**Chapter 7 Corporate Debt Instruments**

**Next:**

Chapter 7 – Corp Debt

Chapter 22 – Corp Credit Analysis

Chapter 32 – Credit Default Swaps

**Types of instruments**

1. Corporate Bonds
2. Medium Term Notes
3. Commercial Paper
4. Bank Loans
5. Convertible Corporate Bonds – Chapter 20
6. Asset-Backed Securities – Chapter 15

**Sectors**

* Public utilities: Electric, phone, gas, water
* Transportation: Airlines, railroads, trucking,
* Industrials: manufacturing, retail, energy, Service, Mining
* Banks/finance: banks, brokers, finance companies, insurance companies
* Yankee Bonds: dollar denominated bonds, issued by foreign entities in the US

**Credit risk**

* Investment grade: AAA to BBB
* Non-Investment grade: BB to D
	+ Original issue
	+ Fallen angel

**Seniority of Debt**

1. Senior Secured - backed by collateral
* Mortgage bonds: real property
* Collateral trust bond: backed by stocks, bonds, notes (holding companies)

Unsecured bonds are called ***Debentures***

1. Senior Unsecured
* Claim on any and all assets not Specifically pledged to other bonds
* Pledged assets with a value that exceeds secured debt

Subordinated debt A.k.a. “junior” debt

* After Senior Secured
* Senior Unsecured
* and General Creditors
1. Senior Subordinated
2. Subordinated

**Bankruptcy**

* Liquidation: Chapter 7
	+ Sell the assets
	+ Pay who is owed according to seniority
	+ Absolute priority rule
	+ Called the waterfall
* Reorganization: Chapter 11
	+ A new entity emerges from the court
	+ “Debtor in possession“
	+ Continues to operate
	+ Bankruptcy judge’s decision
* Absolute priority rule often not followed in reorg
* Some Junior holders will get paid even though senior holders did not get everything
* This is because all parties to a bankruptcy have a say in the re-organization
* Senior debt holders must “give some“ to Junior‘s to get buy-in

Bond Credit Ratings:

* S&P, Moody’s, Fitch
* AAA to D
* See Exhibit 7–1

“High Quality“ vs “High Yield”

**Credit Analysis Outline -** More detail in Chapter 22

1. **Analysis of Covenants**
* Listed in the bond contract – Called the bond “***Indenture***”
* Affirmative or positive
	+ Must do
	+ Maintain insurance
* Negative covenants
	+ Can’t do
	+ No new debt, Can’t sell assets
1. **Analysis of collateral**
* Liquidation value of assets
1. **Assess ability to pay**
	1. Business risk
	* Generate sufficient cash flow’s
	1. Governance risk
	* Board, Management
	1. Use of cash flow’s
	* Leverage - Debt equity mix

**Type of Corporate Debt Instruments**

* Corporate bonds
* Bond vs. Notes: Greater than 10 years, 10 years or less
* Distinguish these from Medium Term Notes (MTN)
* Discuss later in this chapter
* Paying a bond prior to maturity
* Call or Redemption: Buy back the bond
* Refunding: Selling new bonds to replace existing bonds
	+ Some bonds are non-callable
	+ Some bonds are nonrefundable
	+ Some bonds are nonrefundable, but otherwise Callable
		- Sell an asset or sell stock (restructuring)
* Call price can be at par or premium to par
	+ Call schedule: usually price declines as time passes
* Make Whole Call Provision
	+ Formula for determining the call price
	+ Discount future cash flows at a spread to maturity-match treasury
	+ Spread is usually smaller than spread at issuance
	+ You should get 100 basis points spread treasuries
	+ Make Whole is treasury plus 20 basis points
	+ Usually premium from small spread is enough to compensate holder for lost coupon revenue

**Make Whole Call Provision Example:**

* Corporate bond with a 6.00% coupon has exactly 10 years to maturity.
* Its YTM is 5.50%.
* The bond has a make-whole call provision that states that the bond can be called “priced to yield” **200 bps** over a *maturity-matched* Treasury.
* The yield on the ten-year Treasury is 2.36%.
* Calculate
1. The Current Spread to Treasuries
2. The Current Price
3. The Make-Whole call price
4. **The current spread to treasuries**

5.50% - 2.36% = 3.14% = 314 bps

1. **The current price**

NPER = 2 x 10 = 20;

RATE = **0.0550**/2 = 0.0275

PMT = 0.06/2 = 0.03

FV = 1

PV = 1.0381 🡺 Price = 103.81

1. **The Make-Whole call price**

NPER = 2 x 10 = 20;

RATE = (**0.0236 + 0.0200**)/2 = 0.0436/2 = 0.0218

PMT = 0.06/2 = 0.03

FV = 1

PV = 1.1318 🡺 113.18

Note the make-whole call price is a huge premium to the current price.

This is because the spread to treasuries is 314 bps, but he make-whole spread is 200 bps.

**Sinking fund provision**

* A requirement that of a portion of an issue be retired (called) each year
* Random bonds are called
* Mitigate credit risk

**High-Yield or Junk-Bond**

* Rated below BB
* Original Issue
* Fallen angel
	+ Altered capital structure – more debt
	+ Poor cash flow prospects

**Original issue**

* Used to finance a new unproven business
* With potentially – but still unproven, high stable cash flows
	+ Casinos, cable TV,…
	+ Private equity, LBOs

Take a company with this balance sheet and turn into this balance sheet

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Assets |  | Liabilities |  | Assets |  | Liabilities |
| 100 |  | 10 |  | 100 |  | 90 |
|  |  |  | 🡺 |  |  |  |
|  |  | Equity |  |  |  | Equity |
|  |  | 90 |  |  |  | 10 |

Then do a better job generating EBITDA from the assets you just bought

Sales

- COGS

- SG&A

EBITDA

Sales/Assets = Asset Turnover

EBITDA/Sales = Operating Margin

**Generate more cash from assets**

* Increase sales
* Decrease COGs, SG&A
* Can refund high-yield with high-grade

Practice promoted and expanded by Michael Milliken at DBL in the 80s

* Also tied to the S&L crisis
* S&Ls bought real estate junk bonds

**Special structures**

1. Deferred coupon
* Deferred interest payments
* Sell at a discount to par
* No coupons for three years to seven years
1. Step-up Bonds
* Low coupon at first
* Higher coupon later
1. Payment in kind (PIK)
* Issuer can pay cash or give more of the same kind of bond
1. Extendable reset bonds
* Coupon resets such that price equals 101.00 (usually 101)
* Reset once, each year, each period.…

**Calculating Accrued Interest for Corporate Bonds:**

30/360 Method (30/360 day count basis)

* Each month has 30 days
* 180 days per six months
* 360 days per year

Example:

**Go to spreadsheet**

**Corporate Bond Secondary Market**

Dealer market

* Very thin
* Some electronic market makers
* Usually quoted at a fixed spread to similar maturity treasury
* Price determined from Treasury plus spread

**Primary market**

* Underwritten by bankers
* Also private placement
* Through an investment bank

**Commercial Paper**

* Money Market Securities
* Short term (less than 270 days)
* $100,000 face value
* Zero coupon instrument

Usually bought and held to maturity

* Not a lot of secondary market trading
* This is because buyer can buy directly from seller so maturity can be negotiated

Less than 270 days, so no need for SEC registration

* Lower issue cost
* Most are less than 30 days
* Many are overnight

Borrower usually issues new paper to pay off maturing paper

* Called “rolling over“
* Lenders face **rollover** risk
* Borrowers face **refinancing** risk

Often backed by an unused bank credit line

* Increases all-in borrowing costs
* But still cheaper than borrowing from the bank

Go to a balance sheet

* Large amounts of short term debt over many years

CP market split into two categories

1. Financial and Non-financial
2. Financial includes captive finance companies, finance companies, bank related finance companies

**Go to Fred: Compare Financial to Non-financial CP**

**Credit ratings and Eligibility**

The Majority of CP is purchased by money market mutual funds

**Go to CP ratings - Exhibit 7-2**

Eligible paper is rated one or two by at least two rating agencies

* Tier 1: rated one by two agencies
* Tier 2: not Tier 1
* CP quotes and prices are same as the bills

**Medium Term Notes**

* Historically filled the gap between CP and corporate debt (medium term)
* But now MTNs are issued with many maturities
* Shelf registered and issued in small quantities
* Often to fill specific borrowing needs
* Generally a company offers a range of MTNs with maturity ranges and spreads to treasury

**Structured Notes**

* Subset of MTN:
* Combines and MTN and a derivative
* Create a bond with a coupon payment
* Linked to stock, stock index, commodity, currency…
* Available to entities restricted to owning only debt but want equity or commodity risk

**Bank Loans**

* Historically bank made (originated) loans and held them as assets
* Bank earned is spread equal to the loan rate less the deposit rate
* Now, banks earn money from initiating and servicing the loan
* Sells the loan, uses proceeds to lend again
* Earn more fees
* Loan is bought by entity that packages the loan into a CLO

Two categories of Bank Loans:

* Investment grade
* Non-investment grade (called ***leveraged loans***)

**Investment Grade Loans**

* Tend to originate from revolving Lines of Credit
* Customer pays a fee to the bank for the ability to borrow a certain amount at a certain rate within a certain period of time
* Called “Taking Down“ the Line of Credit
* Borrower can repay overtime - So no maturity
* Because of this banks tend to hold investment grade loan and not sell them

**Leverage loans**

* Usually has a set maturity and a payment/repayment schedule
* Floating rate: LIBOR plus spread or maybe Prime plus spread

**Go to FRED Prime vs LIBOR**

**Syndicated loans**

* Multiple banks lend the money
* Avoid concentration of assets by a single bank

**Levered Loan vs High-Yield Bond**

Bond:

* Fixed coupon
* Long maturity (usually 10 years)
* Non-callable for 3 to 5 years)

Loan:

* Floating rate (LIBOR plus)
* Shorter maturity (5 to 8 years)
* “Callable” at any time (really just pre-paying the long)

Loans are more senior than bonds

Loan covenants are usually more detailed and restrictive then bond covenants

**Collateralized Loan Obligations**

* Levered loans pooled in an SPV
* Claims are sold against the pool
* Called tranches
* Tranches are ranked according to payment priority
* Subordinate trenches receive higher interest rate
* If not enough payments from the collateral (the bonds) the support tranches don’t get paid

**Benefit is that corporate debt can be repackaged and resold**

* Using diversification and the waterfall
* Default risk can be re-distributed to those with an appetite

**Default Risk vs Credit Risk**

* Default: don’t get paid
* Credit risk: Credit spread widens for all bonds in a credit rating
* Downgrade risk: Credit spread wide is for a specific bond

**Credit rating**

* AAA to BBB
* BB and lower
* Measures probability of default
* As a function of expected cash flows relative to expected interest expense
* Ability to pay

**Default Rates**

* Exhibit 7-4

**Recovery rate**

* Default Loss Rate = Default Rate x (100 Recovery Rate)
* Default Rate = 5%
* Recovery Rate = 30% (so lose 70%)
* Default Loss Rate = 5% x (100%-30%) = 3.5%
* 5% default but only lose 3.5%

**Recovery is a function of seniority**

Two ways to measure recovery

* Post default price of the bond
* Exhibit 7-5
* Ultimate recoveries - Actual dollars received after bankruptcy resolution
* Exhibit 7-6

**Recovery Ratings**

* Provided by rating agencies (for a fee)
* Exhibit 7-7 and 7-8

**Downgrade Risk**

* Risk of moving from AAA to AAA and so on
* Exhibit 7-5 Hypothetical transition matrix

**Credit Spread Risk**

Go to **Fred Aaa Baa Spread to Treasuries**