days for which coupon accrues / Actual Calendar days in the year.

3 Payment Frequencies

- The third part of the coupon is to decide how frequently you'd like to payout interest as an issuer—
- Corporates raising funding and doing their accounting on a quarterly basis for regulatory reporting, issue floating rate debt which pay **quarterly** coupons.
- US Treasury bonds typically pay **Semi Annual** 30/360 basis on their coupon.
- Retail borrowers who borrow for car loans, mortgage loans make **monthly** payments of interest and principal.
- Due to a large variety of payment frequencies that are popular in different markets, structured debt products combine coupon payments from a pool of debt products to design a note that has the desired credit quality and payment term.
- Securitization of auto loans, credit card receivables, and mortgages and federal agency mortgage passthrough securities into Collateralized Debt Obligations, can create different grades of debt paper with varying interest rate risk, reinvestment risk and maturity.

Tenors

The next consideration when issuing new debt is choosing the tenor. Long term capital requirements for a sovereign / corporate are funded using long term debt, while seasonal requirements are funded using short term facilities.

Based on tenors, the debt markets are classified into two broad categories—

A) **Money Markets:** The market for instruments with maturities < 1 year.

B) **Debt Capital Markets:** The market for debt instruments with maturities > 1 year.

We'll now take a look at examples of instruments in each of these markets—

Money Markets

The money markets provide short term liquidity funding for the global financial system. Here are some definitions of typical money market instruments / terminology—

Overnight Lending:

Throughout the course of a day, banks will transfer money to each other, to foreign banks, to large clients, and other counterparties on behalf of clients or on their own account. At the end of each working day, a bank may have a surplus or shortage of funds. Banks that have surplus funds may lend them to or deposit them with other banks, who borrow from them. The overnight rate is the amount paid to the bank lending the funds. In most countries, the central bank actively participates in the overnight market and publishes each month the overnight lending rate. It is the rate at which a select set of banks will lend to each other for an overnight tenor.

Commercial Paper:

Commercial paper is a short term, unsecured debt instrument used by corporations to borrow money at rates lower than bank rates. Commercial paper is issued with maturities of 270 days or less, since debt securities with such maturities are exempt from SEC registration. Most issues are in the 2-day to 90-day range. They are zero coupon / pure discount securities and can either be directly placed by the corporate treasury with investors or via a dealer (investment bank). They aren't traded on the secondary market but are rather held to maturity.

T-bills:

T bills are zero coupon bonds issued by the US Treasury with a maturity of less than one year. They have maturities of 28 days (4 weeks), 91 days (3 month) and 182 days (6 months).

Cash management bills:

Temporarily US Treasury also issues cash management bills with maturities ranging from a few days to 6 months, to help overcome temporary cash shortages prior to quarterly receipt of tax payments.

Federal Funds:

Fed funds overnight lending refers to the borrowing and lending of funds by banks to maintain their daily bank reserves with the Federal Reserve. The rate at which this is done is called the "Fed Funds rate" and those banks with excess reserves may lend to those with deficits at this rate. This is an uncollateralized, unsecured interbank loan.

Banker's Acceptances:

Banker's Acceptances are essentially guarantees by banks that a loan will be repaid. They are created as a part of commercial international trade transactions. An importer agrees to pay an exporter say 30 days after shipment is dispatched. The importer first get a letter of credit from his bank stating that the bank will guarantee payment if the importer defaults. This is then set to the exporter's bank. The exporter then ships the goods and delivers the shipping documents to his bank. The payment due in 30 days will be then advanced on a discounted basis to the exporter. Now the exporter's bank awaits the payment in 30 days from the importer's bank. The 2 banks can then originate a negotiable instrument that will pay in 30 days time. This is the banker's acceptance and can be traded in the secondary market by the exporter's bank for immediate delivery of funds.

Certificates of Deposit:

They are similar to bank deposits in that they are means in which banks borrow directly from customers. They represent a promise by the bank to repay principal plus a certain amount of interest at maturity. However they differ in that a customers are issued a negotiable certificate which may be traded in the secondary market. The rate paid on CDs is typically USD LIBOR.

Short Lived Mortgage Backed and Asset Backed Securities:

A mortgage backed security is a debt security where the collateral is the receivables from mortgage loans made by home loan government sponsored enterprises such as Freddie Mac and Fannie Mae. Similarly Asset Backed securities are debt securities backed by credit card debt, auto loans, bank loans and corporate receivables. These securities are created from the underlying asset pool via a process called securitization. When these debt instruments have a maturity of less than one year, they trade in the money markets too.

Debt Capital Markets

Treasury Bonds and Notes:

They pay semi annual 30/360 coupon interest at a rate fixed at issuance. T-Notes have a maturity of 2, 3, 5 and 10 years. Bonds have original maturities of 20 or 30 years. They are typically not callable

Treasury Inflation Protected Securities (TIPS):

TIPS make a semi annual coupon interest payments at a rate fixed at issuance. The par value however begins at $1000 and Is adjusted semi annually for changed in the Consumer Price index (CPI). If there is deflation (falling price levels), the adjusted par value is reduced for that period. The fixed coupon is paid as a percentage of this inflation adjusted par value. At maturity, the holder receives the maximum of the adjusted par value or $1000. TIPS notes have a maturity of 5 and 10 years, while TIPS bonds have a 20 year maturity.

Corporate Bonds:

These are bonds issued by corporations and have tenors ranging from 3 years to 20 years. They are issued and sold all at once, by and underwriting syndicate (consortium of banks typically) on a firm commitment basis whereby an underwriting syndicate guarantees the sale of the whole issue.

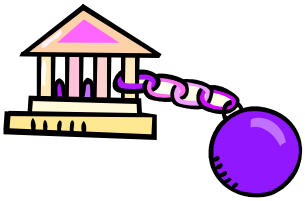
Structured Notes::

A structured note is a debt security created when the issuer combines a typical bond or note with a derivative (such as a cap / swap / floor). This is done to create a security that specially appeals to some institutional investors. Structured securities allows investors to obtain a desired tax structure, coupon rate and lower overall borrowing costs which would not be possible via other listed securities.

Collateralized Debt Obligations:

A collateralized debt obligation (CDO) is a debt instrument where the collateral for the promise to pay is an underlying pool of other debt obligations and even other CDOS. They underlying debt pool may comprise business loans, mortgages, emerging market bonds, corporate bonds of various ratings, asset backed securities or even non performing loans. The asset pool is then transferred onto the balance sheet of another legal entity called a Special Purpose Vehicle and bonds are issued of varying seniority (called tranches). Each tranche has its own principal and interest payment schedule and seniority of claims.

Collateralized Mortgage Obligations:

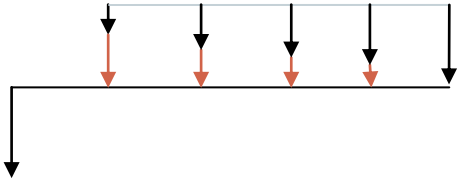


A CMO is much like a CDO except that the collateral pool comprises mortgage loans issued by Government Sponsored Enterprises like Freddie Mac and Fannie Mae.

Redemption Provisions

Redemption provisions for a bond refer to how, when and under what circumstances the principal will be repaid. When interest rates fall, the bond issuer can issue newer cheaper debt in the market and use the proceeds to pay down his earlier more expensive debt. This process of refinancing is a low rates environment is called “Refunding”. Principal may also be redeemed without refunding using a call provision.

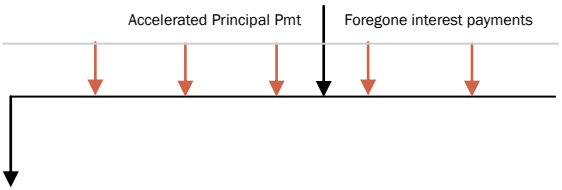
Amortizing Provision



Amortizing securities make periodic interest and principal payments over the life of the bond. A conventional mortgage is an example of an amortizing loan. Each payment consists of a periodic interest payment on the outstanding principal and a portion of the original outstanding principal. The final payment retires the outstanding principal. Other options include education loans and auto loans.

This potential for early principal repayment is propagated when other securities such as CMOs are derived from amortizing securities. However the amount of maximum prepayments can be controlled in each tranche by the tranching methods agreed under the securitization scheme.

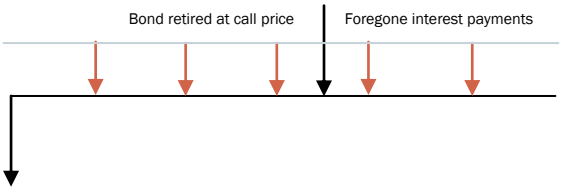
Prepayment Option



A prepayment option gives the issuer / borrower the right to accelerate principal payments on a loan. Auto loans, educational loans, credit card debt and mortgage loans typically have this option embedded in them. The borrower may pay back the loan in part or in full at any time. Further if the borrower were to sell the house or the car purchased under the loan, he has to payback the loan entirely.

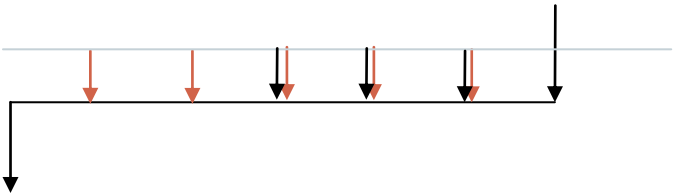
From an investor's perspective, a mortgage or a mortgage backed security comes with additional uncertainty about the cash flows to be received compared to a security that doesn't permit prepayment.

Call Provision



A call provision gives the issuer the right (but not the obligation) to retire all or part of the issue prior to maturity at a price agreed at initiation (called a call price). Callable bonds are typically issued in a bearish rates environment where the issuer would like to refinance in the future under prevailing lower rates. Typically callable bonds are issued with an agreement that the bond cannot be called for a few years after issuance. For example a 7NC3 bond would mean that it is a 7 year bond which is not callable for the first 3 years. This 3 year period is called a period of "call protection". Further, a bond may be called at par, or at a price above par to amount for the forgone coupon payments. The price at which a bond maybe called is specified in the bond indenture under a section called the "call schedule".

Sinking Fund Provision



A sinking fund provision in a bond allows for the repayment of principal through a series of payments over the lifetime of the issue. For example, if the issue is a 15 year bond issue and has a face value of 500 million, the sinking fund provision in the bond agreement might require that the issuer retire 50m of principal each year after the 4th year.

Accelerated Sinking Fund Provision

This is similar to a sinking fund provision but gives the issuer a choice to retire principal within a specified band. For example, the issuer may choose to retire anywhere between 50 million and 60 million each year after the 4th year of the bond issue.

Settlement Types

The next thing to consider when paying down principal under a bond is the type of settlement. Should the principal be retired in cash or assets?

Delivery of additional units

The issuer may purchase bonds with a total par value equal to the amount that is to be retired in the year in the market and deliver them to a trustee who will retire them.

Cash Settled

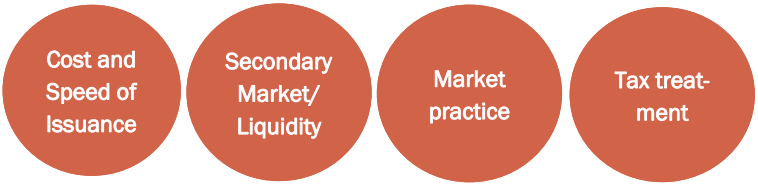
The issuer may deposit the required cash amount annually with the issue's trustee who will then retire the applicable proportion of bonds, by using a selection method. The bonds selected by the trustee are typically retired at par.

If bonds are trading below par -> It is cheaper to buy bonds in the open market and deliver them to retire principal -> Delivery is a less expensive settlement alternative.

If bonds are trading above par -> Cash settlement is preferred.

Legal Wrapper

A wrapper is the legal structure within which a product is issued. The following criteria are considered when choosing a wrapper:



The following section discusses some of the wrappers under which securities with debt like features are issued—

Wrapper	Advantages	Disadvantages
Over The Counter contracts (OTC) A bilateral contract usually confirmed under ISDA framework. Can be subject to collateral agreement.	Very Flexible Almost no payoff restriction Credit risk can be easily mitigated by collateral arrangements Low Costs	Not a security, not suited for distribution No public offering
Medium Term Notes / Certificates / Warrants An equity-linked security	A security whose settlement is very straightforward Allow for public offering Low Costs	Credit risk on the issuer (unless issuance vehicle is collateralized)
Funds A fund whose investment objective is to replicate a structured product payoff. Can bear a formal guarantee.	Investor friendly Allow for public offering Highly regulated (risk spreading rules, valuation) Can achieve eligibility to specific tax envelope	Administration costs Time to market
Life Insurance Policy A life insurance policy embedding a structured product.	Usually provides tax advantages under certain circumstances	Investment restrictions Administration costs
Structured Deposits A banking term deposit whose redemption amount at maturity is a structured product payoff.	User Friendly Time to market	Banking network only Not available in every jurisdiction
Islamic Wrappers Various types of legal envelope complying with Islamic Finance rules.	Open distribution to investors seeking Shari'ah compliant investments	Investment restrictions

A Note on Medium Term Notes

Medium Term Notes differ from a regular corporate bond offering, in that an MTN is registered under SEC Rule 415 (shelf registration) which means that they need not be sold all at once.

Once registered, such securities can be shelved and sold in lots. Typical maturities range from 18 months to 2 years. When issuers plan to sell the MTNs, provide the maturity ranges and the yield quotes as a spread to comparable maturity Treasury Issues. Investors interested in purchasing the notes make an offer to the issuer's agent, specifying the face value and an exact maturity within one of the offered ranges. The agent then executes the offering on a best-efforts basis.

MTNs can have a fixed or floating coupon, can have embedded caps, floors or collars, can be denominated in any currency, have equity or commodity linked coupons, or can be combined with other derivative instruments to create the special features that an investor requires. Hence they are truly structured solutions based on investor needs.

SEC Rule 415: A regulation that a corporation can evoke to comply with U.S. Securities and Exchange Commission (SEC) registration requirements for a new stock offering up to three years before doing the actual public offering. However, the corporation must still file the required annual and quarterly reports with the SEC.

In terms of SEC regulations, it is formally known as SEC Rule 415.

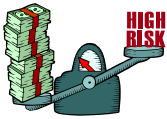
Why issue an MTN? Sometimes current market conditions are not favorable for a specific firm to issue a public offering. For example, suppose the housing market is heading toward a dramatic decline. In this case, it may not be a good time for a home builder to come out with its second offering, as many investors will be pessimistic about companies working in that sector. By using shelf registration, the firm can fulfill all registration-related procedures beforehand and go to market quickly when conditions become more favorable.

SEC Rule 144A

In the United States, securities to be offered to public investors must be registered with the SEC. When a new issue of debt securities is not registered for sale to the public, it still may be sold to a small number of investors. This is called a private placement or a Rule 144A offering. Avoidance of the costs of registration are very beneficial for the issuer. Additionally, these issues may be tailor made to the needs of the handful of investors who will purchase these securities.

Since there is a lack of liquidity in the case of private placements, yields are typically higher.

Risks and Covenants



In this next section we'll take a look at some of the key risks in investing in debt instruments and means to limit this risk.

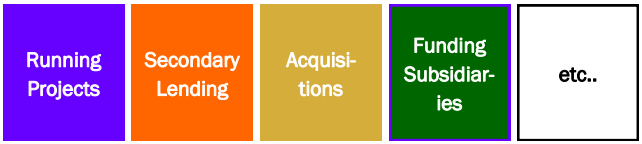
The Risk	*What it means?*	*Potential Protective Covenants*
Call Risk	Call risk is the possibility of being returned your principal on your investment when interest rates fall and the bond is called under a call provision. In periods of high volatility, interest rate fluctuations are higher and call risk is higher.	Structuring call protection Accurately priced Call schedules
Interest Rate Risk	Interest Rate Risk refers to the change in value of the instrument with changes in market interest rates. This measure of interest rate risk comes from yield volatility along the yield curve and is called duration.	Embedded caps / floors / collars, limit coupon volatility and lower duration. Hedging using Interest Rate Swaps.

The Risk	*What it means?*	*Potential Protective Covenants*
Reinvestment Risk	When market rates fall, principal and interest receivable from debt securities must be reinvested at prevailing lower market rates.	Choose zero coupon bonds over coupon bonds if you are weary of reinvesting coupon at lower rates
Credit Risk	This is the risk that the creditworthiness of the issuer will deteriorate requiring a greater yield and hence lowering in value.	Hedge the risk using a Credit Default Swap. Covenants requiring maintaining key liquidity and solvency ratios at benchmark levels.
Liquidity Risk	This is the risk that if the liquidity in the issue becomes lower, the yield required will be higher and the value will fall. The bond may hence have to be sold at a significant discount to par.	Illiquid issues may be securitized together with a pool of highly liquid high grade securities and sold as a portfolio.
Exchange Rate Risk	This is the risk of the coupon currency depreciating with respect to the investors home currency. For example, the coupon of a T-note to a euro investor loses value if the USD were expected to depreciate versus the EUR.	Hedge the floating rate basis using a Cross Currency Basis Swap, or alter the payment currency using a Quanto Swap.
Sovereign Risk	This refers to a change in a government's ability or willingness to service debt. Governments may impose restrictions on the outflows of foreign exchange to service debt, or even observe a period of moratorium. A change in government may lead to refusal to repay debt incurred by a prior regime.	Covenant protection on treasury default is unheard of. However the credit derivatives markets can offer protection against default of emerging market sovereigns.

The Risk	*What it means?*	*Potential Protective Covenants*
Prepayment Risk	This is a major risk for amortizing securities. It is the risk prepayments will increase when rates fall which must be invested at lower rates. Prepayment risk increases with interest rate volatility.	Limiting the amount of principal that can be retired under a sinking fund provision per year. Securitizing debt into Collateralized Debt Obligations.
Inflation Risk	In a hyper inflationary environment, the value of a coupon / principal payment receivable into the future in terms of goods and services diminishes.	Inflation adjusted coupon such as in TIPS. Inflation linked note.
Yield Curve Risk	This is the change in value of the bond which occurs from changes in the shape of the yield curve.	Hedge your interest rate exposure at key points on the yield curve using FRAs or Eurodollar futures contracts.
Volatility Risk	This is the risk that the price of a fixed income instrument containing embedded options such as caps, floors and collars will change when the volatility on the underlying floating rate index changes.	Hedge your volatility risk at specific points on the yield curve using interest rate options.
Event Risk	This is the risk that an issuer will default due to factors outside the financial markets, such as natural disasters and corporate takeovers.	This risk is purely an operational risk. However covenants on safe working environments on project funding can help limit event risks.
Settlement Risk	This is the risk that the issuer becomes insolvent after coupon fixing date but before the coupon payment date. It could also come to mean a large devaluing of the coupon currency in this interim period of credit risk.	This risk is purely operational. Measuring and monitoring counterparty credit quality can help anticipate and provision for these risks.

Revenue Streams

A Corporation or a Government Body may borrow money for various reasons including—



As a result the revenue stream that eventually pays down the coupon and the premium to the holder of the debt instrument may be linked to one of the above mentioned activities. Here are some examples—

Corporate Debt

Corporate Debt is paid down using overall corporate net earnings. However short term facilities which fund specific corporate projects may have their interest payments linked to project revenues.

Sovereign Debt

The main source of cash to paydown sovereign debt is tax revenues of the state from corporate and personal taxation. Tax revenues grow in direct relation to the GDP.

Revenue Bonds

Revenue bonds are issued by the US Treasury or by municipalities and state councils. They are supported only through revenues generated by projects that are funded with the help of the original debt. Examples may be transport systems, housing projects, higher education, health care etc..

Munis (Municipal Bonds)

Munis are debt issued by state and local governments in the United States. They are issued serially i.e. the larger issue is split into smaller lot sizes of varying maturity and coupon. Their biggest value proposition to investors is that they are tax-exempt. The coupon interest rate is exempt from federal income taxes. Capital gains are still taxed however.

The general obligation (GO) of a local government is a debt paper that is backed by the full faith, credit and taxing power of the local government and they are supported by tax revenues of the state / local government.

Credit Enhancements

Credit Enhancements are means to improve the credit quality of a debt instrument. Some common means of credit enhancement are—

A) **Getting a Credit Rating**
Getting an independent verification of Credit quality by a rating agency helps improve the credit quality typically, and helps lower the yield at issuance.

B) **Collateralization**
Pledge assets such as personal property, financial assets and real estate against your inability to repay. The investor holds a lien on the pledged property, and can sell the property to satisfy the obligation of the borrower in the case of default.

C) **Guarantees**
Guarantees are a guarantee of performance of the issuer by a third party, who offers to pay the borrowers obligation in the case of delinquency of the borrower. They are typically issued by the parent company of the issuer.

D) **Letter of Credit**
Letters of Credit are guarantees by corporate banks that they will advance the funds and take on the risk against the borrower.

E) **Bond Insurance**
Can be obtained from bond insurance companies / commercial banks.

Credit Rating

A Credit Rating is an independent assessment of the borrower's solvency by a third party called a rating agency. The most popular rating agencies are Standard and Poor's, Moody's and Fitch Ratings. Since ratings reflect probability of default in the short term and long term, ratings estimates must be forward looking and estimate future earnings potential.

Exact definitions and criteria for assessments by each ratings agency for each type of instrument is available via their website. However a rough list of factors studied to determine ratings are as below—

Character of the Issuer • Quality of management, ability to adapt to change • Industry outlook and firm's strategy • Financial management and controls • Competitive Position, Regulatory environment, Union contracts / history. • Susceptibility to event and political risks
Capacity to repay • Overall Debt level of the firm • Past repayment history • Operating Cashflows • Other sources of liquidity (cash and assets)
Collateral Provided • Guarantees or obligations for the parent company • Value / quality of collateral pledge • Priority of claims
Covenants of the Debt Issue • Covenants on Interest Coverage • Covenants on Liquidity and Solvency Ratios • Covenants on Credit Lines • Seniority of claims on default

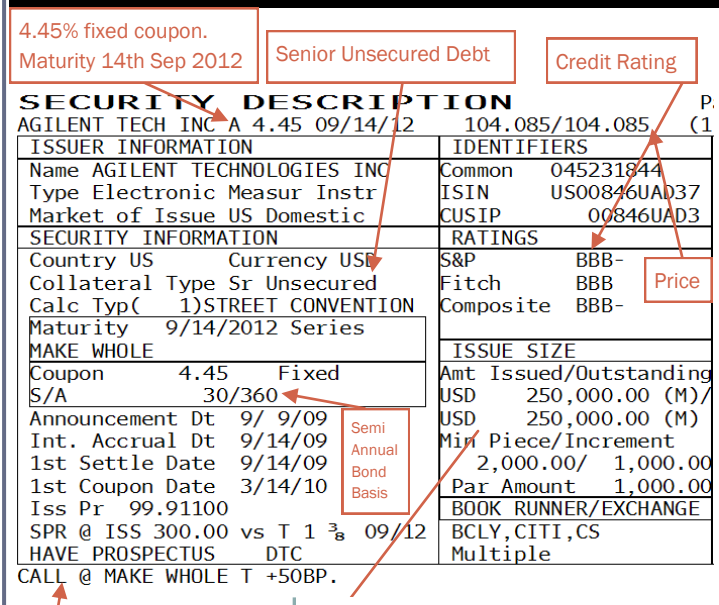
Pricing

The final feature in a debt security is the price. The price is largely determined by the choice of other parameters, and a suitable pricing band is determined for the issue. A bond issue is typically pre-sold prior to it's production, and an underwriter typically purchases several units from the issuer for distribution. They then suitable add a margin and redistribute the newly issued security in the secondary markets.

We will cover pricing in greater detail in another module on pricing debt instruments.

Glossary

#1: Agilent Corporate Fixed Rate Bond with Make whole call provision



Make Whole Provision is a type of call provision on a bond allowing the borrower to pay off remaining debt early. The borrower has to make a lump sum payment derived from a formula based on the net present value (NPV) of future coupon payments that will not be paid because of the call. Unlike a call price that's set at time of issue, the make whole provision allows early redemption for the issuer, however only at the market price or at a factor of the market price.

Issue size was $250 million and it was bought and sold as below—

Syndicate Page 1/ 1

9/ 9/09

AGILENT TECH INC A 4.45 09/14/12	104.085/104.085 (1.77/1.77)	Amount (M)
Joint Lead Managers-Books	Barclays Capital	65834.00
	Citigroup Global Markets Inc	65833.00
	Credit Suisse	65833.00
Co-Manager(s)	BNP Paribas Securities Corp	19375.00
	Goldman Sachs & Co	19375.00
	Standard Chartered Bank (US)	9375.00
	Utendahl Capital Partners LP	4375.00

Lead Manager is the bank / banks that run the book for the new issue. They are generally the banks who have a close relationship with the issuer and are highly subscribed to the issue.

Syndicate is a union / consortium of banks that comes together to arrange and lend the amount required by the issuer. They do so by purchasing a certain notional amount in the bond, which they then seek to distribute at a higher price to potential investors.

Co Manager is financial institution that participates in the bond issue that is not a lead manager. They may choose to use their balance sheet and pre-purchase units in the issue, or merely make a firm commitment to sell the issue on a best efforts basis (to the best of their abilities).

Pricing sources

This screen shows the pricing for the bond issue from various pricing sources.

Abbr	Firm Name	Bid Price / Ask Price	Bid Yield / Ask Yield	Bid Sz x Ask Sz (M)	Time
BVAL	BVAL	104.034 / 104.387	1.803 / 1.578	x	7:00
TRAC	FINRA - TRACE	104.085 / 104.085	1.771 / 1.771	x	2/18/2011
TRST	FINRA TRACE (<=1MM)	104.085 / 104.085	1.771 / 1.771	x	2/18/2011
TRMT	FINRA TRACE (>=250M)	104.085 / 104.085	1.771 / 1.771	x	2/18/2011

BVAL is the bid and offer price from Bloomberg's pricing methods.

TRACE is the prices derived from TRACE (Trade Reporting and Compliance Engine) engine monitored by FINRA

Trade Reporting and Compliance Engine is the FINRA developed vehicle that facilitates the mandatory reporting of over the counter secondary market transactions in eligible fixed income securities.

FINRA (Financial Industry Regulatory Authority) is the largest independent regulator for all securities firms doing business in the United States.

Credit Rating

This screen shows the short term and long term credit rating of the issuer from various rating agencies

Agilent Technologies Inc

BLOOMBERG *

1) Quantitative Issuer Rtng B3H

MOODY'S

2) Outlook STABLE
3) Issuer Rating WR
4) Long Term Rating Baa3
5) LT Corp Family Rating WR
6) Senior Unsecured Debt Baa3
7) Short Term WR
8) Probability of Default WR
9) Spec Grade Liquidity Rtg WR

NR = Not Rated; WR = Withdrawn Rating

STANDARD & POOR'S

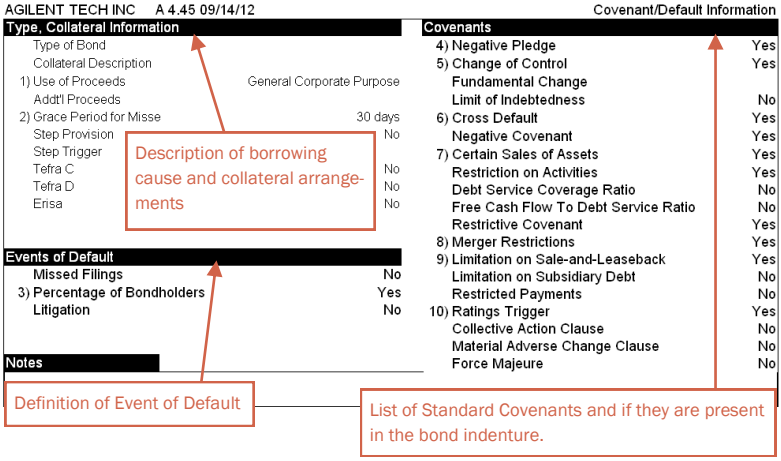
10) A 4.45 09/14/12 BBB-
11) Outlook STABLE
12) LT Foreign Issuer Credit BBB-
13) LT Local Issuer Credit BBB-
14) ST Foreign Issuer Credit NR
15) ST Local Issuer Credit NR

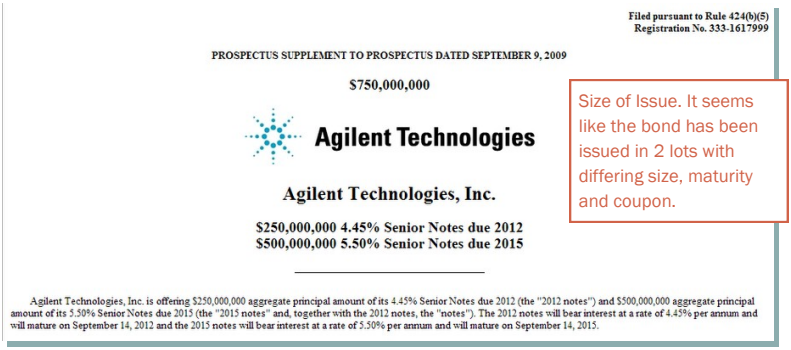
FITCH

16) A 4.45 09/14/12 BBB
17) Outlook POS
18) LT Issuer Default Rating BBB
19) Senior Unsecured Debt BBB

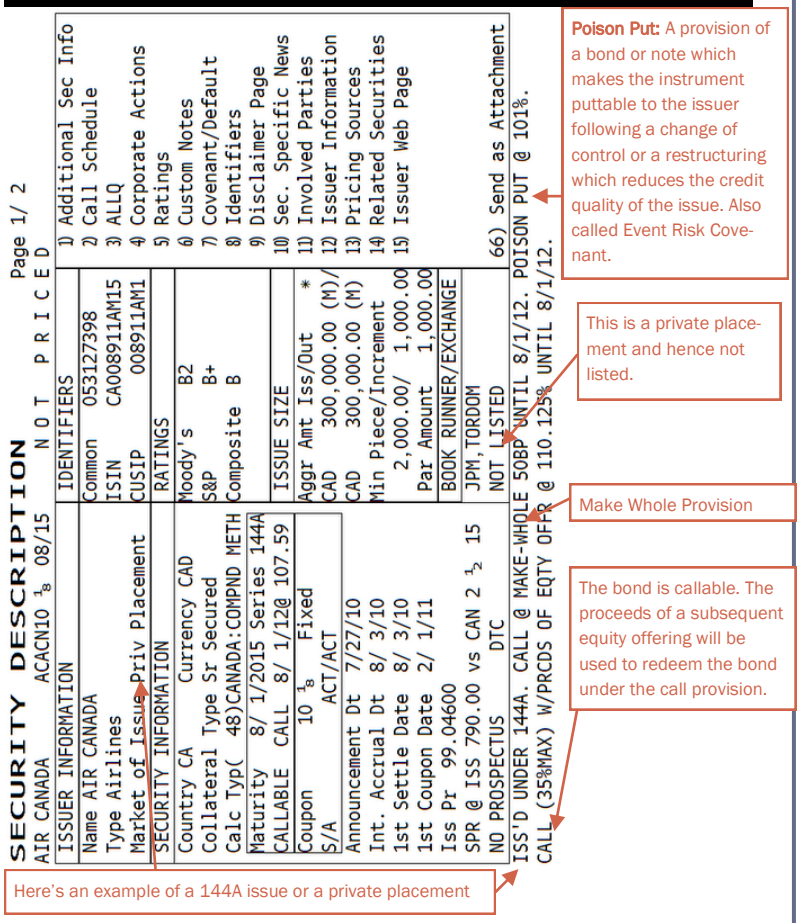
Covenants

This screen is a compilation of most popular covenants on a bond and if they exist for the issue in discussion.





#2: Air Canada 144A security



Here's an example of a 144A issue or a private placement

Poison Put: A provision of a bond or note which makes the instrument puttable to the issuer following a change of control or a restructuring which reduces the credit quality of the issue. Also called Event Risk Covenant.

This is a private placement and hence not listed.

Make Whole Provision

The bond is callable. The proceeds of a subsequent equity offering will be used to redeem the bond under the call provision.

#3: Asahi Breweries Callable, Puttable, Convertible Bond

```
SECURITY DESCRIPTION                                  Page 1/ 3
ASAHI BRERIES  ASABREO 05/23-11   100.673/101.173  (-2.56/-4.44) BGN  @ 2/21
 CONVERTIBLE INFORMATION          IDENTIFIERS          1) Additional Sec Info
 CONV TO        474.6084 SHARES   Common    036400455  2) Call Schedule
 PER  1000000.000 NOMINAL DP100%  ISIN      XS0364004555 3) Put Schedule
 2502   (JP  ) ¥1605   ( 23.00)   BB Number  EH3641733  4) Convertible Info.
 CONVERTIBLE UNTIL  5/12/23       RATINGS              5) ALLQ
 PARITY    76.17 PREMIUM    32.82 Moody's     NA       6) Corporate Actions
 ISSUER INFORMATION               Mikuni      WR       7) Cds Spreads/RED Info
Name  ASAHI BRERIES LTD           Composite   NA       8) Ratings
Market of Issue Euro Non-Dollar                       9) Custom Notes
 SECURITY INFORMATION             ISSUE SIZE           10) Covenant/Default
 Coupon      0       Zero Coupon  Amt Issued/Outstanding 11) Identifiers
 N/A           ISMA-30/360        JPY 35,000,000.00 (M)/ 12) Fees/Restrictions
 Maturity   5/26/2023 Series      JPY 35,000,000.00 (M)  13) Sec. Specific News
 CONV/PUT/CALL   5/29/11@ 100.00  Min Piece/Increment    14) Involved Parties
 Country JPN     Currency JPY       1,000,000/ 1,000,000 15) Issuer Information
 1st Coupon Date                  Par Amount  1,000,000  16) Pricing Sources
 Price @ Issue   100.5000         BOOK RUNNER/EXCHANGE   17) Related Securities
 Calc Typ (   1)STREET CONVENTION DAIWA,NOMURA           18) Issuer Web Page
 NO PROSPECTUS                    SGX-ST                 66) Send as Attachment
PRX/SHR=¥2,107. INIT CNV PREM=9.00%. OFFER PRX=103%. G'SHOE=¥5BLN EXER 5/08,
HOLDER MAY CONVERT SHRS IF PRX OF UNDRLY IS 125% OR OVER OF CONV PRICE.
```

Each $1m notional is convertible into 474.61 shares. This is called a conversion ratio. The convertible option has an expiry date too.

Conversion Parity: Conversion parity is a term used to describe the relationship of the stock price, multiplied by the conversion factor, to the bond price. For instance, if the bond is currently selling for $1,200 and can be converted into 10 shares of stock, and if the current stock price is $120, then the stock price and bond price are at parity. If the stock is selling for less than $120, then it is selling below parity, and if it is selling for more than $120, then the stock is selling above parity.

Call and Put schedule

```
ASAHI BRERIES  ASABREO 05/23-11   100.673/101.173  (-2.56/-4.44) BGN  @ 2/21
   CALL SCHEDULE
   CALL WITH        MIN   30 DAYS NOTICE                    Call Page  1/ 1


   **CALLABLE ON AND ANYTIME AFTER DATE(S) SHOWN**
    Date   Price            Date   Price            Date    Price
   5/29/11 100
```

```
ASAHI BRERIES  ASABREO 05/23-11   100.673/101.173  (-2.56/-4.44) BGN  @ 2/21
   PUT SCHEDULE
   DISCRETE PUT     MIN   30 DAYS NOTICE                    Put  Page  1/ 1



    Date   Price            Date   Price            Date    Price
   5/29/13 100
   5/29/18 100
```

Convertible Information

ASAHI BREWERIES ASABRE0 05/23-11 100.673/101.173 (-2.56/-4.44) BGN @ 2/21

CONVERTIBLE INFORMATION

		Yield
Next HARDCALL	5/29/11 @ 100.00	-4.44
Next SOFTCALL	NONE	
Next PUT	5/29/13 @ 100.00	-0.51
Yield to Maturity	5/26/23 @ 100.00	-0.10
Conversion Start Date	6/12/08	
FX		
Convertible by Holder		

HISTORICAL ANALYSIS ASABRE 0 05/26/23 ASAHI BREWERIES 2 / 19

From 2/22/10 to 2/21/11 D Daily Curr JPY

Bond T Trade Stock T Trade

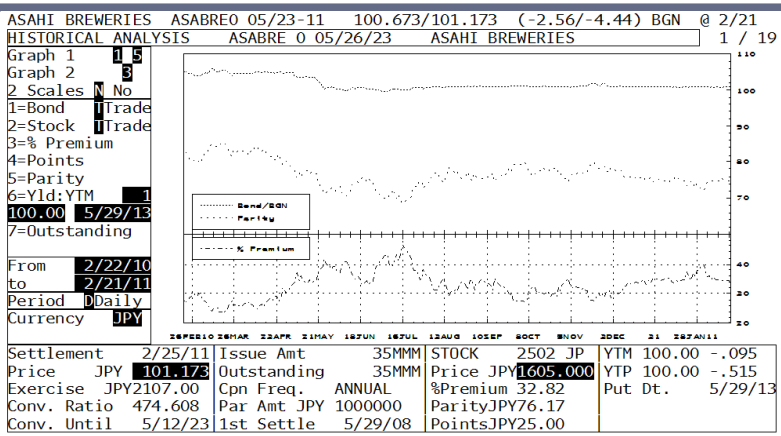
	JPY BOND	JPY STOCK	JPY PNTS	%PREMIUM	PARITY	YIELD	Outstanding
2/21	100.923	1605	24.75	32.49	76.17	-0.075	
2/18	100.848	1581	25.81	34.40	75.04	-0.069	
2/17	100.842	1580	25.85	34.48	74.99	-0.068	
2/16	100.836	1581	25.80	34.38	75.04	-0.068	
2/15	100.772	1582	25.69	34.21	75.08	-0.063	
2/14	100.698	1577	25.85	34.54	74.85	-0.057	
2/11	100.722					-0.059	
2/10	100.855	1576	26.06	34.84	74.80	-0.069	
2/ 9	100.777	1568	26.36	35.42	74.42	-0.063	
2/ 8	100.831	1576	26.03	34.80	74.80	-0.067	
2/ 7	100.723	1561	26.64	35.95	74.09	-0.059	
2/ 4	100.895	1566	26.57	35.75	74.32	-0.072	
2/ 3	100.852	1533	28.09	38.61	72.76	-0.069	
2/ 2	100.952	1522	28.72	39.75	72.24	-0.077	
2/ 1	100.898	1530	28.28	38.95	72.62	-0.073	

Historical analysis of price of convertible bond and price of stock in order to guide an investor towards an optimal exercise date.

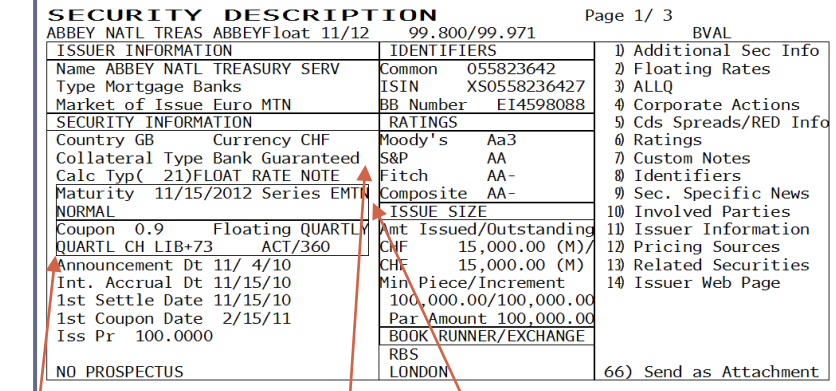
Conversion Premium: When the bond is first issued, the bond price is much higher than the conversion parity price. The difference between the bond price and the conversion parity price is the conversion premium (aka premium over conversion value).

Conversion Premium = Bond Price - (Stock Price x Conversion Ratio)

In other words, it is what can be earned, if the bond were converted into stock today and sold at the market price.



#4: Abbey National CHF Bond and related Credit Default Swap Spreads

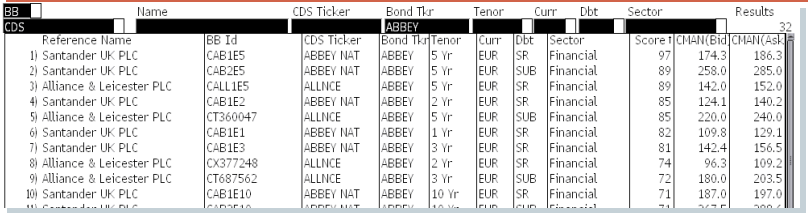


Quarterly Floating Coupon

Bank Guarantee

The Bond is part of an MTN issue

A CDS Monitor, that shows the Credit Default Swaps against Senior and Subordinated debt of different maturities of Abbey National. Note that the CDS protection is sold by the parent firms who own parts of Abbey National Namely Alliance and Leicester and Santander.



Reference Name	BB Id	CDS Ticker	Bond Tkr	Tenor	Curr	Dbt	Sector	Score	CMAN(Bid	CMAN(Ask
1) Santander UK PLC	CAB1E5	ABBEY NAT	ABBEY	5 Yr	EUR	SR	Financial	97	174.3	186.3
2) Santander UK PLC	CAB2E5	ABBEY NAT	ABBEY	5 Yr	EUR	SUB	Financial	89	258.0	285.0
3) Alliance & Leicester PLC	CALL1E5	ALLNCE	ABBEY	5 Yr	EUR	SR	Financial	89	142.0	152.0
4) Santander UK PLC	CAB1E2	ABBEY NAT	ABBEY	2 Yr	EUR	SR	Financial	85	124.1	140.2
5) Alliance & Leicester PLC	CT360047	ALLNCE	ABBEY	5 Yr	EUR	SUB	Financial	85	220.0	240.0
6) Santander UK PLC	CAB1E1	ABBEY NAT	ABBEY	1 Yr	EUR	SR	Financial	82	109.8	129.1
7) Santander UK PLC	CAB1E3	ABBEY NAT	ABBEY	3 Yr	EUR	SR	Financial	81	142.4	156.5
8) Alliance & Leicester PLC	CX377248	ALLNCE	ABBEY	2 Yr	EUR	SR	Financial	74	96.3	109.2
9) Alliance & Leicester PLC	CT687562	ALLNCE	ABBEY	3 Yr	EUR	SUB	Financial	72	180.0	203.5
10) Santander UK PLC	CAB1E10	ABBEY NAT	ABBEY	10 Yr	EUR	SR	Financial	71	187.0	197.0

#5: French Inflation Indexed Bond

```
SECURITY DESCRIPTION                                  Page 1/ 1
FRANCE O.A.T.I/L FRTR1.3 07/25/19  102.5400/102.7650  (0.98/0.96)
 ISSUER INFORMATION                 IDENTIFIERS                  1) Addit
 Name FRANCE (GOVT OF)              Common    048093884          2) ALLQ
 Type Sovereign                     ISIN      FR0010850032       3) Corpo
 Market of Issue Euro-Zone          BB Number    EI1126701       4) Cds S
 SECURITY INFORMATION               RATINGS                      5) Ratin
 Country FR       Currency EUR      Moody's     Aaa              6) Custo
 Collateral Type Bonds              Fitch       AAA              7) Ident
 Calc Typ( 864)FRANCE I/L:STREET    Composite   AAA              8) Sec.
 Maturity   7/25/2019 Series OATi                                9) Issue
 NORMAL                             ISSUE SIZE                   10) Prici
 Coupon       1.3     Fixed         Amt Issued/Outstanding       11) Relat
 ANNUAL         ACT/ACT             EUR  5,868,000.00 (M)/
 Announcement Dt  1/15/10           EUR  5,868,000.00 (M)
 Int. Accrual Dt  7/25/09           Min Piece/Increment
 1st Settle Date  1/26/10                 1.00/       1.00
 1st Coupon Date  7/25/10           Par Amount         1.00
 Iss Pr  99.01000                   BOOK RUNNER/EXCHANGE

 NO PROSPECTUS                      EURONEXT-PARIS               66) Send
RDMPTN & CPN LINKED TO FRCPXTOB <INDEX>. AVG YLD=1.41%.
```

Fixed Coupon but is adjusted and linked to the index specified which is the consumer price index for France. The real purchasing power of the coupon is hence retained. Note that the redemption amount is also adjusted for inflation rate upon redemption.

```
FRCPXTOB Index                                   Economic Indices Description
Name          France CPI Ex Tobacco
Category      Consumer Price Index   Ticker     FRCPXTOB Index   Source     INSEE National Statistics Office
Last Update   12/31/10               Latest     120.61           Quoted     Value / 1998=100
Frequency     Monthly                Update Status               Subject to one-month lag
Country       FRANCE                 Begins     01/31/90 Monthly
Currency      EURO

Description                                    4) Historical Chart
As of March 2005, there will no longer be a    Latest 120.61
Preliminary and Final CPI. These will be       Survey 120.63
replaced by a single CPI release, which                                          120
will appear mid-month and will not be                                            115
revised.                                                                         110
                                                                                 105
France - CPI Ex Tobacco - Level - Base                                           100
Year 1998=100. This index is the Consumer
Price Index Excluding Tobacco (All             2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2
households). This index is updated twice
per month, first with the Preliminary          5) More Indicators From This Category
figures and then again with the Final          6) More Indicators From This Source
figures. To see an index which only shows
 21) Description  22) Calendar  23) Related Indicators  24) Related News
```

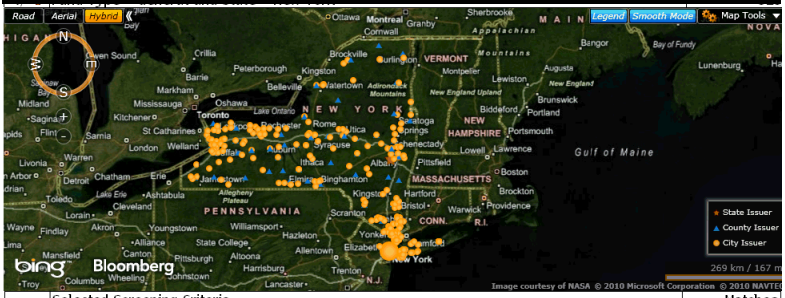
FRANCE O.A.T.I/L FRTR 1.3 7/25/19 FR0010850032

Corporate Actions Page 1/ 1

Effective Date	Announce Date	Action Type	Price	Yield	Amount (M)
10/21/10	10/15/10	Debt Offering/Increase	105.130	0.690	580000
9/16/10	9/16/10	Debt Offering/Increase		0.710	470000
7/15/10	7/ 9/10	Debt Offering/Increase	102.770	0.980	630000
3/18/10	3/12/10	Debt Offering/Increase	100.970	1.190	1215000
1/25/10	1/25/10	Debt Offering/Increase		1.410	319000
1/25/10	1/21/10	Debt Offering/Increase			319000
1/15/10	1/15/10	Debt Offering-New Issue	99.010	1.410	2570000

This screen shows the price, yield and notional of new debt issued / the amount an existing offering was increased by. The OATI is the euro version of inflation adjusted bonds and is comparable with TIPS of the USA or the inflation linked Gilts of the UK.

#6: MUNIS issued by the City of New York



Selected Screening Criteria — Matches

Fund Type = General and State = New York — 325

	Name	Type	Current Fiscal Year	Tot GF Rev	Net Chg Fd Bal	Tot Assets	GF Tot Liab	Total Operating Expenses
21)	City of New York NY	GEN	2010	62,470.58	5.14	23,350.49	22,908.34	58,885.81
22)	State of New York	GEN	2010	44,883.00	-594.00	13,620.00	17,158.00	54,129.00
23)	County of Suffolk NY	GEN	2009	1,696.33	-71.55	1,128.74	1,158.23	1,975.98
24)	County of Westchester NY	GEN	2009	1,692.33	-21.37	390.85	226.32	1,752.24
25)	County of Nassau NY	GEN	2009	1,626.80	-9.96	685.62	565.04	1,697.69
26)	County of Monroe NY	GEN	2009	1,186.66	7.31	278.75	272.51	1,126.96
27)	County of Erie NY	GEN	2009	957.53	43.65	316.15	214.31	1,186.46
28)	County of Onondaga NY	GEN	2009	700.95	3.95	192.21	117.55	654.43
29)	City of Yonkers NY	GEN	2009	588.99	-1.73	103.80	81.74	339.38
30)	County of Orange NY	GEN	2009	522.10	9.04	314.48	142.15	510.73
31)	County of Albany NY	GEN	2009	496.12	-7.75	130.55	93.30	468.26
32)	County of Rockland NY	GEN	2009	453.08	-10.98	194.38	182.11	442.68
33)	City of Buffalo NY	GEN	2009	446.80	5.30	363.91	225.31	412.17

The Munis issued by the City of new York are supported by revenues from the above counties that form a part of the city of new York. The monitor shows the counties on the map and also shows their financial account positions.

Page 1/3 Description
City of New York NY (5264Z US) BBGID BBG000BG3613

City of New York operates as a municipal corporation governed by the Mayor and the City Council in the State of New York. The City has five boroughs which are The Bronx, Brooklyn, Manhattan, Queens, and Staten Island. NYC has several components that, although legally separate, all provide services exclusively to the City and thus are reported as if they were part of the government.

City Hall	T:	212-639-9675	Industry	Municipal-City	
New York NY 10007	F:	212-312-0700	Domicile	UNITED STATES	
United States	Inc. Date		Incorporated	UNITED STATES	
			No. of Employees		
			As Of		

1) MGMT Management Profiles			Title		Start Date
2) Michael R Bloomberg			Mayor		01/01/2002
3) Christine C Quinn			Council Member		01/04/2006
4) Joel Rivera			Council Member		
Existing Home Sales (NY)	225.2 K	12/31/2010	Fiscal Year End	June	
Building Permits (NY)	2805.0	12/31/2010	9) Revenue	62,470.58M	
Unemployment (NY)	8.2 %	12/31/2010	10) Net Asset Chg	5.14M	
Nonfarm Employment (NY	8497.9 K	12/31/2010	11) Total Assets	23,350.49M	
14) Peer Issuers (RV)			Currency	USD 12) www.nyc.gov	
15) Demographics (DEMS)					

A closer look at the issuer, key people, key economic numbers, revenues and total assets.

#6: OESTERREICH VOLKSBANKEN Sinkable bond

SECURITY DESCRIPTION P

OESTER VOLKSBK AUSTVB4 06/17/19 92.4747/ 92.4747 (5

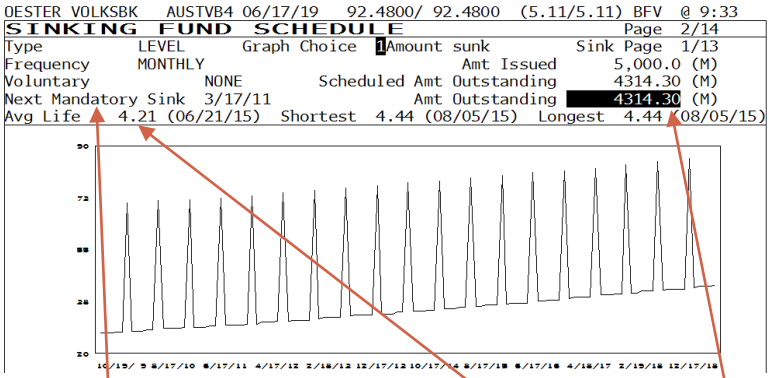
ISSUER INFORMATION	IDENTIFIERS
Name OESTERREICH VOLKSBANKEN	Common 042877859
Type Commer Banks Non-US	ISIN AT000B058391
Market of Issue Euro MTN	BB Number EH8195818
SECURITY INFORMATION	**RATINGS**
Country AT Currency EUR	Moody's Baa1
Collateral Type Sr Unsub	S&P NA
Calc Typ(1)STREET CONVENTION	Composite NR
Maturity 6/17/2019 Series EMTN	
SINKABLE	**ISSUE SIZE**
Coupon 4 Fixed	Amt Issued/Outstanding
MONTHLY ISMA-30/360	EUR 5,000.00 (M)/
Announcement Dt 5/ 6/09	EUR 4,314.30 (M)
Int. Accrual Dt 6/17/09	Min Piece/Increment
1st Settle Date 6/17/09	1,000.00/ 1,000.00
1st Coupon Date 7/17/09	Par Amount 862.86
Iss Pr 100.0000	**BOOK RUNNER/EXCHANGE**
	OEVAG
HAVE PROSPECTUS	VIENNA

FIXCASH 2009-2019. SERIES 184. TRANCHE 1.

The bond has a sinking fund provision by which principal may be retired ahead of maturity.

Most senior grade of Debt not subordinated to others.

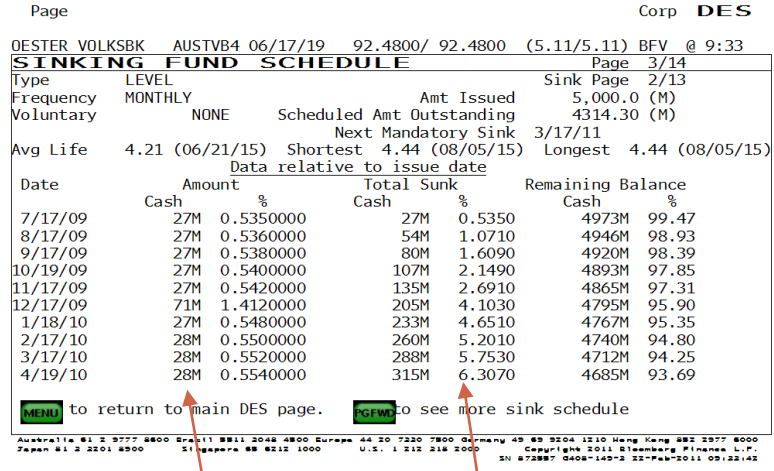
The ISMA bond basis day count convention as specified by the erstwhile Association of International Bond Dealers (AIBD)



The sinking fund schedule has a mandatory sink when the next principal payment will be made

Average maturity until which entire principal is retired.

Amount of principal yet to be retired.



This schedule shows the amount of principal that is to be retired on

The computed quantities beside represent the sink amount as a percentage of total principal and the remaining principal balance in dollar terms and as a percentage of total issue notional.

OESTER VOLKSBK AUSTVB4 06/17/19 92.4800/ 92.4800 (5.11/5.11) BFV @ 9:34

PRINCIPAL FACTOR HISTORY Page 1/ 5

Date	Factor	Date	Factor
6/17/09	1.000000000	6/17/10	0.917110000
7/17/09	0.994650000	7/19/10	0.911490000
8/17/09	0.989290000	8/17/10	0.905850000
9/17/09	0.983910000	9/17/10	0.900190000
10/19/09	0.978510000	10/18/10	0.894510000
11/17/09	0.973090000	11/17/10	0.888810000
12/17/09	0.958970000	12/17/10	0.874410000
1/18/10	0.953490000	1/17/11	0.868640000
2/17/10	0.947990000	2/17/11	0.862860000
3/17/10	0.942470000	3/17/11	0.857060000
4/19/10	0.936930000	4/18/11	0.851240000
5/17/10	0.931370000	5/17/11	0.845400000
		6/17/11	0.830860000

Since the maturity is only an estimate in the case of bond with a sinking fund provision, discount factors for the various potential payment dates are given in this screen in order to build your own scenarios for potential further analysis.

Try for yourself

Fill in the following blanks—

1. For a GBP denominated bond, money basis would imply a day count convention of _____.

2. Bonds issued by a government agency that purchases U.S. government securities to pledge as collateral for the bond issue are called _____.

3. A bond where the issuer has a right to retire a variable amount of principal in excess of a minimum and potentially within a bound, should contain a _____ provision.

4. _____risk is a type of cross-currency settlement risk that arises where the working hours of inter-bank fund transfer systems do not overlap due to time zone differences. In this situation, failure by one counterparty to settle its side of the deal starts a chain reaction of cross-defaults.

5. _____ bonds were dollar denominated bonds created in March 1989 in order to convert bank loans to mostly Latin American countries into a variety or "menu" of new bonds after many of those countries defaulted on their debt in the 1980s.

6. A _____ is registered under the SEC Rule 415 and hence need not be sold all at once, like a regular corporate bond offering.

Answers

1. Actual / 365

2. Prefunded Bonds

3. Accelerated Sinking Fund Provision

4. Herstatt

5. Brady

6. Medium Term Note (MTN)

Notes

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