

CDIAC

CALIFORNIA  
DEBT AND  
INVESTMENT  
ADVISORY  
COMMISSION

# THE PUBLIC INVESTMENT PORTFOLIO: MAKING SENSE OF CORPORATE NOTES AND BONDS

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# Disclaimer

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# INTRODUCTION

# Benefits Provided by Corporate Notes

5

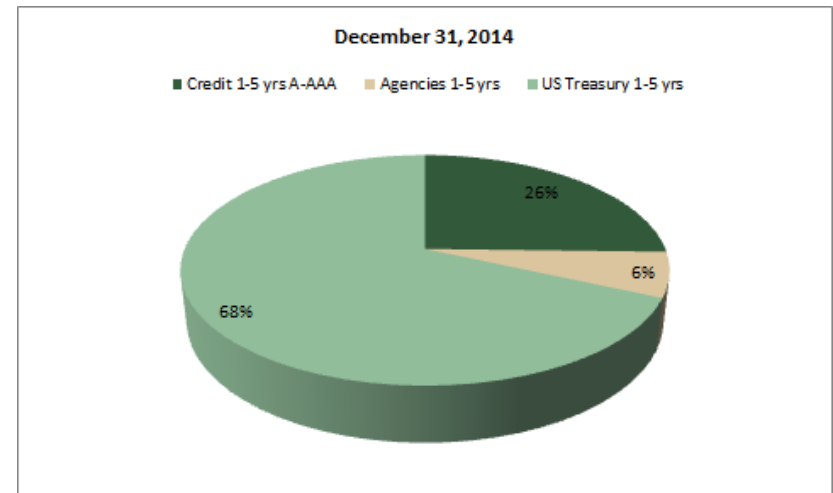
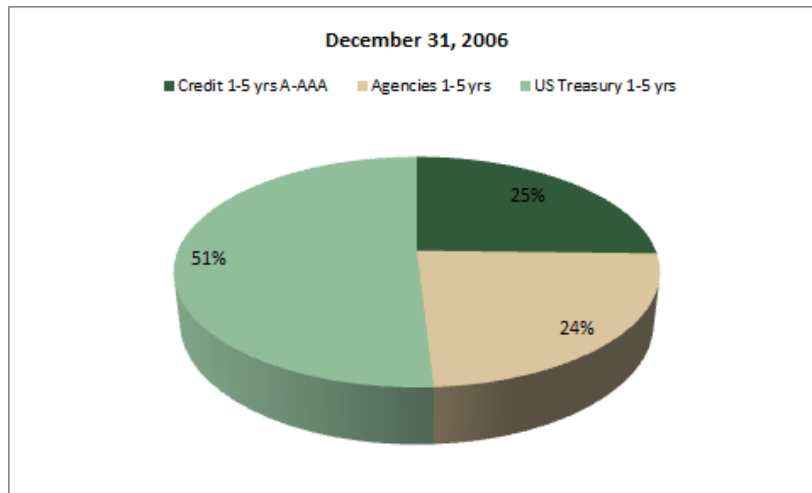
- Safety
  - ▣ Corporate notes have seniority in the capital structure
  - ▣ A diversified mix of corporate notes helps mitigate issuer risk and credit risk
- Liquidity
  - ▣ Corporate notes have a wide maturity range to help meet cash flow requirements
  - ▣ Corporate notes have an active secondary market
- Return
  - ▣ Corporate notes generally have attractive yields and returns over time relative to Treasury and Agency securities

# Corporate Notes As An Alternative to Agencies

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**Pre-Crisis Agency Sector was larger and more attractively priced**

**Post-Crisis Agency Sector has contracted and valuation is less attractive**

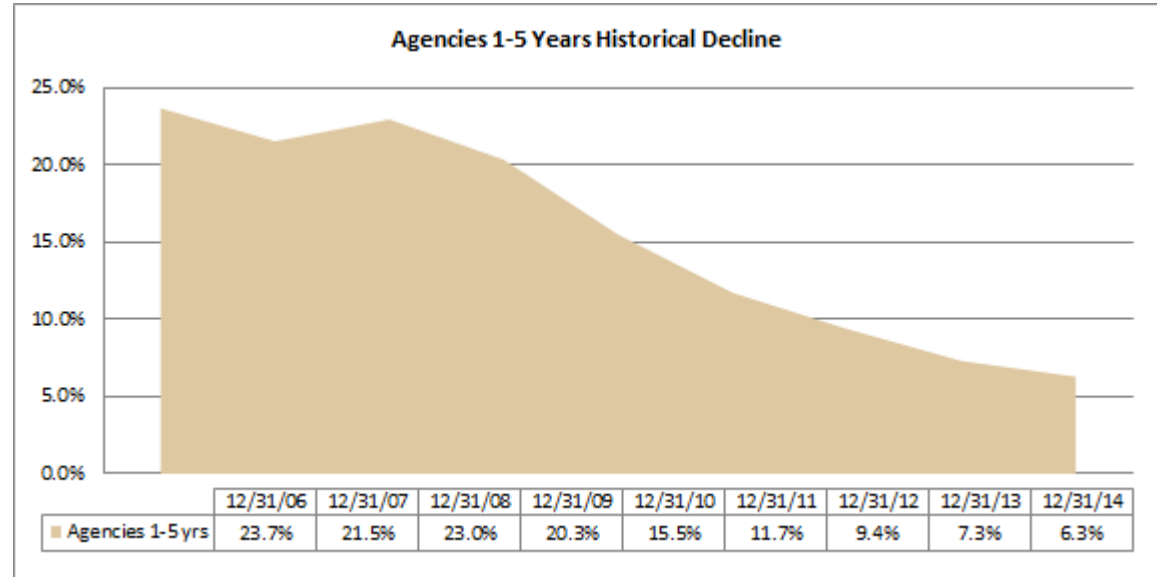


Source: Bank of America Merrill Lynch Indices

# The Agency Sector Continues to Contract

7

Fannie Mae and Freddie Mac have been mandated to contract as part of the financial bailout

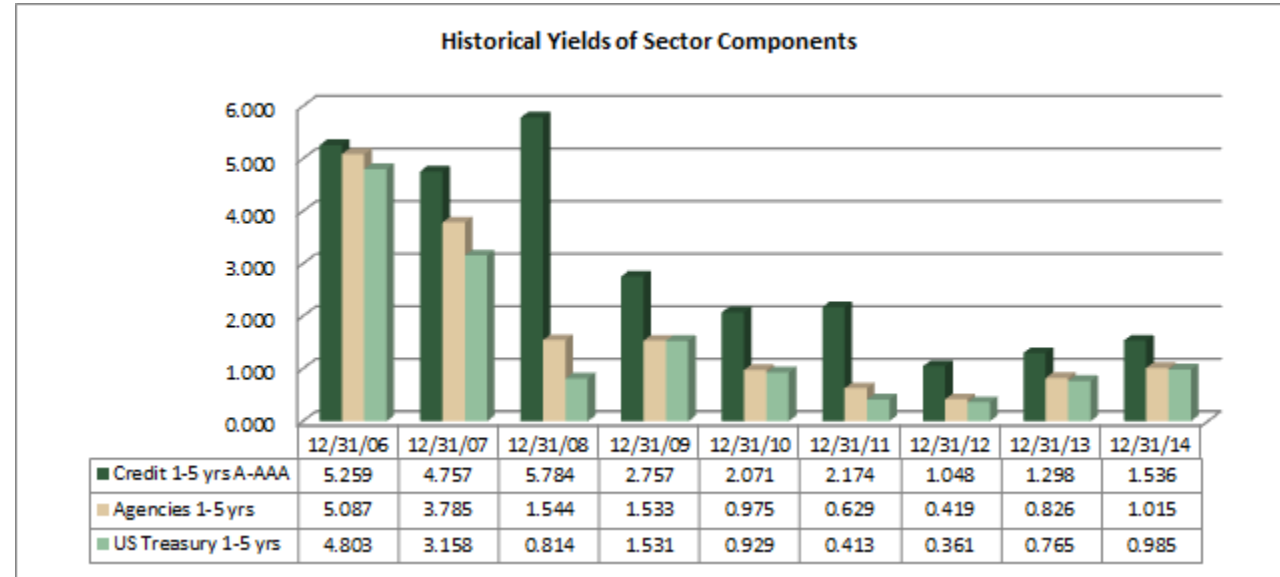


Source: Bank of America Merrill Lynch Indices

# Adding Value With Corporate Notes

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Spread and yield narrowing between the Treasury and Agency sector has investors seeking additional ways to invest consistent with safety, liquidity, and yield



Source: Bank of America Merrill Lynch Indices

# Section 1

What are corporate notes and bonds, medium-term notes and the differences beyond the definition?



# What is a Corporate Bond?

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A corporate bond is a debt security issued by a corporation

## □ Two Primary Types of Capital

### ■ Debt

- Security representing a contractual loan with a stated interest rate and fixed payment due dates of interest and principal
- Claim on assets is senior to equity holders
- Asymmetric risk for investors

### ■ Equity

- Security representing ownership interest in a company
- Claim on assets is subordinate to debt holders
- Upside unlimited and downside is zero

# Corporate Bonds: *The Basics*

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- ▣ **PURPOSE:** Corporate bonds are issued by corporations for a variety of purposes including purchasing new equipment, investing in research and development, stock buybacks, paying shareholder dividends, refinancing debt and financing mergers and acquisitions
- ▣ **CREDIT RATING:** Corporate bonds can be described as either investment grade (high grade) or non-investment grade (high yield or junk), as determined by the bond's associated credit rating
- ▣ **CASH FLOW:** Corporate bonds pay back principal at maturity (a.k.a. bullet security) and periodic interest (typically semi-annually) specified at initial pricing

# Corporate Bond Sectors

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- Corporate bond issuers can be split into various sectors. The current Global Industry Classification Standards (GICS) classifications include:
  - Telecommunications
  - Consumer discretionary (Autos, Consumer Durables, Media, Retail)
  - Consumer staples (Food, Beverage, Household, Staples Retailing)
  - Energy
  - Financials (Banks, Diversified Financials, Insurance, Real Estate)
  - Healthcare (Equipment, Pharmaceuticals, Biotech, Life Sciences)
  - Industrials (Capital Goods, Comm & Prof. Services, Transportation)
  - Materials
  - Information Technology (Software, Hardware, Semiconductors)
  - Utilities

# Corporate Bond Registrations

13

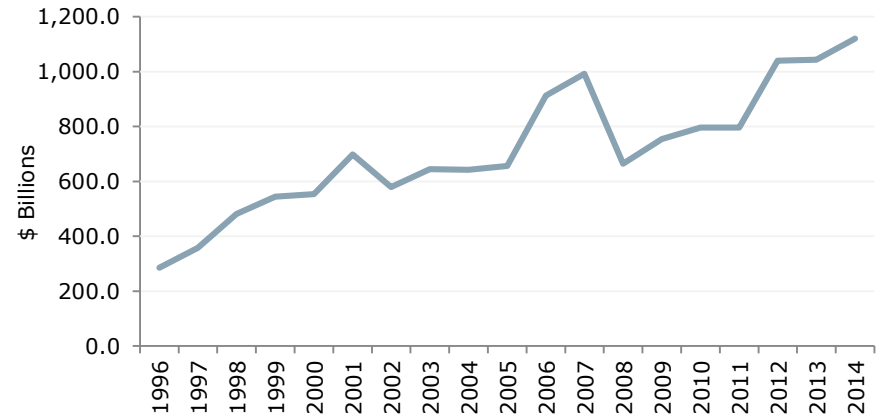
- Corporations are subject to the Securities Act of 1933 when issuing public securities. However, certain securities can be exempt from registration under 144A/Reg S
- Securities Act of 1933
  - Requirement that an issuer provide the SEC and potential investors with all relevant information pertaining to an offering through a prospectus and registration statement
- 144(a)
  - Allows for the resale of securities without the registration requirements of the Securities Act of 1933 to qualified institutional buyers (“QIBs”) ONLY
    - A QIB is an investor (not an individual) that owns and invests, on a discretionary basis, at least \$100 million in securities; for a broker-dealer the threshold is \$10 million
- Reg S
  - Allows for the sale of securities without the registration requirements of the Securities Act of 1933 to international buyers

# Corporate Bond: Issuance Trends

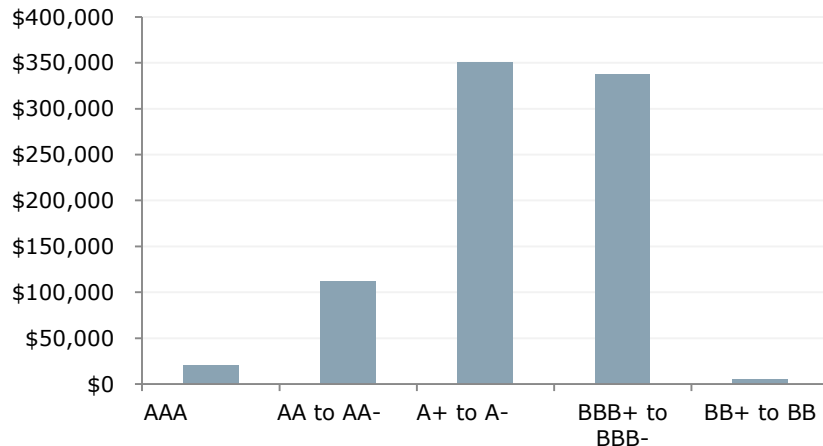
14

## Corporate Bond Issuance

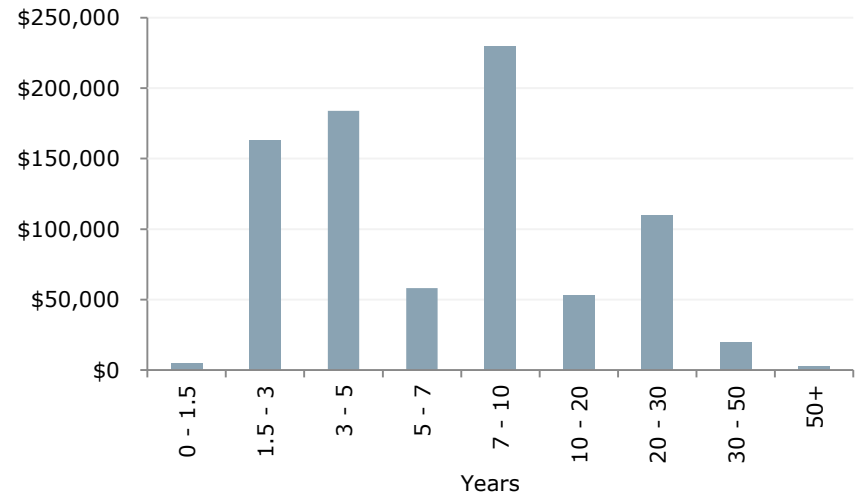
- New issuance in credit markets has reached historical levels as firms have capitalized on the low interest rate environment.
- According to data as of August 7, 2015, corporate bond issuance YTD totaled \$1.05 trillion, a \$105 billion increase over 2014.



## Corporate Bond Issuance by Rating (2015 YTD)




## Corporate Bond Issuance by Tenor (2015 YTD)




# Largest Corporate Bond Offerings

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\$49 Billion  
Baa1 / BBB+ / A-  
Verizon Wireless  
September 2013

- Proceeds used to finance acquisition of its wireless unit from Vodafone
- Offering was issued with the following maturities:
  - 3Year, 5Year, 7Year, 10Year, 20Year and 30Year



Baa3 / BBB- / BBB-  
Actavis PLC  
March 2015

- Proceeds used to finance acquisition of Botox maker Allergan Inc.
- Offering was issued with the following maturities:
  - 1 Year, 2Year, 3Year, 5Year, 7Year, 10Year, 20Year, and 30Year



\$ at&t in  
Baa1 / BBB+ / A-  
AT&T  
April 2015

- Proceeds used to finance purchase of DirecTV
- Offering was issued with the following maturities:
  - 5Year, 7Year, 10Year, 20Year and 30Year

# Primary versus Secondary

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- Corporate bonds trade in both the primary and secondary market.

## Primary

- When bonds are initially offered to the public, they are brought to market via a syndicate process
- An issuer chooses a broker-dealer to price and offer its bonds to the public
- Orders are received by those investors who express interest in purchasing the bonds and the broker-dealer will then allocate bonds to investors accordingly
  - Investors that are fully allocated receive the number of bonds requested
  - Investors that are partially allocated receive only a portion of the bonds requested
  - Investors that are unallocated do not receive any of the bonds requested

## Secondary

- After bonds have been publicly issued, they then trade in the secondary market
- Liquidity for a corporation's bonds can be determined by:
  1. How often the bonds trade in the secondary market
  2. The bid/ask spread
  3. The deal size and type of investor (s) who hold the security
  4. How many bonds trade in the market at any given time

# Coupon Structure

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- Corporate bonds can be issued as either fixed, floating or zero coupon. The structure refers to the coupon payment.

## Fixed

- A fixed-rate coupon bond pays a consistent interest payment at a specified interval over the life of the bond.
  - Coupon payments are usually paid on a semi-annual basis

## Floating

- A floating-rate bond pays a variable interest payment at a specified interval over the life of the corporate bond. This variable interest payment will consist of an underlying benchmark plus a spread.
  - Investment grade corporate bonds typically reset at 3-month intervals, but may reset monthly, semi-annually or annually

## Zero Coupon

- A zero coupon bond does not pay any interest over the life of the bond. Instead, with this structure, the investor receives all owed principal plus accrued interest at the bond's final maturity.



# Issuance Types: *Features*

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- Corporate bonds can be issued in a variety of sub-types beyond traditional categories.

## Commercial Paper

- Commercial paper is a negotiable, short-term promissory note issued for a specific amount and matures on a specific date. CP is flexible and can be issued with maturities ranging from 1 day to 397 days.
  - CP is generally issued as a zero coupon security (discount security)

Commercial paper offerings are subject to investor qualification

## Convertible Bond

- Convertible bonds can be converted into a predetermined amount of the company's equity after a specific point in time (the bond's call date). This option can be exercised by the bond holder or the issuer, depending on the conversion structure

## Yankee Bond

- A bond that is issued by a foreign issuer in the U.S. market, denominated in U.S. dollars. Often issued as 144(a) and/or Regulation S private placements.

# Issuance Types: *Support*

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- A consideration for corporate investors is where a particular bond structure ranks in terms of its claims on a company's assets. This ranking determines which investors get paid first in the event of default.

## Secured / Covered (Senior)

- Secured bonds, otherwise known as **covered** or **collateralized** bonds, are backed by specific pledged assets such as a specific piece of real estate, equipment or guarantee which can be sold to pay the bond's principal and interest should the company be unable to pay bond holders

## Unsecured (Senior)

- Unsecured bonds are not secured by collateral but are instead backed by the promise to pay and the general credit worthiness of the company

## Subordinated (Junior)

- A type of unsecured debt that is paid only after higher-ranking debt's are paid

# Issuance Types: Call Options

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- There are three major types of call options that exist in bonds. None of the options are mandatory, but give either the issuer or investor the “**right**” to redeem bonds prior to maturity.

## Callable

- A bond can have a call option associated with either one future date or a series of whereby the issuer can **call** the bonds away from investors. The call date is typically associated with a predetermined call price that the issuer must pay to call
- An issuer will exercise a call for many reasons including, but not limited to:
  - Economic reasons (i.e. if call price at the call date is lower than the current market price)
  - To remove restrictive bond covenants
  - Debt can be reissued at lower all in cost (lower rates)

## Puttable

- Bonds may also have a puttable feature allowing the investor to redeem their bonds prior to maturity, demanding repayment of principal, at one specific date or at periodic time intervals
- An issuer may exercise this puttable feature if rates rise shortly after the initial purchase of a fixed-rate bond to achieve a higher return
- Puttable options are more prevalent in floating-rate bonds versus fixed-rate bonds

## Make Whole Call

- A make-whole call option is specific to corporate bonds. A corporate bond can be issued with a make-whole call which gives the issuer the option to redeem the bonds prior to maturity based on a spread over the appropriate treasury rate

# Issuance Types: *Make Whole Call Options*

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- Corporate bonds can be issued with **make-whole calls** which give the issuer flexibility to call a bond prior to maturity.

## Make Whole Call

- A make-whole call is usually set at a spread over a Treasury rate. The issuer must pay the price implied by this spread over the appropriate treasury rate, making the investor “whole”, in order to redeem the bonds
- Make-whole calls make economic sense to an issuer if the treasury spread results in a bond price that is lower than the current market price. This situation would be beneficial to the issuer and would be an “in-the-money” option for the issuer, but disadvantageous to the investor.

## In The Money

- If the credit spread over the associated treasury leads to a market price that is below the current market price, then the option is in the money and the make-whole call can potentially be exercised and hence the bond called away from the investor

## Out of the Money

- If the credit spread over the associated treasury leads to a market price that is above the current market price, then the option is out of the money and the make-whole call will not be exercised for economic reasons. The bond will continue to be available for the investor to either hold or trade.

# Corporate Bond Ratings

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- There are both long and short-term bond ratings
- Investment-grade bonds are rated Baa3/BBB- or better, whereas non-investment grade bonds are rated Ba1/BB+ or lower
- Short-term investment-grade bonds are rated P-3/A-3/F3 or better

## Long Term Bond Ratings

	Moody's	S&P	Fitch
Investment Grade	Aaa	AAA	AAA
	Aa	AA	AA
	A	A	A
	Baa	BBB	BBB
Non-Investment Grade	Ba	BB	BB
	B	B	B
	Caa	CCC	CCC
	Ca	CC	CC
	C	C	C

## Short Term Bond Ratings

	Moody's	S&P*	Fitch*
Investment Grade	P-1	A-1	F1
	P-2	A-2	F2
	P-3	A-3	F3
	NP	B	B

Source: Wells Fargo Securities, Moody's, Standard & Poor's, Fitch  
\*S&P & Fitch rating scales continue. S&P: B, C, D / Fitch: B, C

# Corporate Bond Ratings

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- Numbers 1-3 or + / - may accompany a bond to denote its relative riskiness within a rating category, with 1 / + as a better rating than a 2 or 3 / -.

## Rating Watch

- A rating *watch* indicates a heightened probability of a rating change and the likely direction of such a change, defined as
  - Positive
  - Negative
  - Evolving
- A rating watch is typically event-driven and generally resolved over a relatively short period of time
- A rating watch may also exist to communicate implications for certain events should they occur, or otherwise known as triggering events (i.e. shareholder or regulatory approval)
- A rating change may not always be precipitated by a rating watch change

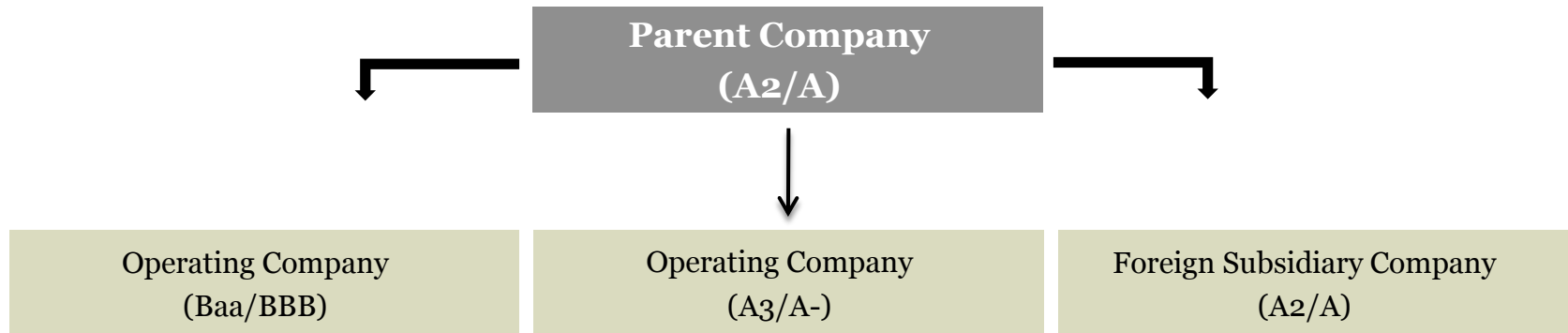
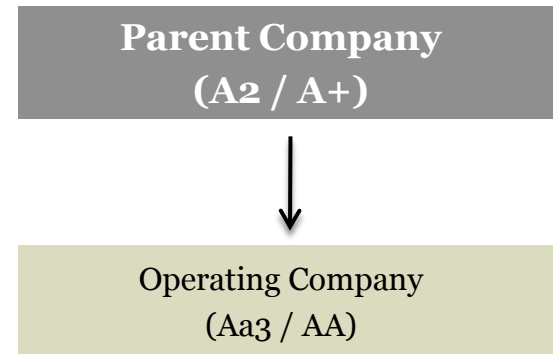
## Rating Outlook

- A rating *outlook* indicates the direction that a rating is likely to move over a one to two-year period and reflects trends that have not yet triggered a rating action, but that may do so if the trend continues
- Outlooks can be defined as
  - Stable
  - Positive
  - Negative
- Outlooks are associated with long-term ratings
- An outlook change does not necessarily mean that a bond rating will change nor does a stable outlook mean that the rating will not change

# Corporate Bond Ratings

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- A parent company /subsidiary relationship can take on multiple structures as demonstrated in the figures. A parent can have one or multiple operating companies associated with it in addition to varying percentages of ownership.
  
- Parent companies and their operating companies/subsidiaries can have different ratings depending on a variety of factors, including:
  - Access to liquidity (i.e. Central Banks)
  - Leverage
  - Tax advantages (operations in multiple countries)
  - Cross Guarantees / Support Agreements
  - Industry Outlook



# Section 2

Maturities, yield and duration risk of corporates.



# Maturity, Yield, and Duration Risk of Corporates

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- Most fixed rate bonds pay interest semiannually and at maturity
  - Interest on corporate bonds is based on a year of 360 days made up of twelve 30 day months
  - The corporate calendar day count convention is referred to as 30/360
- In general, the longer the maturity, the higher the additional spread over a similar maturity treasury
- In general, the lower the quality of the issuer, the higher the spread over a similar maturity treasury

# Corporate Bond Terminology

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<b>Issuer</b>	A corporation or legal entity that issues securities. The fundamentals and credit quality of an issuer will have an impact on bond ratings and valuation.
<b>Ticker</b>	A symbol representing a particular security. Investors typically consolidate tickers when considering maximum exposure to a particular issuer.
<b>Coupon</b>	The interest rate stated on a bond at issuance. Higher coupon notes trade at a higher spread in the secondary market, all else the same.
<b>Maturity</b>	The length of time that a security remains outstanding. The longer the maturity, the higher the spread, all else the same.
<b>Tenor</b>	The amount of time left on the bond contract. Investors should consider the debt maturity distribution of each issuer.
<b>Option adjusted spread (OAS)</b>	The spread over the Treasury yield curve that equates the present value of a bond's cash flows to its market price. It is a measure of a bond's additional return over the return of a comparable Treasury bond, net of the cost of any embedded options. A higher relative OAS may signal that a security is undervalued, while a lower relative OAS may signal that a security is overvalued.
<b>New Issue Spread</b>	New issues are typically offered at a higher spread than similar securities in the secondary market, depending on the market environment. Frequency of issuance does not necessarily lead to higher spreads.
<b>Yield to Worst at New Issue Price</b>	The yield earned on a bond, depending on prevailing market rates.
<b>Treasury Benchmark</b>	Government bond yields are used for comparison, in order to evaluate relative valuation.
<b>Duration</b>	The sensitivity of a bond price to a change in interest rates. Lower coupon bonds will have a higher duration, all else the same.
<b>Amount Issued</b>	Smaller size deals may clear the new issue market at spreads tighter than they should due to supply/demand imbalances
<b>Moody's</b>	An NRSRO (Nationally recognized statistical rating organization)
<b>Standard &amp; Poor's</b>	An NRSRO (Nationally recognized statistical rating organization)
<b>Fitch</b>	An NRSRO (Nationally recognized statistical rating organization)

# Relative Valuation of Corporate Bonds

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Maturity,  
Yields, and  
Risk affect  
bond pricing

- Credit quality and bond maturity should be considered when analyzing relative valuation
- Upward sloping credit curves depict the additional yield an investor can earn for owning a bond with a longer maturity
- Investors may also earn an additional yield spread for owning a note with lower credit quality

# John Deere Capital Corp vs CVS Health Corp

29

## Comparing Investment Grade Corporate Bonds

- John Deere (DE) is a higher-quality issuer than CVS Health (CVS). DE is rated A2/A while CVS is rated Baa1/BBB+
- Investors may earn a higher spread for owning CVS vs. DE
- Investors may earn a higher spread for owning a 5-year bond of a particular issuer vs. a 3-year bond

# Maturity, Duration and Yield of Corporates

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DE1.6 7/13/18 Corp DES  
JOHN DEERE CAP DE 1.6 07/13/18 100.025/100.025 (1.591/1.591) TRAC

DE 1.6 07/13/18 Corp Page 1/11 Description: Bond

94 Notes 95 Buy 96 Sell 97 Settings

21) Bond Description 22) Issuer Description

Pages	Issuer Information	Identifiers
1) Bond Info	<b>Name</b> JOHN DEERE CAPITAL CORP	<b>ID Number</b> AF2387013
2) Addtl Info	<b>Industry</b> Machinery Manufacturing	<b>CUSIP</b> 24422ESX8
3) Covenants	<b>Security Information</b>	<b>ISIN</b> US24422ESX84
4) Guarantors	<b>Mkt Iss</b> Domestic MTN	<b>Bond Ratings</b>
5) Bond Ratings	<b>Country</b> US <b>Currency</b> USD	<b>Moody's</b> A2
6) Identifiers	<b>Rank</b> Sr Unsecured <b>Series</b> MTN	<b>S&amp;P</b> A
7) Exchanges	<b>Coupon</b> 1.6 <b>Type</b> Fixed	<b>Composite</b> A
8) Inv Parties	<b>Cpn Freq</b> S/A	<b>Issuance &amp; Trading</b>
9) Fees, Restrict	<b>Day Cnt</b> 30/360 <b>Iss Price</b> 99.96200	<b>Amt Issued/Outstanding</b>
10) Schedules	<b>Maturity</b> 07/13/2018	USD 500,000.00 (M) /
11) Coupons	<b>BULLET</b>	USD 500,000.00 (M)
<b>Quick Links</b>	<b>Iss Sprd</b> 68.00bp vs T 0 7 <sub>8</sub> 07/15/18	<b>Min Piece/Increment</b>
32) ALLQ Pricing	<b>Calc Type</b> (1)STREET CONVENTION	1,000.00 / 1,000.00
33) QRD Quote Reqa	<b>Announcement Date</b> 07/09/2015	<b>Par Amount</b> 1,000.00
34) TDH Trade Hist	<b>Interest Accrual Date</b> 07/14/2015	<b>Book Runner</b> GS,JPM,MUFG
35) CAC Corp Action	<b>1st Settle Date</b> 07/14/2015	<b>Reporting</b> TRACE
36) CF Prospectus	<b>1st Coupon Date</b> 01/13/2016	
37) CN Sec News		
38) HDS Holders		
39) VPR Underly Info		
66) Send Bond		

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000  
Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2015 Bloomberg Finance L.P.  
SN 725586 PDT GMT-7:00 G660-3645-0 31-Jul-2015 12:25:22

# Maturity, Duration and Yield of Corporates

31

DE2.375 7/14/20 Corp DES  
JOHN DEERE CAP DE 2 <sup>3</sup>/<sub>8</sub> 07/14/20 100.503/100.503 (2.267/2.267) TRAC

DE 2 <sup>3</sup>/<sub>8</sub> 07/14/20 Corp Page 1/11 Description: Bond

94 Notes 95 Buy 96 Sell 97 Settings

21) Bond Description 22) Issuer Description

Pages	Issuer Information	Identifiers
1) Bond Info	<b>Name</b> JOHN DEERE CAPITAL CORP	<b>ID Number</b> AF2392260
2) Addtl Info	<b>Industry</b> Machinery Manufacturing	<b>CUSIP</b> 24422ESY6
3) Covenants	<b>Security Information</b>	<b>ISIN</b> US24422ESY67
4) Guarantors	<b>Mkt Iss</b> Domestic MTN	<b>Bond Ratings</b>
5) Bond Ratings	<b>Country</b> US <b>Currency</b> USD	<b>Moody's</b> A2
6) Identifiers	<b>Rank</b> Sr Unsecured <b>Series</b> MTN	<b>S&amp;P</b> A
7) Exchanges	<b>Coupon</b> 2.375 <b>Type</b> Fixed	<b>Composite</b> A
8) Inv Parties	<b>Cpn Freq</b> S/A	<b>Issuance &amp; Trading</b>
9) Fees, Restrict	<b>Day Cnt</b> 30/360 <b>Iss Price</b> 99.91600	<b>Amt Issued/Outstanding</b>
10) Schedules	<b>Maturity</b> 07/14/2020	USD 500,000.00 (M) /
11) Coupons	<b>BULLET</b>	USD 500,000.00 (M)
<b>Quick Links</b>	<b>Iss Sprd</b> 83.00bp vs T 1 <sup>5</sup> / <sub>8</sub> 06/30/20	<b>Min Piece/Increment</b>
32) ALLQ Pricing	<b>Calc Type</b> (1)STREET CONVENTION	1,000.00 / 1,000.00
33) QRD Quote Reqa	<b>Announcement Date</b> 07/09/2015	<b>Par Amount</b> 1,000.00
34) TDH Trade Hist	<b>Interest Accrual Date</b> 07/14/2015	<b>Book Runner</b> GS,JPM,MUFG
35) CAC Corp Action	<b>1st Settle Date</b> 07/14/2015	<b>Reporting</b> TRACE
36) CF Prospectus	<b>1st Coupon Date</b> 01/14/2016	
37) CN Sec News		
38) HDS Holders		
39) VPR Underly Info		
66) Send Bond		

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000  
Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2015 Bloomberg Finance L.P.  
SN 725586 PDT GMT-7:00 G660-3645-1 31-Jul-2015 12:25:06

# Maturity, Duration and Yield of Corporates

32

DE 1.6 07/13/18 \$ **↑100.025** +.031 60.7 bp vs T 0.875 07/15/2018  
 At 7:56d Vol 500.0M Op 100.025 Hi 100.025 Lo 100.025 Yld 1.591 TRAC

DE 1.6 07/13/18 Corp Yield and Spread Analysis

95 Buy 96 Sell 97 Settings

1) Yield & Spread 2) Graphs 3) Pricing 4) Description 5) Custom

DE 1.6 07/13/18 ( 24422ESX8 )

Spread	68 bp vs 3y T 0 7/15/18	Risk	Workout	OAS
Price	99.962	Mod Dur	2.915	2.931
Yield	1.613044 wst 0.933000 S/A	Risk	2.914	2.930
Wkout	07/13/2018 @ 100.00 Yld 6.6	Convexity	0.100	0.101
Settle	07/14/15 07/10/15	DV 01 on 1MM	291	293
Trade	07/09/15 Retro (Using input price)	Benchmark Risk	2.949	2.979
		Risk Hedge	988 M	984 M
		Proceeds Hedge	1,001 M	

Spreads		Yield Calculations	
11) G-Sprd	64.7	Street Convention	1.613045
12) I-Sprd	41.9	Equiv 1 /Yr	1.619549
13) Basis	-14.2	Mmkt (Act/ 360 )	
14) Z-Sprd	42.4	True Yield	1.613009
15) ASW	41.5	Current Yield	1.601
16) OAS	64.7		
17) TED	-41.3		

After Tax (Inc 43.400 % CG 23.800 %) 0.915501

Invoice	
Face	1,000 M
Principal	999,620.00
Accrued (0 Days)	0.00
Total (USD)	999,620.00

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000  
 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2015 Bloomberg Finance L.P.  
 SN 725586 PDT GMT-7:00 G660-3645-0 31-Jul-2015 12:35:16

# Maturity, Duration and Yield of Corporates

33

DE 2 3/8 07/14/20 \$ **↑ 100.503** +.699 72.6 bp vs T 1.625 06/30/2020  
 At 8:06d Vol 660.0M Op 100.401 Hi 100.503 Lo 100.401 Yld 2.267 TRAC

DE 2 3/8 07/14/20 Corp Yield and Spread Analysis

95 Buy 96 Sell 97 Settings

1) Yield & Spread 2) Graphs 3) Pricing 4) Description 5) Custom

DE 2 3/8 07/14/20 ( 24422ESY6 )

Spread	83 bp vs	5y T 1 3/8 06/30/20	
Price	99.91565	↻	100.295366
Yield	2.393000 wst		1.563000 S/A
Wkout	07/14/2020 @	100.00	Yld 6 6
Settle	07/14/15		07/10/15
Trade	07/09/15		Retro (Using input price)

Risk	Workout	OAS
Mod Dur	4.688	4.748
Risk	4.684	4.744
Convexity	0.250	0.256
DV 01 on 1MM	468	474
Benchmark Risk	4.775	4.837
Risk Hedge	981 M	981 M
Proceeds Hedge		996 M

Spreads		Yield Calculations	
1) G-Sprd	79.9	Street Convention	2.393000
12) I-Sprd	66.7	Equiv 1 /Yr	2.407316
13) Basis	-20.4	Mmkt (Act/ 360 )	
14) Z-Sprd	67.6	True Yield	2.392874
15) ASW	65.6	Current Yield	2.377
16) OAS	81.5		
17) TED	-63.9		

After Tax (Inc 43.400 % CG 23.800 %)	1.357862
--------------------------------------	----------

Invoice	
Face	1,000 M
Principal	999,156.50
Accrued (0 Days)	0.00
Total (USD)	999,156.50

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000  
 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2015 Bloomberg Finance L.P.  
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# Maturity, Duration and Yield of Corporates

34

Credit Curve is upward sloping with an additional 15 basis points in spread for purchasing a five year note versus a three year note

Issuer	John Deere Capital Corp	John Deere Capital Corp
Ticker	DE	DE
Coupon	1.600	2.375
Maturity	07/13/18	07/14/20
Tenor	3 year	5 Year
New Issue Spread	68	83
YTW at New Issue Price	1.61%	2.39%
Treasury Benchmark	0.875 7/15/18	1.625 6/30/20
Duration	2.93	4.75
Amount Issued	500mm	500mm
Moody's	A2	A2
S&P	A	A
Fitch	NA	NA

# Maturity, Duration and Yield of Corporates

35

CVS1.90 7/20/18 Corp DES  
CVS HEALTH CORP CVS 1.9 07/20/18 100.436/100.436 (1.748/1.748) TRAC

CVS 1.9 07/20/18 Corp Page 1/11 Description: Bond

94 Notes 95 Buy 96 Sell 97 Settings

21) Bond Description 22) Issuer Description

Pages	Issuer Information	Identifiers
1) Bond Info	<b>Name</b> CVS HEALTH CORP	<b>ID Number</b> AF2627020
2) Addtl Info	<b>Industry</b> Supermarkets & Pharmacies	<b>CUSIP</b> 126650CH1
3) Covenants	<b>Security Information</b>	<b>ISIN</b> US126650CH13
4) Guarantors	<b>Mkt Iss</b> Global	<b>Bond Ratings</b>
5) Bond Ratings	<b>Country</b> US <b>Currency</b> USD	<b>Moody's</b> Baa1
6) Identifiers	<b>Rank</b> Sr Unsecured <b>Series</b>	<b>S&amp;P</b> BBB+
7) Exchanges	<b>Coupon</b> 1.9 <b>Type</b> Fixed	<b>Composite</b> BBB+
8) Inv Parties	<b>Cpn Freq</b> S/A	<b>Issuance &amp; Trading</b>
9) Fees, Restrict	<b>Day Cnt</b> 30/360 <b>Iss Price</b> 99.93000	<b>Amt Issued/Outstanding</b>
10) Schedules	<b>Maturity</b> 07/20/2018	USD 2,250,000.00 (M) /
11) Coupons	<b>MAKE WHOLE @15 until 07/20/18/BULLET</b>	USD 2,250,000.00 (M)
<b>Quick Links</b>	<b>Iss Sprd</b> 85.00bp vs T 0 7/8 07/15/18	<b>Min Piece/Increment</b>
32) ALLQ Pricing	<b>Calc Type</b> (1)STREET CONVENTION	2,000.00 / 1,000.00
33) QRD Quote Reqa	<b>Announcement Date</b> 07/13/2015	<b>Par Amount</b> 1,000.00
34) TDH Trade Hist	<b>Interest Accrual Date</b> 07/20/2015	<b>Book Runner</b> JOINT LEADS
35) CAC Corp Action	<b>1st Settle Date</b> 07/20/2015	<b>Reporting</b> TRACE
36) CF Prospectus	<b>1st Coupon Date</b> 01/20/2016	
37) CN Sec News		
38) HDS Holders		
39) VPR Underly Info		
66) Send Bond		

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000  
Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2015 Bloomberg Finance L.P.  
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# Maturity, Duration and Yield of Corporates

36

CVS2.80 7/20/20 Corp DES  
 CVS HEALTH CORP CVS 2.8 07/20/20 101.053/101.053 (2.569/2.569) TRAC  
 CVS 2.8 07/20/20 Corp Page 1/11 Description: Bond

94 Notes 95 Buy 96 Sell 97 Settings

21) Bond Description 22) Issuer Description

Pages	Issuer Information	Identifiers
1) Bond Info	<b>Name</b> CVS HEALTH CORP	<b>ID Number</b> AF2637961
2) Addtl Info	<b>Industry</b> Supermarkets & Pharmacies	<b>CUSIP</b> 126650CJ7
3) Covenants	<b>Security Information</b>	<b>ISIN</b> US126650CJ78
4) Guarantors	<b>Mkt Iss</b> Global	<b>Bond Ratings</b>
5) Bond Ratings	<b>Country</b> US <b>Currency</b> USD	<b>Moody's</b> Baa1
6) Identifiers	<b>Rank</b> Sr Unsecured <b>Series</b>	<b>S&amp;P</b> BBB+
7) Exchanges	<b>Coupon</b> 2.8 <b>Type</b> Fixed	<b>Composite</b> BBB+
8) Inv Parties	<b>Cpn Freq</b> S/A	<b>Issuance &amp; Trading</b>
9) Fees, Restrict	<b>Day Cnt</b> 30/360 <b>Iss Price</b> 99.92600	<b>Amt Issued/Outstanding</b>
10) Schedules	<b>Maturity</b> 07/20/2020	USD 2,750,000.00 (M) /
11) Coupons	<b>MAKE WHOLE @20 until 06/20/20/ CALL 06/20...</b>	USD 2,750,000.00 (M)
<b>Quick Links</b>	<b>Iss Sprd</b> 110.00bp vs T 1 <sup>5</sup> / <sub>8</sub> 06/30/20	<b>Min Piece/Increment</b>
32) ALLQ Pricing	<b>Calc Type</b> (1)STREET CONVENTION	2,000.00 / 1,000.00
33) QRD Quote Reqa	<b>Announcement Date</b> 07/13/2015	<b>Par Amount</b> 1,000.00
34) TDH Trade Hist	<b>Interest Accrual Date</b> 07/20/2015	<b>Book Runner</b> JOINT LEADS
35) CAC Corp Action	<b>1st Settle Date</b> 07/20/2015	<b>Reporting</b> TRACE
36) CF Prospectus	<b>1st Coupon Date</b> 01/20/2016	
37) CN Sec News		
38) HDS Holders		
39) VPR Underly Info		
66) Send Bond		

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000  
 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2015 Bloomberg Finance L.P.  
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# Maturity, Duration and Yield of Corporates

37

CVS 1.9 07/20/18 \$ **↑100.499** +.244 73.9 bp vs T 0.875 07/15/2018  
 At 9:41d Vol 8.8MM Op 100.449 Hi 100.636 Lo 100.420 Yld 1.726 TRAC

CVS 1.9 07/20/18 Corp Yield and Spread Analysis

**95 Buy** **96 Sell** 97 Settings

1) Yield & Spread 2) Graphs 3) Pricing 4) Description 5) Custom

CVS 1.9 07/20/18 ( 126650CH1 )

Spread	85.01 bp vs 3y T 0 7/15/18	Risk	Workout	OAS
Price	99.93	Mod Dur	2.902	2.920
Yield	1.924125 wst 1.074000 S/A	Risk	2.900	2.918
Wkout	07/20/2018 @ 100.00 Yld 6 6	Convexity	0.100	0.101
Settle	07/20/15 07/14/15	DV 01 on 1MM	290	292
Trade	07/13/15 Retro (Using input price)	Benchmark Risk	2.934	2.955
		Risk Hedge	988 M	987 M
		Proceeds Hedge	1,005 M	

Spreads		Yield Calculations	
11) G-Sprd	84.6	Street Convention	1.924125
12) I-Sprd	63.3	Equiv 1 /Yr	1.933381
13) Basis	-40.0	Mmkt (Act/ 360 )	
14) Z-Sprd	63.3	True Yield	1.924092
15) ASW	61.9	Current Yield	1.901
16) OAS	85.1		
17) TED	-61.9		

After Tax (Inc 43.400 % CG 23.800 %) 1.093704

Invoice	
Face	1,000 M
Principal	999,300.00
Accrued (0 Days)	0.00
Total (USD)	999,300.00

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 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2015 Bloomberg Finance L.P.  
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# Maturity, Duration and Yield of Corporates

38

CVS 2.8 07/20/20 \$ **↑101.053** +.462 102.9 bp vs T 1.625 06/30/2020  
 At 9:39d Vol 18.2MM Op 100.415 Hi 101.053 Lo 100.415 Yld 2.569 TRAC

CVS 2.8 07/20/20 Corp Yield and Spread Analysis

95 Buy 96 Sell 97 Settings

1) Yield & Spread 2) Graphs 3) Pricing 4) Description 5) Custom 6) Calls

CVS 2.8 07/20/20 ( 126650CJ7 )

Spread	110 bp vs	5y T 1 $\frac{1}{8}$ 06/30/20	
Price	99.926	↻	99.568819
Yield	2.815970	wst	1.715970 S/A
Wkout	07/20/2020 @	100.00	Yld 6 6
Settle	07/20/15		07/14/15
Trade	07/13/15		Retro (Using input price)

Risk	Workout	OAS
Mod Dur	4.635	4.686
Risk	4.632	4.683
Convexity	0.246	0.211
DV 01 on 1MM	463	468
Benchmark Risk	4.725	4.790
Risk Hedge	980 M	978 M
Proceeds Hedge	1,003 M	

Spreads		Yield Calculations	
11) G-Sprd	108.7	Street Convention	2.815970
12) I-Sprd	97.0	Equiv 1 /Yr	2.835794
13) Basis	-64.6	Mmkt (Act/ 360)	
14) Z-Sprd	97.9	True Yield	2.815821
15) ASW	94.9	Current Yield	2.802
16) OAS	111.0		
17) TED	-94.3		

After Tax (Inc 43.400 % CG 23.800 %)	1.596860
--------------------------------------	----------

Invoice	
Face	1,000 M
Principal	999,260.00
Accrued (0 Days)	0.00
Total (USD)	999,260.00

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000  
 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2015 Bloomberg Finance L.P.  
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# Maturity, Duration and Yield of Corporates

39

Issuers with lower credit quality typically have a steeper spread curve. In this case CVS 3s/5s curve is 25 basis points versus 15 basis points for John Deere Capital Corp

<b>Issuer</b>	CVS Health Corp	CVS Health Corp
<b>Ticker</b>	CVS	CVS
<b>Coupon</b>	1.900	2.800
<b>Maturity</b>	07/20/18	07/20/20
<b>Tenor</b>	3 year	5 year
<b>New Issue Spread</b>	85	110
<b>YTW at New Issue Price</b>	1.92%	2.82%
<b>Treasury Benchmark</b>	0.875 7/15/18	1.625 6/30/20
<b>Duration</b>	2.92	4.69
<b>Amount Issued</b>	2,250mm	2,750mm
<b>Moody's</b>	Baa1	Baa1
<b>S&amp;P</b>	BBB+	BBB+
<b>Fitch</b>	NA	NA

# Maturity, Duration and Yield of Corporates

40

CVS cleared the market 17 basis points wider compared to John Deere at the three year maturity point and 27 basis points wider at the five year maturity point

Issuer	John Deere Capital Corp	CVS Health Corp	John Deere Capital Corp	CVS Health Corp
Ticker	DE	CVS	DE	CVVS
Coupon	1.600	1.900	2.375	2.800
Maturity	07/13/18	07/20/18	07/14/20	07/20/20
Tenor	3 year	3 year	5 year	5 year
New Issue Spread	68	85	83	110
YTW at New Issue Price	1.61%	1.92%	2.39%	2.82%
Treasury Benchmark	0.875 7/15/18	0.875 7/15/18	1.625 6/30/20	1.625 6/30/20
Duration	2.93	2.92	4.75	4.69
Amount Issued	500mm	2,250mm	500mm	2,750mm
Moody's	A2	Baa1	A2	Baa1
S&P	A	BBB+	A	BBB+
Fitch	NA	NA	NA	NA

# Section 3

Credit criteria for public investments in corporates.



# Selected State Requirements for Corporates

State	Credit Quality	Maturity
Oregon	In State: A/A, A-2/P-2 Out of State: Aa/AA, A-1, P-1	18 months
Utah	A-rated by at least 2 agencies	Fixed: 15 months Float: 3 years
Ohio	Rated in one of the two highest categories by at least two ratings agencies	2 years
Illinois	Rated in one of the three highest ratings categories by at least two rating agencies	180 days
Colorado	Not rated below Aa3/AA- by any rating agency	3 years
California	A or higher by at least one rating agency	5 years

# Section 4

Government Code 53601(k) regarding issuer restrictions and rating requirements.

# Government Code 53601(k) – issuer restrictions and rating requirements

44

Eligible investments are determined by California State Code

## Medium Term Notes

All corporates and depository institution debt securities with a maximum remaining maturity of five years or less

Issued by corporations organized and operating within the United States or by depository institutions licensed by the United States or any state operating within the United States

Notes eligible for investment under this subdivision shall be rated “A” or better by an NRSRO

Instruments authorized by this section shall not exceed 30% of the agency’s moneys that may be invested pursuant to this section

Refer to CDIAC Issue Brief on Foreign Issuers:

<http://www.treasurer.ca.gov/cdiac/reports/53601k.pdf>

# California Code 53601(k) – issuer restrictions and rating requirements

45

California Code only stipulates an “A” or better rating from a NRSRO. The three primary NRSRO’s are listed; others also qualify to meet the requirement

Standard & Poor's	Moody's	Fitch
AAA	Aaa	AAA
AA+	Aa1	AA+
AA	Aa2	AA
AA-	Aa3	AA-
A+	A1	A+
A	A2	A
A-	A3	A-
BBB+	Baa1	BBB+
BBB	Baa2	BBB
BBB-	Baa3	BBB-
BB+	Ba1	BB+
BB	Ba2	BB
BB-	Ba3	BB-
B+	B1	B+
B	B2	B
B-	B3	B-
CCC+	Caa1	CCC
CCC	Caa2	DDD
CCC-	Caa3	DD
	Ca	D
	C	

# California Code 53601(k) – issuer restrictions and rating requirements

46

NRSROs define the eligible investment set but best practices to have an internal process to determine appropriate corporate notes based on risk tolerance of organization

- ❑ Rating requirements based on time of purchase
- ❑ Split rated securities are allowed but arguably outside of the spirit of the requirement
- ❑ Code is silent on the requirements of an agency if a security is downgraded
- ❑ 144a securities inconsistent with California Code
- ❑ Refer to CDIAC Issue Brief  
<http://www.treasurer.ca.gov/cdiac/issuebriefs/201307.pdf>

# California Code 53601(k) – issuer restrictions and rating requirements

47

Private Placement securities are inconsistent with California Code

- 144a securities are not registered with the SEC
- Not subject to same disclosure requirements as registered securities
- The SEC rule limits who can buy private placement securities to certain Qualified Institutional Buyers (QIBs)

# California Code 53601(k) – issuer restrictions and rating requirements

48

RDSALN  
2.125  
5/11/20 – A  
high quality  
issuer but isn't  
consistent with  
California  
Code because  
the country of  
incorporation  
is the  
Netherlands  
(NL)

21) Bond Description		22) Issuer Description	
<b>Pages</b> 1) Bond Info 2) Addtl Info 3) Covenants 4) Guarantors 5) Bond Ratings 6) Identifiers 7) Exchanges 8) Inv Parties 9) Fees, Restrict 10) Schedules 11) Coupons <b>Quick Links</b> 32) ALLQ Pricing 33) QRD Quote Reqa 34) TDH Trade Hist 35) CAC Corp Action 36) CF Prospectus 37) CN Sec News 38) HDS Holders 39) VPR Underly Info 66) Send Bond		<b>Issuer Information</b> <b>Name</b> SHELL INTERNATIONAL FIN <b>Industry</b> Integrated Oils <b>Security Information</b> <b>Mkt Iss</b> Global <b>Country</b> NL <b>Rank</b> Sr Unsecured <b>Coupon</b> 2.125 <b>Cpn Freq</b> S/A <b>Day Cnt</b> 30/360 <b>Maturity</b> 05/11/2020 <b>MAKES WHOLE @10 until 05/11/20/BULLET</b> <b>Iss Sprd</b> 60.00bp vs T 1 3/8 04/30/20 <b>Calc Type</b> (1)STREET CONVENTION <b>Announcement Date</b> 05/06/2015 <b>Interest Accrual Date</b> 05/11/2015 <b>1st Settle Date</b> 05/11/2015 <b>1st Coupon Date</b> 11/11/2015	
		<b>Identifiers</b> <b>ID Number</b> EK9007882 <b>CUSIP</b> 822582BG6 <b>ISIN</b> US822582BG61 <b>Bond Ratings</b> <b>Moody's</b> Aa1 <b>S&amp;P</b> AA- <b>Composite</b> AA <b>Issuance &amp; Trading</b> <b>Amt Issued/Outstanding</b> <b>USD</b> 2,000,000.00 (M) / <b>USD</b> 2,000,000.00 (M) <b>Min Piece/Increment</b> 1,000.00 / 1,000.00 <b>Par Amount</b> 1,000.00 <b>Book Runner</b> BCLY,HSBC,MS <b>Reporting</b> TRACE	

# California Code 53601(k) – issuer requirements and rating requirements

49

PEP 1.85  
4/30/20 –  
Highly Rated,  
U.S. Domiciled,  
Medium-Term  
Bond  
(Fundamentals,  
Event Risk, and  
Relative  
Valuation  
should be  
considered)

21) Bond Description		22) Issuer Description	
<b>Pages</b> 1) Bond Info 2) Addtl Info 3) Covenants 4) Guarantors 5) Bond Ratings 6) Identifiers 7) Exchanges 8) Inv Parties 9) Fees, Restrict 10) Schedules 11) Coupons <b>Quick Links</b> 32) ALLQ Pricing 33) QRD Quote Reqa 34) TDH Trade Hist 35) CAC Corp Action 36) CF Prospectus 37) CN Sec News 38) HDS Holders 39) VPR Underly Info 66) Send Bond		<b>Issuer Information</b> <b>Name</b> PEPSICO INC <b>Industry</b> Food & Beverage <b>Security Information</b> <b>Mkt Iss</b> Global <b>Country</b> US <b>Currency</b> USD <b>Rank</b> Sr Unsecured <b>Series</b> <b>Coupon</b> 1.85 <b>Type</b> Fixed <b>Cpn Freq</b> S/A <b>Day Cnt</b> 30/360 NON-EOM <b>Iss Price</b> 99.94300 <b>Maturity</b> 04/30/2020 MAKE WHOLE @10 until 03/30/20/ CALL 03/30/2... <b>Iss Sprd</b> 52.00bp vs T 1 <sup>3</sup> / <sub>8</sub> 03/31/20 <b>Calc Type</b> (1)STREET CONVENTION <b>Announcement Date</b> 04/27/2015 <b>Interest Accrual Date</b> 04/30/2015 <b>1st Settle Date</b> 04/30/2015 <b>1st Coupon Date</b> 10/30/2015	
		<b>Identifiers</b> <b>ID Number</b> EK8837743 <b>CUSIP</b> 713448CS5 <b>ISIN</b> US713448CS53 <b>Bond Ratings</b> <b>Moody's</b> A1 <b>S&amp;P</b> A <b>Fitch</b> A <b>Composite</b> A <b>Issuance &amp; Trading</b> <b>Amt Issued/Outstanding</b> USD 750,000.00 (M) / USD 750,000.00 (M) <b>Min Piece/Increment</b> 2,000.00 / 1,000.00 <b>Par Amount</b> 1,000.00 <b>Book Runner</b> CITI,MLPFS,MS <b>Reporting</b> TRACE	



# Section 5

How investing in corporates addresses the need for safety, liquidity and yield in the public investment portfolio.

# Diversification

51

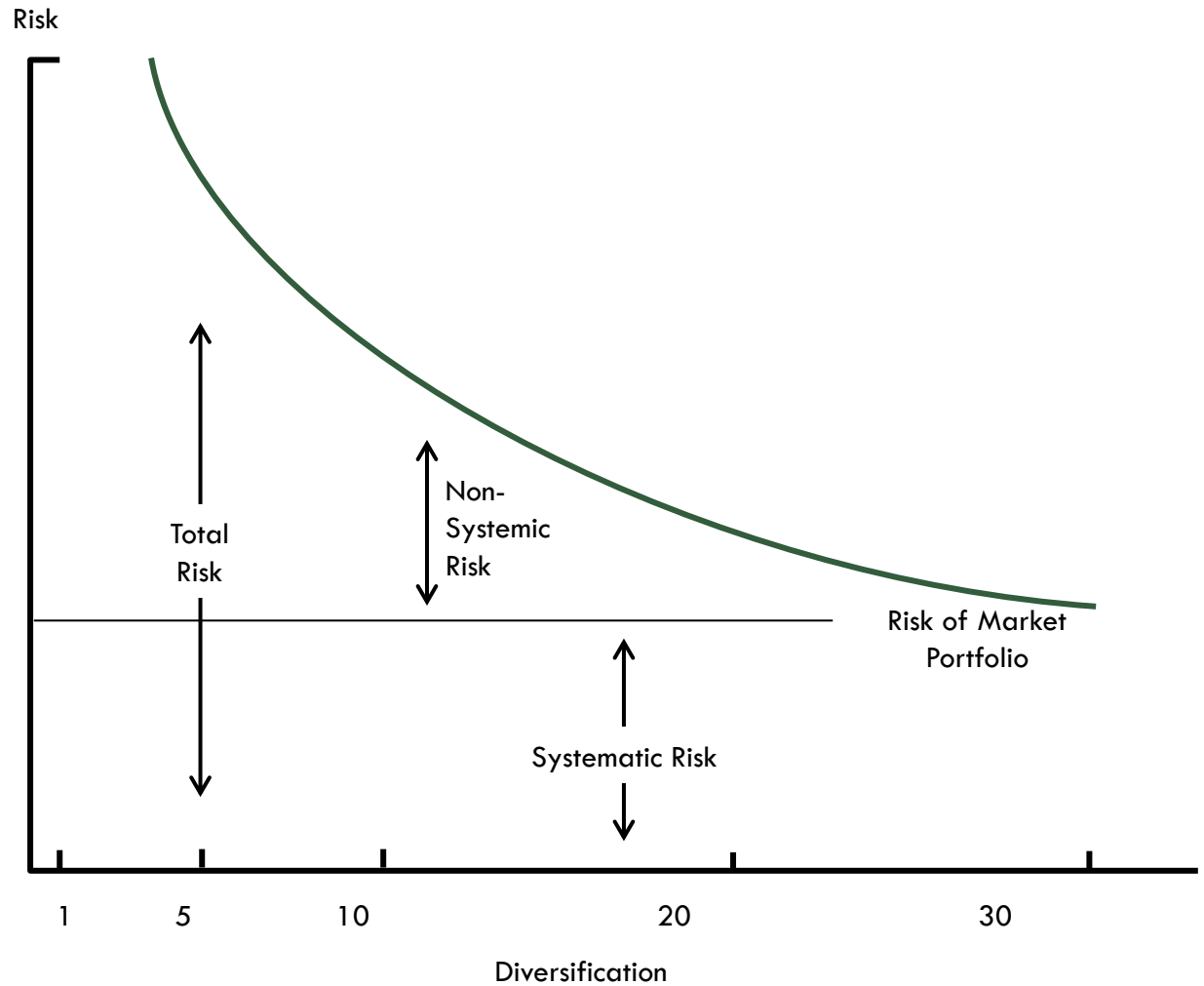
Diversification may provide additional safety, liquidity, and yield

- A diversified portfolio is one that holds a variety of securities with different characteristics
- Diversification can reduce risk, but cannot eliminate risk
- Diversification can reduce volatility
- The idea of diversification is to create a portfolio with the best combination of risk and expected return

# Diversification

52

Total risk is comprised of market risk and issuer-specific risk. As portfolio diversification increases, total risk declines



# Diversification

53

Diversification  
can help to  
reduce issuer-  
specific risk

- Systematic or market risk cannot be diversified
  - ▣ Market risk impacts all securities
  
- Idiosyncratic risk can be diversified
  - ▣ Asset type
  - ▣ Industry
  - ▣ Issuer

# Diversification

A well diversified portfolio has the potential to provide a greater level of safety and reduce the volatility of returns

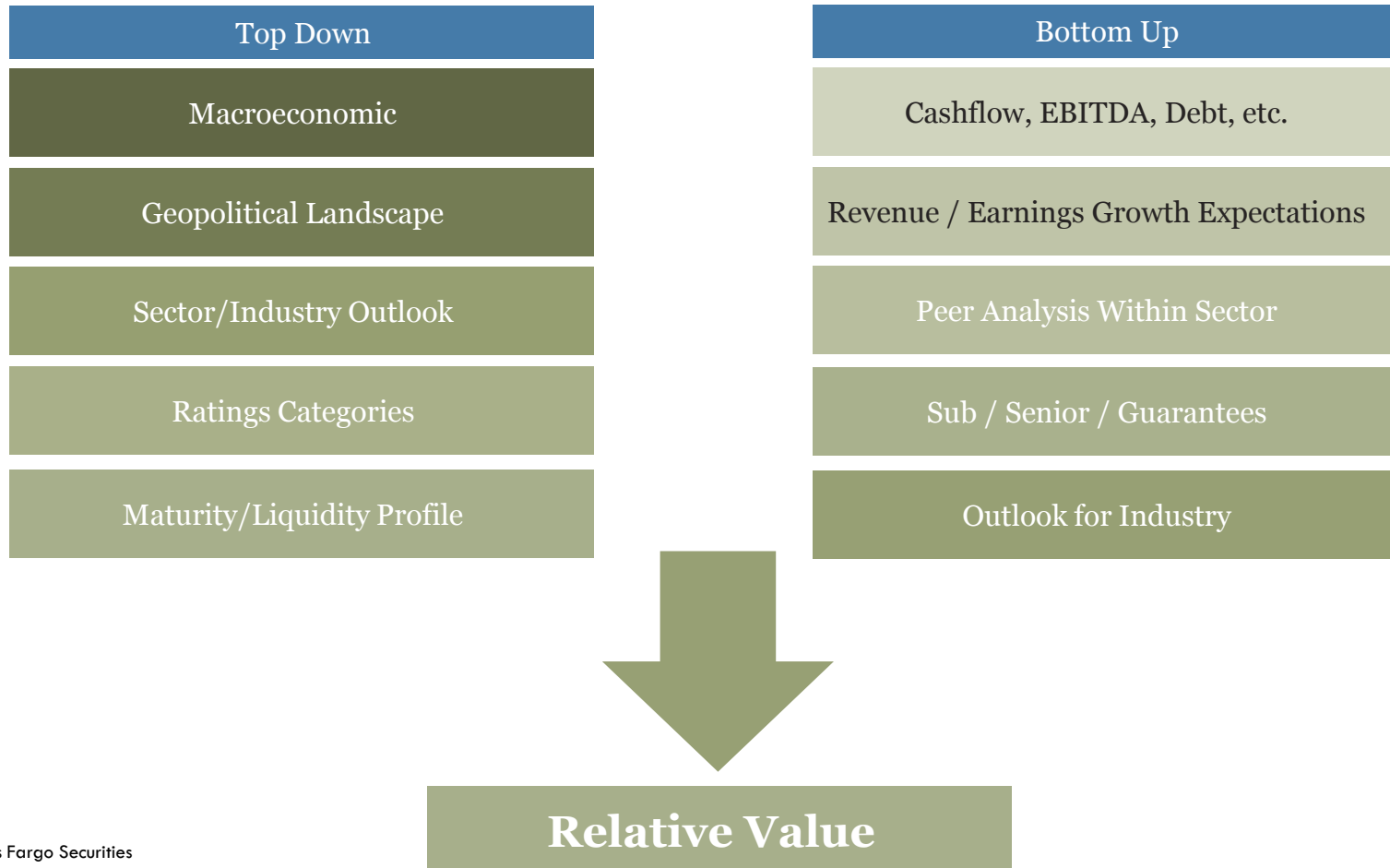
# Section 6

The analysis required prior to investing in corporates.

# Corporate Bond Analysis: Credit Outlook

56

- While both top-down and bottom-up approaches have a similar goal, their methodologies are markedly different



# Credit Research & Analysis

57

- Thorough research and analysis of corporate issuers and industry fundamentals can also help to mitigate risk
- Issuers should be monitored to help anticipate changes in credit quality
- Credit ratios help determine credit quality
- Credit ratios can be evaluated in the context of historical trends and relative to industry peers



# Issuer Specific Research & Analysis

58

- There are a variety of useful topics to explore when analyzing corporate bond issues

## Earnings

- Current and historical earnings to evaluate trends
- Compare to peers

## Sales/Revenue

- Current and historical sales growth to evaluate trends
- Compare to peers
- Are sales cyclical? What point in growth cycle are sales?

## Balance Sheet

- Analyzing a company's balance sheet varies depending on industry as certain line items may or may not exist for the particular industry
  - i.e. physical stores to measure sales per square foot

## Cash Flow Analysis

- Assessing cash inflows and outflows
- Are there unexpected or sudden cash outflows?
- What is the company's main source of cash inflow? Is it sales? Or is it debt issuance?

# Issuer Specific Research & Analysis

59

- There are a variety of useful topics to explore when analyzing corporate bond issues

## Ratio Analysis

- There are various ratios that can be used to assess a company's value as well as its efficiency of operations, etc.

## Management & Corporate Governance

- Important to pay attention to the "make-up" of management (i.e. How long have professionals been in management/leadership role? Have there been any recent changes to the "make-up"?)
- Read management presentations/letters
- What kind of checks and balances are in place?

## Equity Analysis

- Analysis to determine a company's value. Through determining a company's value, an investor can assess if the current offered equity price is properly valued
  - If the company is overvalued, its debt / equity ratio may be overly optimistic

## Bond Covenants

- How restrictive are covenants? What type of covenants exist?
- Is the company at risk for breaching a covenant?
  - Generally bonds have few covenants, but loans and revolving lines of credit, which are valuable sources of capital have covenants which, if breached, would have an influence on corporate bonds

# Issuer Specific Research & Analysis

60

- There are a variety of useful topics to explore when analyzing corporate bond issues

## NRSRO Ratings

- Nationally recognized statistical rating organizations – NRSROs. Ratings from NRSROs can help assess the credit worthiness of an investment, however ratings should not be the only determinant to assess value in a corporate bond
- For a list of NRSROs, visit the Office of Credit Ratings on the SEC website at <http://www.sec.gov/ocr>

## Capital Structure

- What does the company's capital structure (how it finances itself) look like?
- What are the main sources of financing?

## Liquidity

- Does the company have access to cash or assets which can be converted to cash relatively quickly?
- How much liquidity does the company current have relative to its amount of liabilities?
- How does the company's liquidity compare to industry standards (peers)?

## Event Risk

- There are situations that can negatively affect a company, these situations are referred to as Event Risk.
- These situations can refer to actual events such as a terrorist attack or corporate takeover (i.e. merger & acquisition) or potential events that can affect a company's rating or liquidity (i.e. if certain covenants are breached)

# Ratio Analysis

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- Ratio analysis is used to help evaluate a corporation's financial and operating trends which are useful for investment decisions.

## Interest Coverage

- Used to determine how easily a company can pay interest on outstanding debt

$$= \frac{EBIT}{Interest\ Expense}$$

## Total Debt/Capital

- Measures a company's financial leverage

$$= \frac{Debt}{Shareholders\ Equity + Debt}$$

## Return on Equity

- The amount of net income returned as a percentage of shareholders equity

$$= \frac{Net\ Income}{Shareholders\ Equity}$$

## Free Cash Flow/Debt

- Debt coverage ratio – estimates the amount of time it would take to repay debt if all FCF was devoted to debt repayment

$$= \frac{Free\ Cash\ Flow}{Debt}$$

## Debt/EBITDA

- Measures a company's ability to pay off its incurred debt

$$= \frac{Debt}{EBITDA}$$

## Debt/Equity

- Measures a company's financial leverage

$$= \frac{Total\ Liabilities}{Shareholders\ Equity}$$

## Short term Debt/Total Debt

- Measures a company's reliance on short-term debt

$$= \frac{Short - term\ Debt < 1YR}{Total\ Debt}$$

# Ratio Analysis

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- Efficiency ratios are an overall category that include specific measures of how well a company is using various resources.

## Asset Turnover

- Measures a company's ability to generate sales from its assets

$$= \frac{\text{Net Sales}}{\text{Avg Total Assets}}$$

## Accounts Receivable Turnover

- Measures how many times a business can turn its accounts receivable into cash during a period

$$= \frac{\text{Net Credit Sales}}{\text{Avg Accounts Receivable}}$$

## Days Sales in Inventory

- Measures the number of days it will take a company to sell all of its inventory

$$= \frac{\text{Ending inventory}}{\text{Cost of Good Sold}} \times 365$$

## Working Capital Ratio

- Also called the current ratio or liquidity ratio. Measures a company's ability to pay off its current liabilities with current assets

$$= \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

- Ratio analysis can be compared across peers to determine a company's relative strengths and weaknesses as well as to gauge the value of the various calculated ratios
- Ratio analysis is more useful when compared across a timeframe rather than just using a specific point in time. Through comparing values over time, one can gather intelligence on a company's current performance

# Section 7

Types of risks associated with corporates and comparison to other asset classes.

# Investment Benefits and Considerations

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## Benefits

- **Diversification**
  - The universe of available corporate bonds is vast, encompassing different sectors of the economy as well as a range of investment objectives (interest rate, maturity, etc), for short-term investors, diversification away from financial risk is very important
  
- **Steady income**
  - Most fixed income corporate bond securities pay interest semi-annually, allowing for a steady income stream to the investor
  
- **Attractive yields**
  - Corporate bonds offer a higher yield than similar-maturity government bonds
  
- **Liquidity**
  - The market is very large and secondary trading is quite active.

## Considerations

- **Economic/Market risk**
  - Market and economic dynamics can affect new corporate bond issuance as well as trading spreads
  
- **Credit risk**
  - Measured by the likelihood of default . This risk is calculated in both the bond rating as well as the spread over the appropriate treasury rate
  
- **Interest rate risk**
  - Fluctuations in interest rates can cause movements in the price and subsequently, the bonds yield and return, if sold before maturity
  
- **Liquidity risk**
  - Liquidity can fluctuate based on an individual issuer dynamics. An investor should not not rely on dealer liquidity as a backstop
  
- **Call risk**
  - Some corporate bonds are issued with a make-whole call which gives the issuer the option to call a bond prior to maturity.
  
- **Inflation risk**
  - As inflation fluctuates, so will an investor's real return

# Investment Benefits and Considerations

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- Individual issuers have their own risk profiles that must be considered before making an investment decision.

## Credit Risk

- Each corporation operates in a unique manner therefore factors that affect credit risk, which include default and rating changes, can vary

## Event Risk

- Each corporation is subject to both industry and company specific situations that may cause adverse changes to the company's financial strength

## Liquidity Risk

- Liquidity risk will vary from company to company as well as across the various maturities available from a specific company

## Call Risk

- Call risk can vary dramatically from company to company as well as within a corporation, as there may be economic and non-economic reasons for a company to call bonds away at any time



# Managing Risk

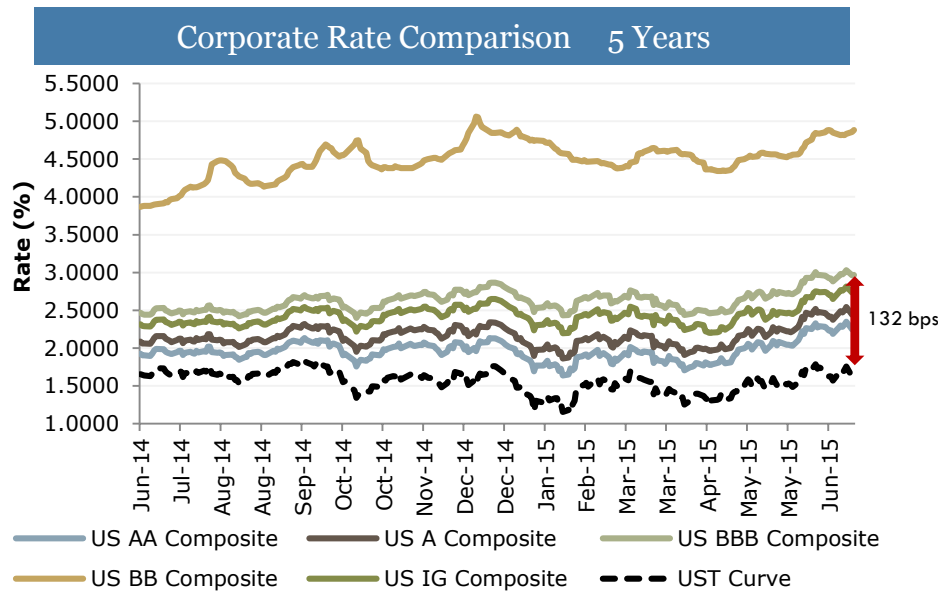
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- Investors can manage and/or reduce risk in a variety of ways:
  - Diversification
    - Industries/Sectors
    - Issuers
    - Maturities
  - Credit research and analysis
    - There are a variety of resources for investors to acquire knowledge of a corporation and its debt such as rating agency reports, credit analyst reports, etc
  - Credit monitoring
    - Ongoing monitoring of corporate bonds to analyze rating changes, spread changes as well as current news, will help investors manage risk

# Corporate Bond Spread Indications

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- Below are spreads for the various rating categories for Corporate bonds. The current spread for BBB rated Corporate bonds, as pointed out in the chart to the left, is 132 bps



Current Rates (%)		Spreads	
AA	2.2740	AA / BB	261.1 bps
A	2.4700	AA / BBB	69.2 bps
BBB	2.9660	AA / UST	62.61 bps
BB	4.8850	A / UST	82.21 bps
IG	2.7490	<b>BBB / UST</b>	<b>131.81 bps</b>
UST	1.6479		

Data as of June 30, 2015

Source: Wells Fargo Securities, Bloomberg

# Monitoring Corporate Issuers

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Issuers should be monitored on a daily basis to help anticipate changes in credit quality

- Key Aspects of Credit Research:
  - ▣ Quarterly and Annual Earnings, Revenues, Cash Flows
  - ▣ Credit ratios over time and relative to peers
  - ▣ Bond Covenants and Changes to Issuer's Capital Structure
  - ▣ Equity Performance
  - ▣ Event Risk
  - ▣ NRSRO Ratings Changes
  - ▣ Industry Trends and Economic Cycles
  - ▣ Overall news flow (issuer-specific, industry, and economic)

# Resources

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- There are a variety of sources in which to obtain information for analyzing corporate bonds, including:
  - SEC filings
  - Press releases
  - Credit research reports
  - Equity research reports
  - Bloomberg
  - News publications, ie. Wall Street Journal, Financial Times, Reuters
  - Management presentations
  - Investor/analyst meetings

# Key Terms

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**Collateral** - Assets pledged by a borrower to secure repayment of a loan or bond.

**Coupon** – A bond's stated interest rate.

**Default** – A borrower's failure to make timely payments of interest and principal when due or to meet other requirements related to the bonds.

**Face Value** – The value that appears on the front, or face, of a bond, which represents the amount the issuer promises to repay at maturity. Also known as par or principal amount.

**Interest** – Compensation paid or to be paid for the use of money, generally expressed as an annual percentage rate. The rate may be constant over the life of the bond (fixed-rate), or may change from time to time by reference to an index (floating-rate).

**Liquidity** – Capacity of a market to absorb a reasonable level of buying/selling without significant movements in the price.

**Maturity** – The date when the principal amount of a bond becomes due and payable.

**Security** – Collateral pledged by a bond issuer (debtor) to an investor (lender) to secure repayment of the loan.

**Volatility** – The propensity of a security's price to rise or fall.

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