Fixed Income

Securities & Markets
First: Securities
Then: Markets

What's a Fixed Income Security?

- A fixed-income security is a financial obligation of an entity (the issuer) that **promises to pay a specified sum of money at specified future dates**
  - A fixed-income security is an instrument that allow governments, companies, and other types of issuers to **borrow money** from investors.
    - Any borrowing of money is "debt"
  - The terms "fixed-income securities", "debt securities", and "bonds" are used interchangeably

Why are bonds issued?

- Debt issuers have financing needs that must be met
- These funding needs may include:
  - 1) infrastructure projects (schools, roads, hospitals, etc.) for governments;
  - 2) business expansion for corporations, and
  - 3) liquidity and credit needs for financial institutions.

Who Gets to Issue Bonds?

- Countries (or units of government: states, cities…) that are viewed as having the resources to meet the **debt service** requirements
- Firms/companies viewed the same way

- Secret: it's typically permanent capital and therefore very frequently NOT paid off, but is "**rolled**"

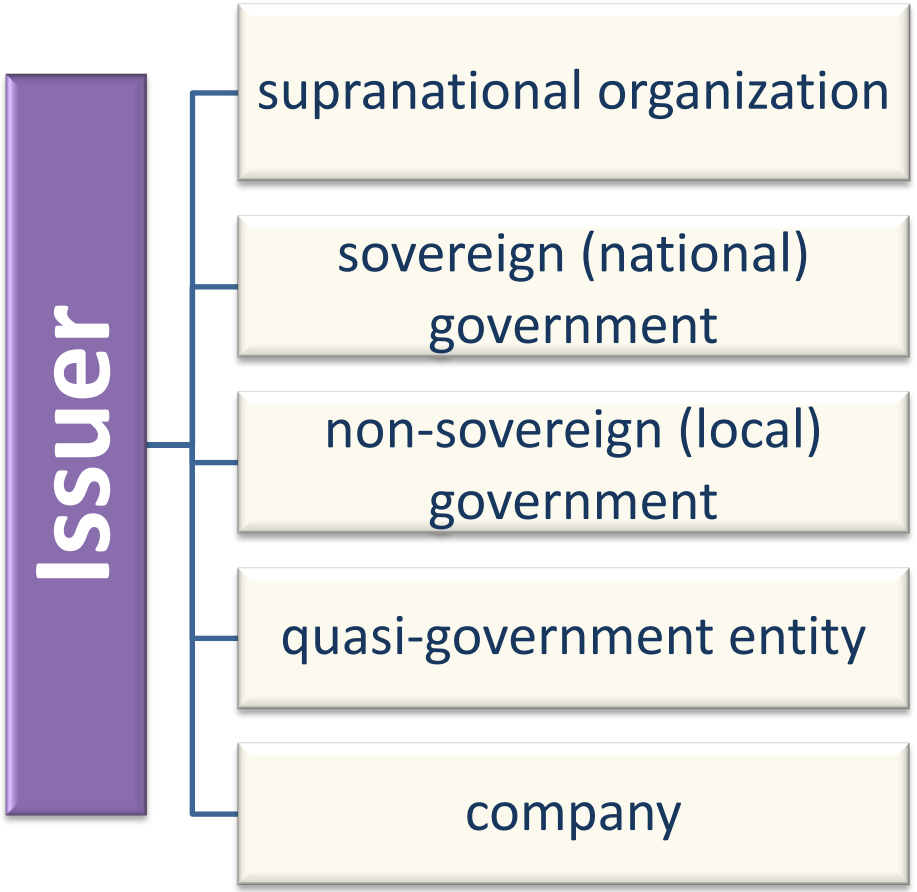
Overview of a Fixed Income Security

- There are three important elements when investing in a fixed-income securities:
  - The bond features: including the issuer, maturity, par value, coupon rate and its frequency, and currency denomination
  - The legal, regulatory, and tax considerations
  - The contingency provisions that MAY affect the bond's scheduled cash flows
- All bonds, whether they are traditional or securitized bonds, are characterized by the same basic features

Basic Features of a Bond

Creditworthiness

- investment-grade bonds
- non-investment-grade bonds



Basic Features of a Bond

Maturity

- The maturity date is the date when the issuer is obligated to redeem the bond.
- The tenor, also known as term to maturity, is the time remaining until the bond's maturity date.
  - Money market securities are fixed-income securities with maturity up to one year.
  - Capital market securities are fixed-income securities with maturity longer than one year.

Par value (principal) of a bond

- The par value of a bond is the amount the issuer agrees to repay the bondholders on the maturity date.

Basic Features of a Bond

Coupon rate and frequency

- The coupon or nominal rate of a bond is the interest rate that the issuer agrees to pay each year until the maturity date.
- The coupon is the annual amount of interest payments and is determined by multiplying the coupon rate by the par value of the bond.
  - Plain vanilla bonds pay a fixed rate of interest.
  - Floating-rate notes (FRNs) or floaters pay a floating rate: a reference rate plus a spread.
  - Bonds that do not pay interest are called “zero-coupon bonds.”

Basic Features of a Bond

Currency denomination

- Bonds can be issued in any currency,
  - Most are in US Dollars, Japanese Yen, British Pounds, or Euros.

Legal, Regulatory, and Tax Considerations

Bond indenture

- The trust deed is the legal contract that describes the form of the bond, the obligations of the issuer, and the rights of the bondholders.
- This **legal contract** is often called the “bond indenture.”
- The indenture is written in the name of the issuer and references features of the bond issue, such as par value, coupon rate and frequency, maturity date, and the funding sources for the interest and principal repayments, as well as any collaterals, covenants, and credit enhancements.

Bond Indenture

Legal identity of the bond issuer and its legal form

- The legal obligation to make the contractual payments is assigned to the bond issuer. The issuer is identified in the indenture by its legal name.

For sovereign bonds	• The issuer is usually the office responsible for the national budget.
For corporate bonds	• The issuer might be a holding company or a subsidiary.
For securitized bonds	• The legal obligation usually lies with special purpose vehicles.

Bond Indenture

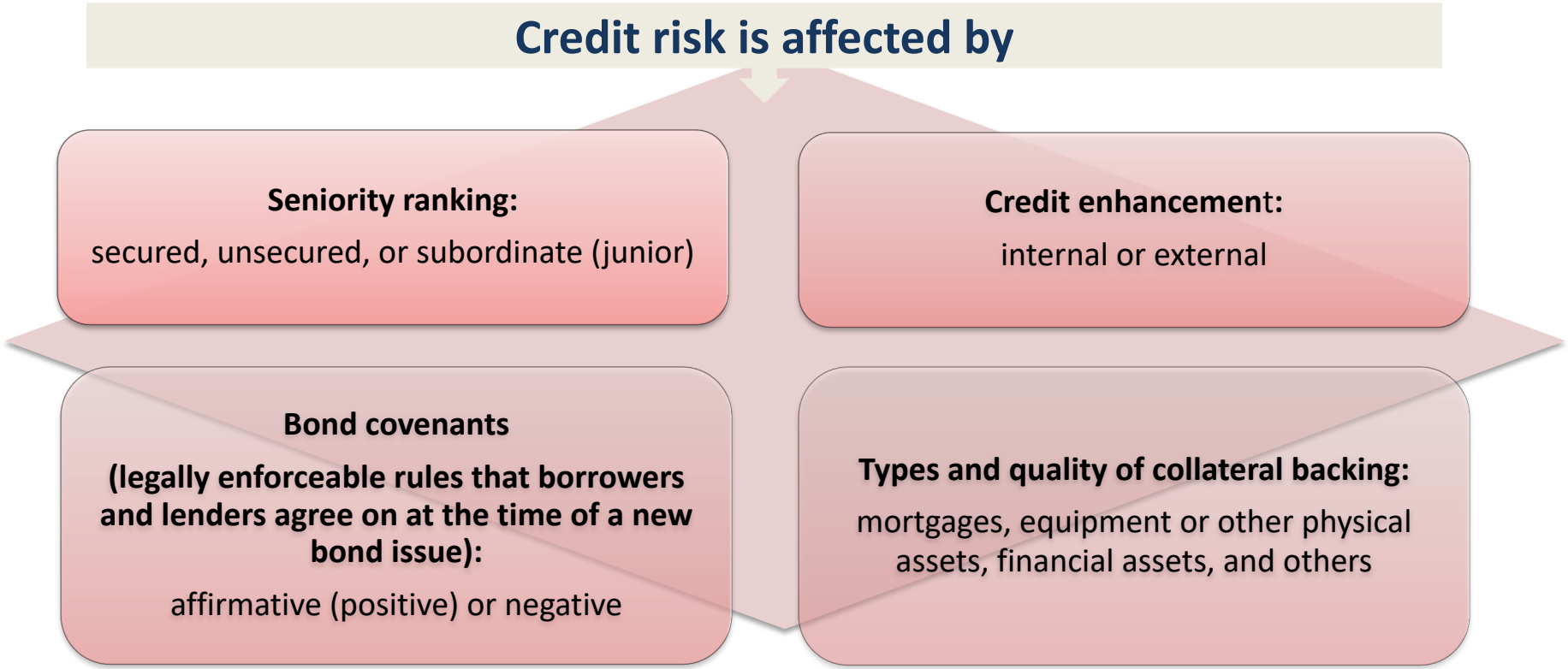
Details the sources of repayment proceeds

Sovereign bonds	• Sovereign bonds are backed by the "full faith and credit" of the national government and thus by that government's ability to raise tax revenues and print money.
Non-sovereign government bonds	• The major sources for repayment include the general taxing authority of the issuer, the cash flows of the project the bond issue is financing, and special taxes or fees established specifically for the purpose of funding the payments of interest and principal.
Corporate bonds	• The source of payment for corporate bonds is the issuer's ability to generate cash flows, primarily through its operations

Bond Indenture

What "backs" the bonds?

- Seniority, Enhancement, Covenants, or Collateral



Credit Enhancement

- Internal
  - Collateral
  - Overcollateralization (example: loan 80% of value on a home)
- External
  - Insurance – in the case of the mortgages
  - Surety Bond – a contractual agreement where a third party to a transaction provides assurance that the contractual agreement will be completed

Bond Holder Protections: “Covenants”

- Codified in the **Indenture**: the *negotiated* contract between the issuer and bondholder
- Affirmative and Negative aspects
- Can include:
  - Positive or negative statements on the use of proceeds
  - Subordination clause: restricting ability of borrower to place debt “above” yours in seniority (“Negative Pledge”)
  - Or even restrictions from taking on more debt at all
  - Collateral: A pledge on specific assets (in contrast, a “debenture” by definition has no collateral)
  - Or even restrictions that unburdened assets may not become collateral for another debt deal
  - A sinking fund: issuer must repurchase some proportion of outstanding debt before maturity
  - Restrictions on M&A, asset disposals, or distributions to shareholders

Legal and Regulatory Considerations

- Fixed-income securities are subject to different legal and regulatory requirements depending on where they are issued and traded as well as on who holds them
- There are no unified legal and regulatory requirements that apply globally
- The global bond markets consist of national bond markets and the “Eurobond” market – which is misnamed and is a global market

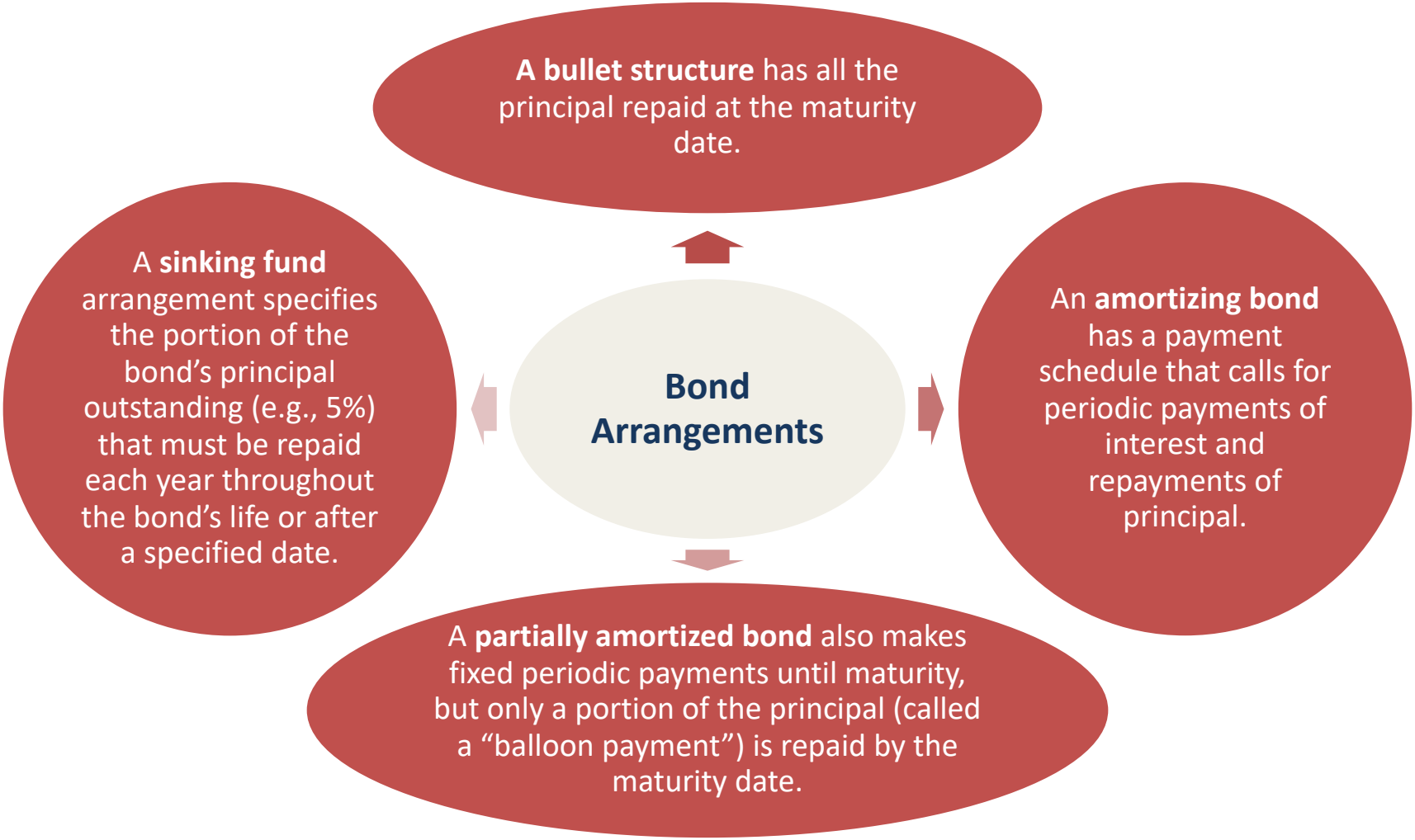
Tax Considerations

- Interest payments and capital gains are often subject to taxation. Tax treatment of both varies from jurisdiction to justification.
  - The income portion of a bond investment is typically taxed at the ordinary income tax rate. Tax-exempt securities are the exception to this rule.
  - A tax on capital gains may apply if the bond sale price exceeds the bond purchase price.
  - The original issue discount might be subject to a tax for discount bonds (such as zero-coupon bonds).

Structure of a bond's cash flows

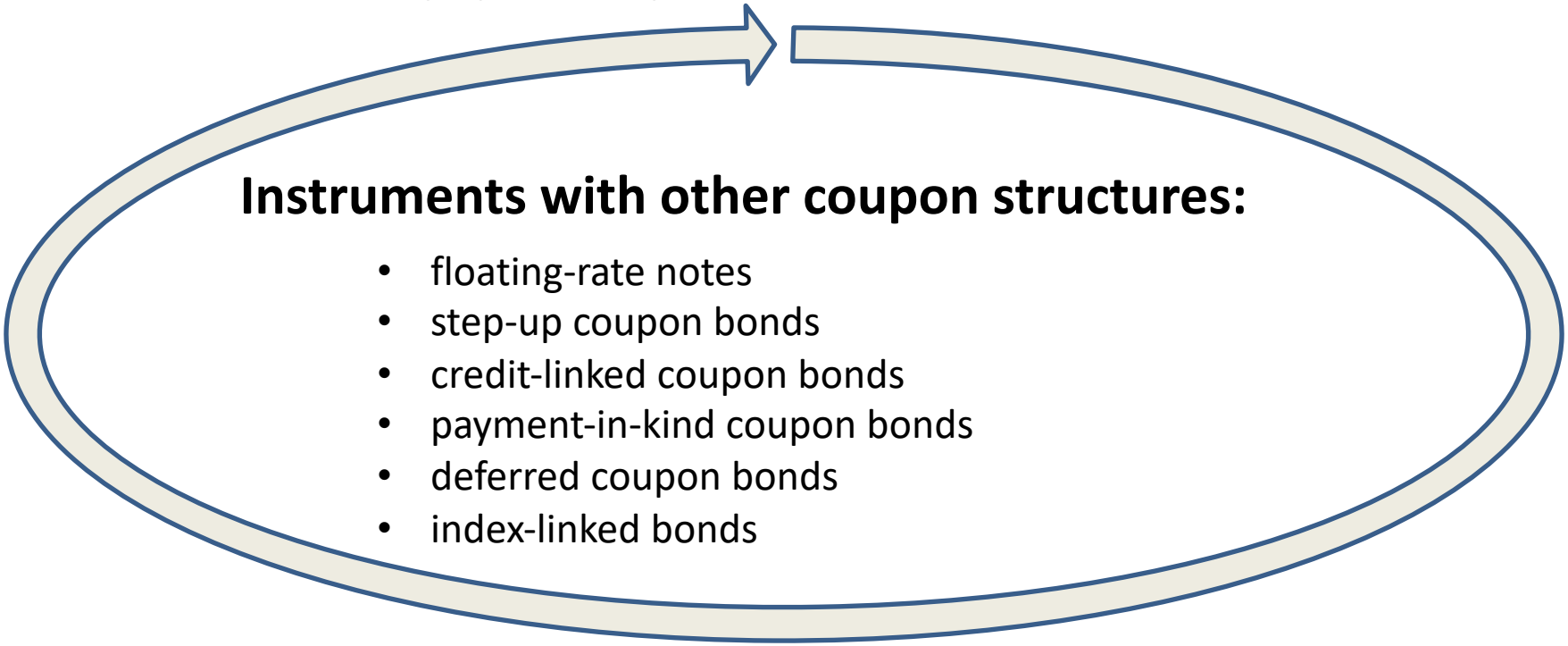
- The most common payment structure by far is that of a plain vanilla bond

Principal repayment structures



Coupon payment structures

- Conventional bonds pay a fixed periodic coupon over a specified time to maturity, typically annually or semi-annually and occasionally quarterly.



Instruments with other coupon structures:

- floating-rate notes
- step-up coupon bonds
- credit-linked coupon bonds
- payment-in-kind coupon bonds
- deferred coupon bonds
- index-linked bonds

Coupon payment structures

- FRNs typically pay a quarterly coupon.
- The coupon is determined by the formula

FRNs	are usually less affected by changes in interest rates.
FRNs	may have additional features, such as a floor or a cap.
Inverse FRNs	(inverse floaters) are bonds whose coupon rates have an inverse relationship to the reference rate.

Coupon payment structures

Step-up coupon bonds

have a fixed or floating coupon, which increases by specified margins at specified dates

offer bondholders some protection against rising interest rates and may be an important feature for callable bonds

Credit-linked coupon bonds

have a coupon that changes when the bond's credit rating changes

Are attractive to investors who are concerned about the future creditworthiness of the issuer

Coupon payment structures

Payment-in-kind (PIK) bonds

- typically allow the issuer to pay interest in the form of additional amounts of the bond issue rather than a cash payment
- typically are favored by issuers who are concerned that the issuer may face potential cash flow problems in the future

Deferred coupon (i.e., split coupon) bonds

- pay no coupon for the first few years but then pay a higher coupon than they otherwise normally would for the remainder of their life
- are also common in project financing when the assets being developed do not generate any income during the development phase

COUPON payment structures

Index-linked bonds

have their coupon payments and/or principal repayment linked to a specified index

- Bonds can potentially be linked to any published economic and financial variable/index.

- Bonds linked to a rate of inflation are called “inflation-linked bonds” (e.g., Treasury inflation-protected securities, or TIPS, in the United States.

- Cash flows of the index-linked bond can be linked to the specified index by linking the interest payments (interest-indexed bonds), the principal repayment (zero-coupon bonds), or both (capital-indexed bonds and indexed annuity bonds).
- An equity-linked note (ELN) is a fixed-income security that differs from a conventional bond in that the final payment is based on the return of an equity index.

Bonds with contingency provisions

- A contingency provision is a clause in a legal document that allows for some action if the event or circumstance does occur (i.e., embedded option).
- Some common types of bonds with embedded options include callable bonds, puttable bonds, and convertible bonds.

Bonds with contingency provisions

Callable bonds

- Callable bonds give the issuer the right to redeem all or part of the bond before the specified maturity date.
- The primary reason why issuers choose to issue callable bonds rather than non-callable bonds is to protect themselves against a decline in interest rates.

Puttable bonds

- The bondholder has the right to sell the bond back to the issuer at a pre-determined price on specified dates.
- Puttable bonds are beneficial for the bondholder by guaranteeing a pre-specified selling price at the redemption dates.

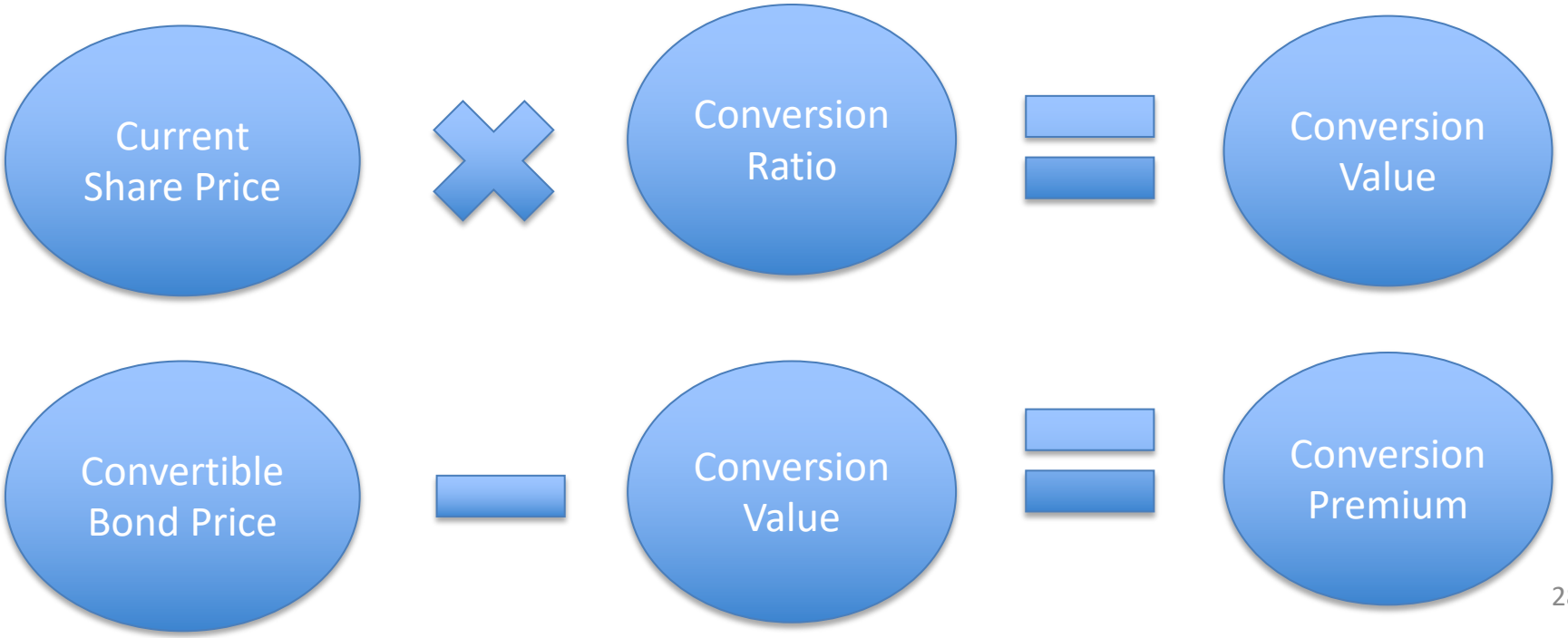
Bonds with contingency provisions

Convertible bonds

- They are a hybrid security with both debt and equity features.
- The bondholder has the right to exchange the bond for a specified number of common shares in the issuing company.
- This feature is beneficial to bondholders.
- The bondholder has the ability to convert bonds into equity in case of share price appreciation and thus participate in the equity up side.
- At the same time, the bondholder receives downside protection; if the share price does not appreciate, the convertible bond offers the comfort of regular coupon payments and the promise of principal repayment at maturity.

Bonds with contingency provisions

- The conversion price is the price per share at which the convertible bond can be converted into shares
- The conversion ratio is the number of common shares that each bond can be converted into



SUMMARY

Important elements to consider when investing in a fixed-income security

- the bond's features
- the legal, regulatory, and tax considerations
- the contingency provisions

The basic features of a bond

- the issuer, maturity, par value (or principal), coupon rate and frequency, and currency denomination

The bond indenture or trust deed

- The bond indenture is the legal contract that describes the form of the bond, the issuer's obligations, and the investor's rights.
- The indenture is usually held by a financial institution called a "trustee," which performs various duties specified in the indenture.

SUMMARY

Bond covenants

- Bond covenants are legally enforceable rules that borrowers and lenders agree on at the time of a new bond issue.
- Affirmative covenants enumerate what issuers are required to do, whereas negative covenants enumerate what issuers are prohibited from doing.

Legal and regulatory considerations

- An important consideration for investors is where the bonds are issued and traded because it affects the laws, regulations, and tax statuses that apply.

Bond arrangements

- An amortizing bond is a bond whose payment schedule requires periodic payment of interest and repayment of principal. This differs from a bullet bond, whose entire payment of principal occurs at maturity.

SUMMARY

Coupon payment structures

- fixed-coupon bonds
- floating rate notes
- bonds with step-up coupons
- bonds with credit-linked coupons
- bonds with payment-in-kind coupons
- bonds with deferred coupons

Bonds with embedded options

- Common types of bonds with embedded options include callable bonds, putable bonds, and convertible bonds.
- These options are “embedded” in the sense that there are provisions provided in the indenture that grant either the issuer or the bondholder certain rights affecting the disposal or redemption of the bond. They are not separately traded securities.

EXHIBIT 2 Domestic and International Debt Securities by Residence of Issuer at the End of December 2011

Issuers	Domestic Debt Securities (US$ billions)	International Debt Securities (US$ billions)
All issuers	**69,912.7**	**28,475.4**
United States	26,333.1	6,822.0
Japan	14,952.5	180.6
China	3,344.8	28.3
France	3,307.6	1,977.0
Italy	3,077.7	1,135.0
Germany	2,534.2	2,120.6
United Kingdom	1,743.8	3,671.4
Canada	1,547.7	710.9
Brazil	1,488.8	137.4
Spain	1,448.7	1,499.5
South Korea	1,149.0	154.6
Australia	1,023.4	586.4
Netherlands	955.5	2,019.7
Denmark	714.6	142.6
India	596.1	26.1

Source: Based on data from the Bank of International Settlements, Tables 11 and 16A, available at www.bis.org/statistics/secstats.htm, (accessed 6 September 2012).

EXHIBIT 4 Example of Payment Schedules for Bullet, Fully Amortized, and Partially Amortized Bonds

Bullet Bond

Year	Investor Cash Flows	Interest Payment	Principal Repayment	Outstanding Principal at the End of the Year
0	–$1,000.00			$1,000.00
1	60.00	$60.00	$0.00	1,000.00
2	60.00	60.00	0.00	1,000.00
3	60.00	60.00	0.00	1,000.00
4	60.00	60.00	0.00	1,000.00
5	1,060.00	60.00	1,000.00	0.00

Fully Amortized Bond

Year	Investor Cash Flows	Interest Payment	Principal Repayment	Outstanding Principal at the End of the Year
0	–$1,000.00			
1	237.40	$60.00	$177.40	$822.60
2	237.40	49.36	188.04	634.56
3	237.40	38.07	199.32	435.24
4	237.40	26.11	211.28	223.96
5	237.40	13.44	223.96	0.00

Partially Amortized Bond

Year	Investor Cash Flows	Interest Payment	Principal Repayment	Outstanding Principal at the End of the Year
0	–$1,000.00			
1	201.92	$60.00	$141.92	$858.08
2	201.92	51.48	150.43	707.65
3	201.92	42.46	159.46	548.19
4	201.92	32.89	169.03	379.17
5	401.92	22.75	379.17	0.00

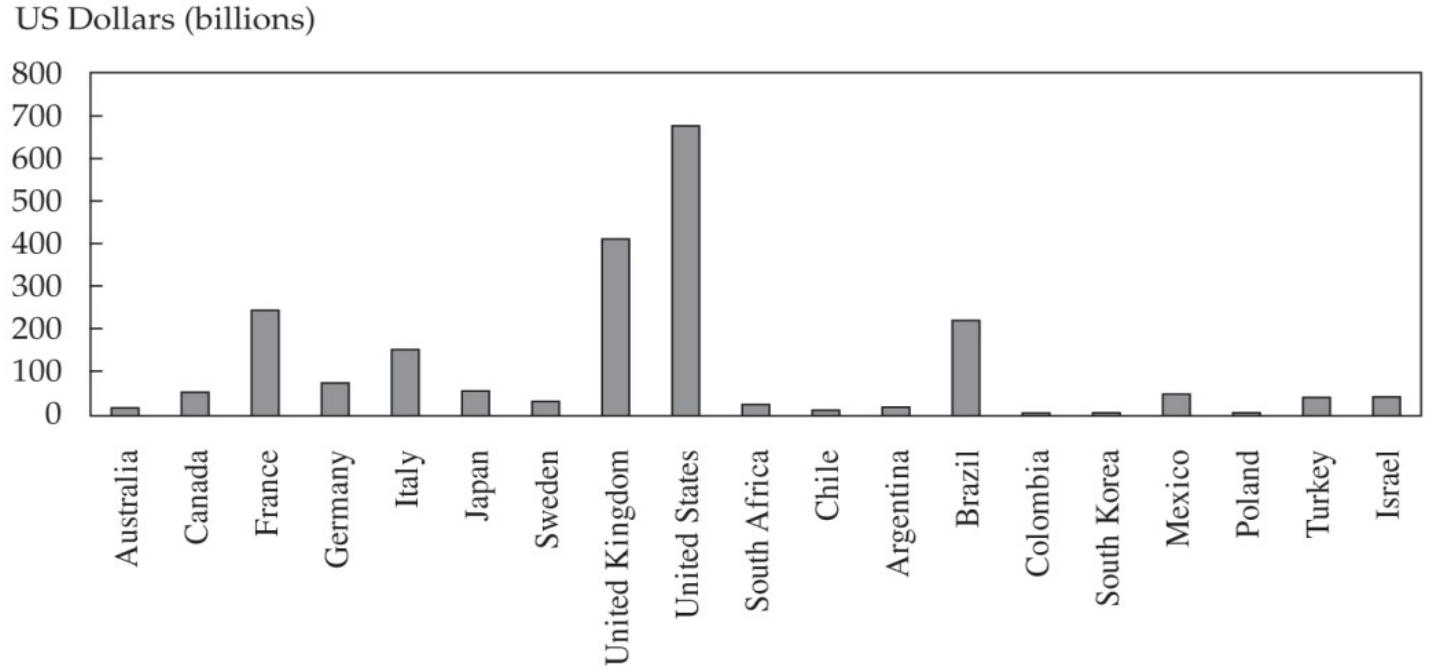
EXHIBIT 5

Example of a Sinking Fund Arrangement

The notional principal of the bond issue is £200 million. The sinking fund arrangement calls for 5% of the outstanding principal amount to be retired in Years 10 through 19, with the outstanding balance paid off at maturity in 20 years.

Year	Outstanding Principal at the Beginning of the Year (£ millions)	Sinking Fund Payment (£ millions)	Outstanding Principal at the End of the Year (£ millions)	Final Principal Repayment (£ millions)
0			200.00	
1 to 9	200.00	0.00	200.00	
10	200.00	10.00	190.00	
11	190.00	9.50	180.50	
12	180.50	9.03	171.48	
13	171.48	8.57	162.90	
14	162.90	8.15	154.76	
15	154.76	7.74	147.02	
16	147.02	7.35	139.67	
17	139.67	6.98	132.68	
18	132.68	6.63	126.05	
19	126.05	6.30	119.75	
20	119.75			119.75

EXHIBIT 6 Inflation-Linked Bonds Outstanding by Market Value at the End of December 2011



Source: Based on data from Barclays Capital.

EXHIBIT 8 Outstanding Bonds and Notes by Type of Interest Payment and Conversion Features at the End of March 2012

Type of Bond	Amount (US$ billions)	Weight
Straight fixed-rate issues	20,369.9	71.2%
Floating-rate issues	7,749.6	27.1%
Equity-related issues		
Convertibles	491.9	1.7%
Warrants	2.3	0.0%
Total	28,613.7	100.0%

Source: Based on data from the Bank of International Settlements, Table 13B, available at www.bis.org/statistics/secstats.htm (accessed 7 September 2012).

One Thousand Dollars.

№2,072

№2,072

EIGHT PER CENT. JULY 1ST 1863

THE CONFEDERATE STATES OF AMERICA LOAN.

AUTHORIZED BY ACT OF CONGRESS, FEBRUARY 20 1863

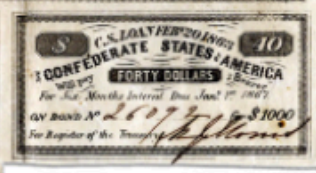
On the 1st day of July, 1868 the Confederate States of America will pay to the Bearer of this BOND at the seat of Government, or at such place of Deposit as may be appointed by the Secretary of the Treasury, the sum of ONE THOUSAND DOLLARS with interest thereon from date, at the rate of Eight per Cent per annum, payable semi annually on the surrender of the annexed Coupons. This Contract is authorized by an Act of Congress passed February 20 1863 entitled "An Act to authorize the issue of BONDS for funding Treasury notes and it is upon the express condition that said Confederate States may from time to time extend the time of payment for any period not exceeding forty years from this date, at the same rate of interest upon the issue of the bond.

1000

In Witness whereof the Register of the Treasury, in pursuance of said Act of Congress hath hereunto set his hand and affixed the seat of the Treasury at RICHMOND this 2nd day of March 1863.

Entered
Recorded

Register of the Treasury.



Fixed Income

Securities & Markets

First: Securities

Then: Markets

Introduction

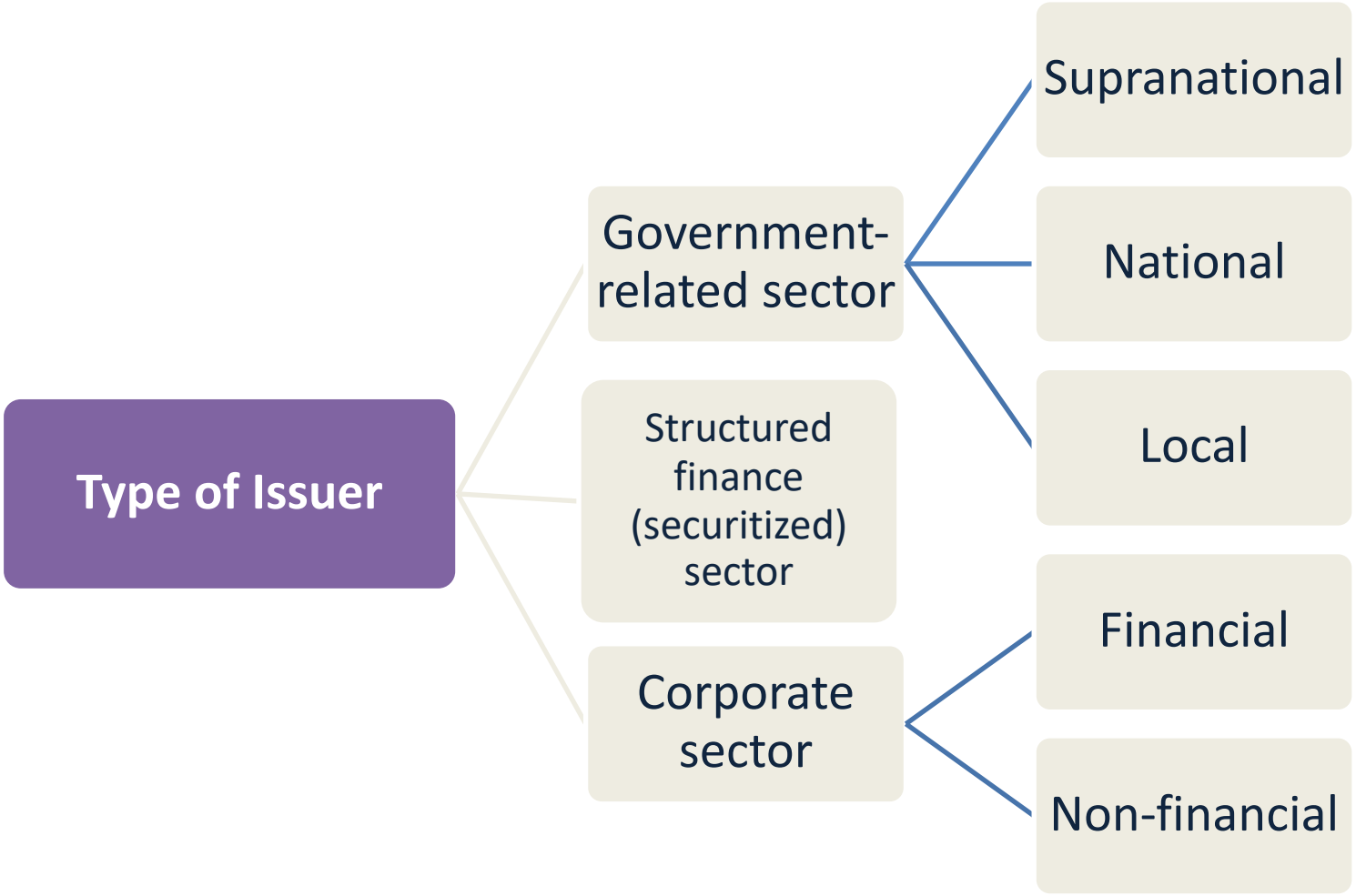
- Global fixed-income markets represent the largest subset of financial markets in terms of number of issuances and market capitalization

- Understanding how fixed-income markets are structured and how they operate is important for debt issuers and investors

Overview of Fixed Income Markets

- Classifications
  - Type of issuer
  - Maturity
  - Currency
  - Credit Quality
  - Coupon type
  - Location where it was issued and trades

Classification of fixed-income markets



Classification of fixed-income markets

Maturity

- Maturities range from overnight to perpetuity:
  - Money market securities are fixed-income securities with maturity up to one year.
  - Capital market securities are fixed-income securities with maturity longer than one year.

Credit Quality

- Credit quality is either investment grade or non-investment grade.

Classification of fixed-income markets

Geography

- The largest markets are the US (40%), Japan (19%), and the UK (6%), followed by the continental European countries.

Currency Denomination

- The most popular currencies are the EUR, USD, GBP, and JPY.

Type of Coupon

- Coupons are either fixed rate or floating rate.
- The market's demand and supply of fixed- versus floating-coupon bonds are determined by the risk management considerations of participants.

Classification of fixed-income markets

Reference Rates

- Different reference rates are used depending on where the bonds are issued and the currency denomination.
- The choice of reference rate is very important because it determines the issuer's cost of financing and the investor's return.
- LIBOR (London interbank offered rate) is the common reference rate for floating-rate notes (FRNs), particularly in the Eurobond market.
- LIBOR rates reflect the rates at which a select set of banks believe they could borrow unsecured debt from other banks.
  - interbank money market

Classification of fixed-income markets

Fixed-Income Indices

- A fixed-income index is a multi-purpose tool used by investors and investment managers to describe a given bond market or sector, as well as to evaluate the performance of investments and investment managers.
- Most fixed-income indices are constructed as portfolios of securities that reflect a particular bond market or sector.
- Index weighting may be based on price or value (market capitalization).

Classification of fixed-income markets

Investors in Fixed-Income Securities

Central banks	• invest directly in fixed-income securities • use open market operations to implement monetary policy
Institutional investors	• invest directly in fixed-income securities
Retail investors	• invest indirectly through fixed-income mutual funds or exchange-traded funds (ETFs) because of the higher complexity and diversity of bond markets

Primary and secondary bond markets

Primary bond markets

Issuers first sell bonds to investors to raise capital.

Secondary bond markets

Existing bonds are subsequently traded among investors.

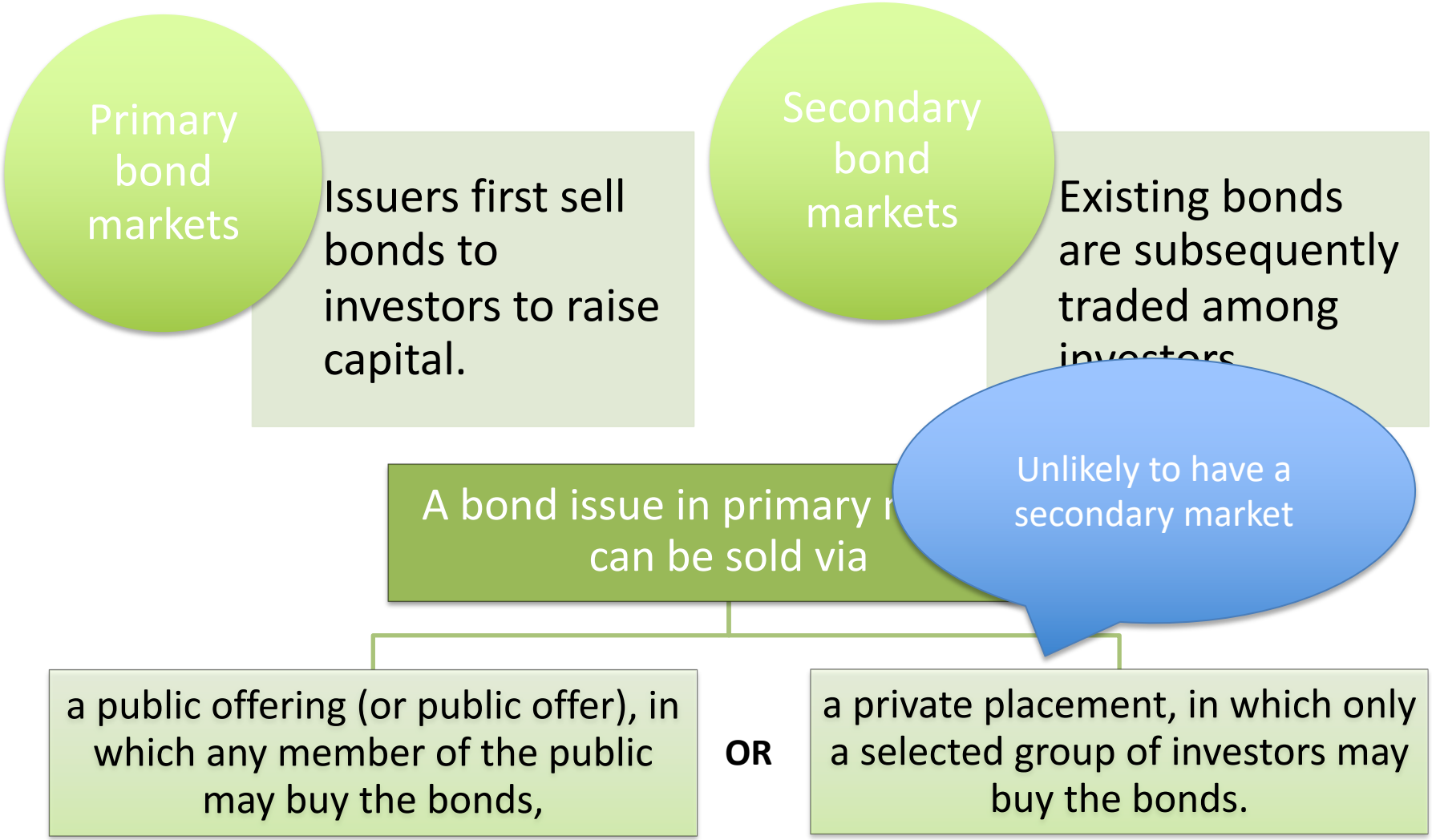
A bond issue in primary markets can be sold via

- a public offering (or public offer), in which any member of the public may buy the bonds,

OR

- a private placement, in which only a selected group of investors may buy the bonds.

Primary and secondary bond markets



Primary bond markets

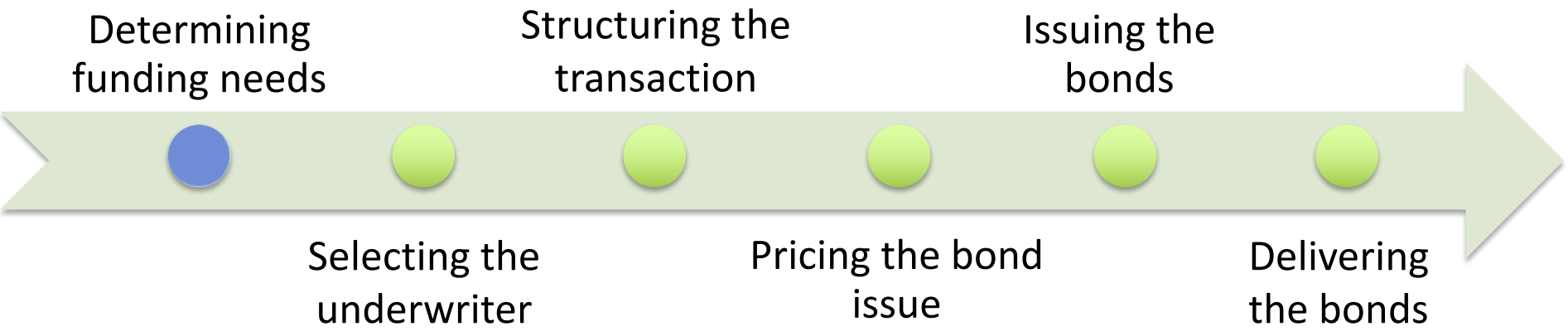
Public Offerings

Underwritten offerings	Best effort offerings	Auctions
The investment bank guarantees the sale of the bond issue at an offering price that is negotiated with the issuer.	The investment bank only serves as a broker. It only tries to sell the bond issue at the negotiated offering price if it is able to for a commission.	These are bond issuing mechanisms that involve bidding. In many countries, most sovereign bonds are sold to the public via a public auction.

Primary bond markets

Underwritten Offerings

- Underwritten offerings are typical bond-issuing mechanisms for corporate bonds, some local government bonds, and some securitized instruments.
- The underwriting process typically includes six phases:



Primary bond markets – Registration

- An Offering Circular is required, registering the security with the SEC
  - Also called a “Red”, a prospectus, or an S-2
- A **shelf registration** allows certain authorized issuers to offer additional bonds to the general public without having to prepare a new and separate offering circular for each bond issue
- Rather, the issuer prepares a single, all-encompassing offering circular that describes a range of future bond issuances, all under the same document

PRELIMINARY PROSPECTUS
Dated May 21, 1986

$50,000,000

Harley-Davidson, Inc.

% Subordinated Notes due 1996

The Subordinated Notes will be unsecured subordinated obligations of the Company, will mature on June 15, 1996, and will bear interest from June 15, 1986 at the rate per annum of %, payable semi-annually on June 15 and December 15 of each year. The Company anticipates that the Subordinated Notes will be traded in the over-the-counter market. For information concerning certain risk factors that should be considered in evaluating the Company and its business, see "Risk Factors."

The Subordinated Notes will not be redeemable prior to June 15, 1989. Thereafter, the Subordinated Notes will be redeemable at the Company's option as a whole or in part, at redemption prices declining to par at maturity, together with accrued interest. The Subordinated Notes will be subordinated in right of payment to all Senior Indebtedness of the Company as provided in the Indenture. See "Description of Subordinated Notes."

The Company is offering concurrently, by separate prospectus, 1,430,000 shares of Common Stock. See "Concurrent Offering."

THESE SECURITIES HAVE NOT BEEN APPROVED OR DISAPPROVED BY THE SECURITIES AND EXCHANGE COMMISSION NOR HAS THE COMMISSION PASSED UPON THE ACCURACY OR ADEQUACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

	Price to Public (1)	Underwriting Discounts and Commissions (2)	Proceeds to Company (3)
Per Note	%	%	%
Total (4)	$	$	$

(1) Plus accrued interest, if any, from June 15, 1986.

(2) The Company has agreed to indemnify the Underwriter against certain liabilities, including liabilities under the Securities Act of 1933.

(3) Before deduction of expenses payable by the Company estimated at $.

(4) The Company has granted the Underwriter a 30-day option to purchase up to an additional $7,500,000 principal amount of Subordinated Notes at the above price to public, less underwriting discounts and commissions, to cover over-allotments, if any. If all such Subordinated Notes are purchased, the total price to public will be $, the total underwriting discounts and commissions will be $ and the total proceeds to Company will be $. See "Underwriting."

The Subordinated Notes are offered by the Underwriter when, as and if received and accepted by it, subject to its right to reject orders in whole or in part and subject to certain other conditions. It is expected that delivery of the Subordinated Notes will be made in New York, New York on or about June , 1986.

DEAN WITTER REYNOLDS INC.

June , 1986.

Secondary Bond Markets

- There are two main ways for secondary markets to be structured:

An **organized exchange** provides a place where buyers and sellers can meet to arrange their trades. Although buy or sell orders may come from anywhere, the transaction must take place at the exchange according to the rules imposed by the exchange.

In contrast, in **over-the-counter** (OTC) markets buy and sell orders initiated from various locations are matched through a communications network.

Sovereign bonds

- Sovereign bonds are the bonds issued by national governments. Bond names vary depending on the country of issue and the bond's maturity.

In the United States, Treasury bills (T-bills) are one year or shorter, Treasury notes (T-notes) have maturity between 1 year and 10 years, and Treasury bonds (T-bonds) have an original maturity of longer than 10 years.

- The majority of the trading in secondary markets is of sovereign securities that were most recently issued. These securities are called "on the run."

Sovereign bonds

- Sovereign bonds are usually unsecured obligations of the sovereign issuer. That is, they are not backed by collateral but by the taxing authority of the national government.

Local currency sovereign bonds have low(er) credit risk because of the taxing and money-issuing power of the government.

Foreign currency sovereign bonds' credit risk depends on the strength of the national economy and government finances.

Sovereign bonds

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

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

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

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

Non-sovereign government, quasi-government, and supranational bonds

Non-sovereign government bonds

Issued by governments below the national level, such as provinces, regions, states, and cities.

- These bonds are typically issued to finance public projects, such as schools, motorways, hospitals, bridges, and airports.
- The sources for paying interest and repaying the principal include the taxing authority of the local government, the cash flows of the project the bond issue is financing, and special taxes and fees established specifically for the purpose of making interest payments and principal repayments.

Non-sovereign government, quasi-government, and supranational bonds

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

Non-sovereign government, quasi-government, and supranational bonds

Quasi-government bonds

Issued by quasi-government organizations, which are established to perform some functions for the government.

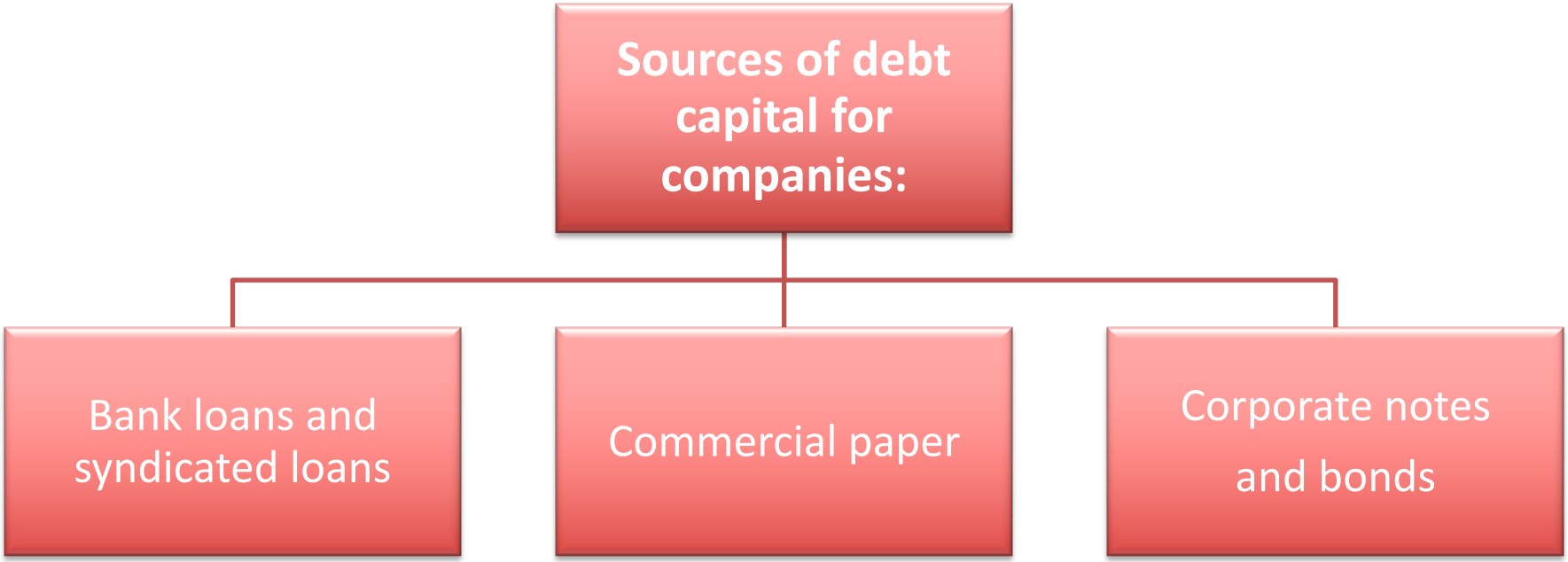
- Most quasi-government bonds do not offer an explicit guarantee by the national government, although investors often perceive an implicit guarantee.
- Quasi-government entities typically do not have direct taxing authority; instead, bonds are repaid from the cash flows generated by the entity or from the project the bond issue is financing.

Supranational bonds

Issued by supranational agencies, such as the World Bank, the International Monetary Fund (IMF), and the Asian Development Bank (ADB).

Corporate debt

Companies raise debt as part of their overall capital structure, both to fund short-term spending needs (e.g., working capital) as well as long-term capital investments.



Corporate debt

Bilateral loan

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

Syndicated loan

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

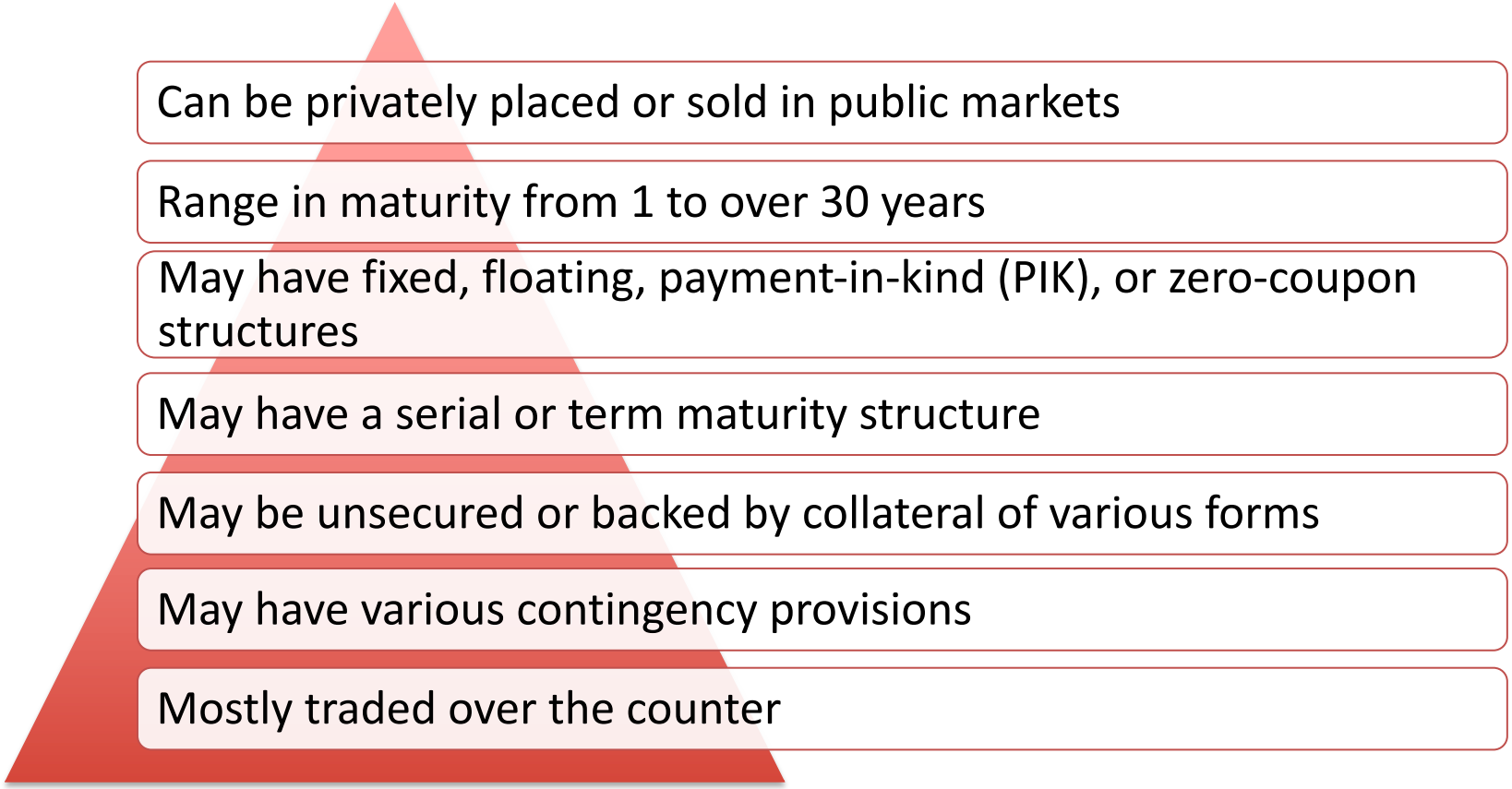
Corporate debt

Commercial paper

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

Corporate debt

- Corporate notes and bonds are the debt instruments issued by private companies and have the following characteristics:



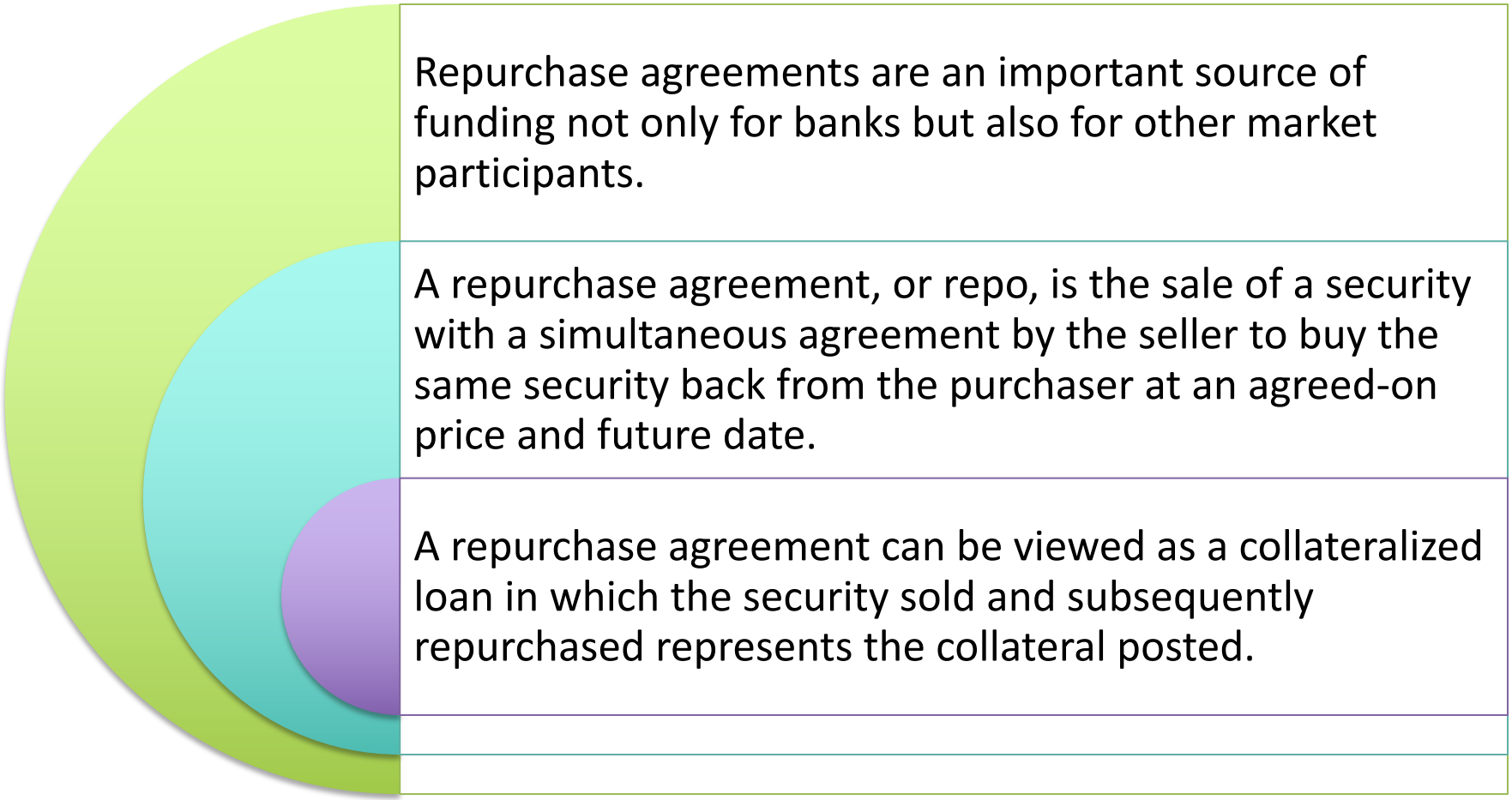
Short-term funding alternatives available to banks

- Financial institutions, such as banks, have larger financing needs than non-financial companies because of the nature of their operations.

Banks have access to funds from these sources:	
The retail market—for example, deposits from their customers	The wholesale market—for example, central bank funds, interbank deposits, certificates of deposit, and repurchase agreements

Short-term funding alternatives available to banks

Repurchase agreements



Short-term funding alternatives available to banks – “Repo”

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

More on Secured Funding – "Repo"

- Repurchase Agreements (Repo)
  - The major funding source to attain and carry your securities inventory
- A collateralized funding source
  - Backed by (typically) sovereign debt (US Treasuries)
  - Basically a collateralized loan
  - Can get up to ~98% funding on a Treasury asset
  - Most common term is overnight
- Frequently transacted at the lowest interest rates
- Federal funds ("Fed funds") as the benchmark
  - A managed rate (not a market rate), set by Fed
  - Rate at which banks can borrow from the Fed
  - Becomes benchmark for rate at which banks, and securities dealers, can lend to each other

More on Overnight Borrowing & The Repo Market

- Need cash: pledge your securities holdings as collateral to attain funds, pay an interest charge
  - Often used simply to gain the funds needed to buy and hold the security itself
- Have cash to put to work: offer cash overnight in exchange for securities as collateral and earn a fee
  - Often used to park cash for shortest possible term

LIBOR – a short-term global benchmark

- London Interbank Offered Rate (in contrast to LIBID)
- A market rate
- Unsecured funding
- BBA: thrown out post-scandal, now ICE (Intercontinental Exchange, which also now owns the NYSE)
  - But being phased out
- Rates in 5 currencies and 7 maturities
  - CHF, EUR, GBP, JPY and USD
  - Overnight to 12 months; “3 month LIBOR” gets the most focus
- Average rate at which a bank can obtain unsecured funding from another bank
- Methodology: poll up to 18 banks, throw out top and bottom 4, average the others

How LIBOR Rate is used

- Five year term loan, priced today at 3 mo LIBOR + 300, Quarterly pay, Quarterly reset
  - 3 Mo LIBOR today is 1%
  - First coupon due in 3 months = 1% + the spread of 3% = 4%
  - Then on that payment date the next coupon is determined
- Add a “floor”: benefits the lender
  - “If LIBOR Is <1%, the coupon should be calculated as if it were 1%. Then the coupon is 4%
- What if there were a cap?: benefits the borrower
  - If rates are above 12%, the coupon should be calculated as if it were 12%

LIBOR goes away 2021

- LIBOR problems
  - Interbank S-T lending has declined (fewer transactions based on LIBOR)
  - Reputation damaged in ‘07-’09
  - Sometimes estimated rather than based on actual transactions
- SOFR
  - Secured Overnight Financing Rate
  - A deep, robust, & transparent market
  - Where US Treasuries are borrowed or loaned overnight

Emphasizing Other Funding Mechanisms for Banks

- Retail
  - Demand deposits and savings accounts
- Wholesale: aka “Buy money”
  - In addition to any repo or LIBOR transactions
  - Negotiable Certificates of Deposit
    - Which can be traded further on the secondary market

SUMMARY

Classifications of fixed-income markets

- The most widely used ways of classifying fixed-income markets include the type of issuer; bond maturity, credit quality, geography, currency denomination, and type of coupon; and where the bonds are issued and traded.

Use of interbank offered rate as a reference rate

- Interbank offered rates, such as Libor, are the most commonly used reference rates for floating-rate debt and other financial instruments.
- Interbank offered rates are sets of rates that reflect the rates at which banks believe they could borrow unsecured funds from other banks in the interbank market for different currencies and different maturities.

SUMMARY

Bond issuance in primary markets

- There are two mechanisms for issuing a bond in primary markets: a public offering, in which any member of the public may buy the bonds, or a private placement, in which only an investor or small group of investors may buy the bonds either directly from the issuer or through an investment bank.

Secondary markets for bonds

- Most bonds are traded in over-the-counter (OTC) markets, and institutional investors are the major buyers and sellers of bonds in secondary markets.

Sovereign bonds

- Sovereign bonds are issued by national governments primarily for fiscal reasons. They take different names and forms depending on where they are issued, their maturities, and their coupon types.

SUMMARY

Non-sovereign government and supranational bonds

- Local governments, quasi-government entities, and supranational agencies issue bonds, which are named non-sovereign, quasi-government, and supranational bonds, respectively.

Corporate bonds

- Companies raise debt in the form of bilateral loans, syndicated loans, commercial paper, notes, and bonds.

Banks' funding alternatives

- Financial institutions have access to additional sources of funds, such as retail deposits, central bank funds, interbank funds, large-denomination negotiable certificates of deposit, and repurchase agreements.

SUMMARY

Repurchase agreements

- A repurchase agreement is similar to a collateralized loan.
- It involves the sale of a security (the collateral) with a simultaneous agreement by the seller (the borrower) to buy the same security back from the purchaser (the lender) at an agreed-on price in the future.
- Repurchase agreements are a common source of funding for dealer firms and are also used to borrow securities to implement short positions.

EXHIBIT 2 Global Debt and Equity Outstanding for Various Countries and Economic Areas at the End of December 2010 (US$ trillions)

Economic Area	Bank Loans	Securitized Debt Instruments	Bonds Issued by Non-financial Companies	Bonds Issued by Financial Companies	Bonds Issued by Governments	Stock Markets	Total Capital as a Percentage of GDP
United States	$44	$77	$31	$116	$75	$119	462%
Japan	106	10	18	31	220	72	457
Western Europe	110	15	19	115	72	69	400
Other Developed	91	29	20	47	49	152	388
China	127	2	10	16	28	97	280
India	60	4	1	7	44	93	209
Middle East and Africa	66	2	5	6	15	96	190
Other Asia	54	1	10	7	34	62	168
Latin America	27	3	3	20	38	57	148
CEE and CIS	62	0	2	6	24	48	142

Note: CEE and CIS stand for Central and Eastern Europe and Commonwealth of Independent States, respectively.

Source: Data are from Exhibit E2 in Charles Roxburgh, Susan Lund, and John Piotowski, "Mapping Global Capital Markets," McKinsey & Company (2011):8.

EXHIBIT 3 Amounts of International Bonds Outstanding by Currency Denomination at the End of December 2011

Currency	Amount (US$ billions)	Weight
Euro (EUR)	9,665.9	46.0%
US Dollar (USD)	6,900.8	32.9
British Pound Sterling (GBP)	2,052.3	9.8
Japanese Yen (JPY)	762.0	3.6
Swiss Franc (CHF)	393.4	1.9
Australian Dollar (AUD)	317.2	1.5
Canadian Dollar (CAD)	313.1	1.5
Swedish Krona (SEK)	103.0	0.5
Norwegian Krone (NOK)	86.4	0.4
Hong Kong Dollar (HKD)	63.5	0.3
Yuan Renminbi (CNY)	38.9	0.2
Other Currencies	305.0	1.5
Total	**21,001.5**	**100.0%**

Source: Based on data from Bank of International Settlements, Tables 13A and 13B, available at www.bis.org/statistics/secstats.htm (accessed 12 December 2012).

EXHIBIT 4 Amount of Bonds Outstanding by Residence of Issuer and Type of Issuer at the End of December 2011 (US$ billions)

	All Issuers		Government		Financial		Non-Financial	
Country	Amount	Global Weight	Amount	Sector Weight	Amount	Sector Weight	Amount	Sector Weight
United States	$33,582	40%	$12,954	39%	$14,938	44%	$5,690	17%
Japan	15,700	19	11,552	74	3,111	20	1,038	7
United Kingdom	5,275	6	2,040	39	2,537	48	699	13
Germany	4,383	5	2,079	47	2,175	50	129	3
France	4,382	5	1,910	44	1,947	44	525	12
Italy	3,686	4	2,078	56	1,492	40	116	3
Spain	2,307	3	871	38	1,416	61	19	1
Netherlands	2,246	3	401	18	1,730	77	116	5
Canada	1,899	2	1,178	62	399	21	322	17
Australia	1,847	2	479	26	1,186	64	182	10
Rest of the world	8,748	10	3,184	36	4,830	55	734	8
Total	**$84,055**	**100%**	**$38,726**	**46%**	**$35,761**	**43%**	**$9,570**	**11%**

Source: Based on data from Bank of International Settlements, Tables 13A and 13B, available from www.bis.org/statistics/secstats.htm (accessed 12 December 2012).

EXHIBIT 5 Amounts of Bonds Outstanding at the End of December 2011 and Amounts of Net Bond Issuances in 2011 by Residence of the Issuer (US$ billions)

Country	Amount of Bonds Outstanding	Net Bond Issuances
United States	$33,582	$559.7
Japan	15,700	457.5
United Kingdom	5,275	77.2
Germany	4,383	25.5
France	4,382	322.1
Italy	3,686	197.6
Spain	2,307	64.2
Netherlands	2,246	65.2
Canada	1,899	111.7
Australia	1,847	100.8
Rest of the world	8,748	1,796.2
Total	**$84,055**	**$3,777.7**

Source: Based on data from Bank of International Settlements, Tables 14A, 14B, and 16A, available at www.bis.org/statistics/secstats.htm (accessed 30 October 2012).

EXHIBIT 6 Results of a US Treasury Public Auction on 16 October 2012

Term and Type of Security		28-Day Bill
CUSIP Number		9127955L1
High rate[a]		0.125%
Allotted at high		21.85%
Price		99.990278
Investment rate[b]		0.127%
Median rate[c]		0.115%
Low rate[d]		0.100%
Issue date		18 October 2012
Maturity date		15 November 2012
	Tendered	**Accepted**
Competitive	$160,243,967,000	$39,676,092,000
Non-competitive	224,607,300	224,607,300
FIMA (non-competitive)	100,000,000	100,000,000
Subtotal[e]	$160,568,574,300	$40,000,699,300[f]
SOMA	$0	$0
Total	$160,568,574,300	$40,000,699,300
	Tendered	**Accepted**
Primary Dealer[g]	$137,250,000,000	$26,834,200,000
Direct Bidder[h]	13,450,000,000	4,079,425,000
Indirect Bidder[i]	9,543,967,000	8,762,467,000
Total Competitive	$160,243,967,000	$39,676,092,000

[a]All tenders at lower rates were accepted in full.
[b]Equivalent coupon-issue yield.
[c]50% of the amount of accepted competitive tenders was tendered at or below that rate.
[d]5% of the amount of accepted competitive tenders was tendered at or below that rate.
[e]Bid-to-cover ratio: $160,568,574,300/$40,000,699,300 = 4.01.
[f]Awards to combined Treasury Direct systems = $134,591,900.
[g]Primary dealers as submitters bidding for their own house accounts.
[h]Non-primary dealer submitters bidding for their own house accounts.
[i]Customers placing competitive bids through a direct submitter, including Foreign and International Monetary Authorities placing bids through the Federal Reserve Bank of New York.
Note: FIMA stands for Foreign and International Monetary Authority and reflects the non-competitive bids made by investors from foreign countries. SOMA stands for System Open Market Account and reflects the Federal Reserve's open market operations.
Source: Based on information from www.treasurydirect.gov.

EXHIBIT 8 USCP vs. ECP

Feature	US Commercial Paper	Eurocommercial Paper
Currency	US dollar	Any currency
Maturity	Overnight to 270 days[a]	Overnight to 364 days
Interest	Discount basis	Interest-bearing basis
Settlement	$T + 0$ (trade date)	$T + 2$ (trade date plus two days)
Negotiable	Can be sold to another party	Can be sold to another party

[a]In the United States, securities with an original maturity in excess of 270 days must be registered with the Securities and Exchange Commission (SEC). To avoid the time and expense associated with an SEC registration, issuers of US commercial paper rarely offer maturities longer than 270 days.

Next

- We've finished our introduction to fixed income securities
- **Make sure you understand what that first bullet means** and that you understand what we've gone over
- We move on to valuation & some math
- Prepare Petitt Chapter 3, Intro to Fixed Income Valuation, and Chapter 4, Fixed Income Risk & Return
- Use end of chapter problems to check your understanding

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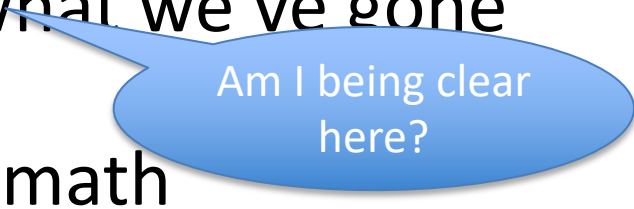

Chapter 4

- Don’t get lost in the weeds of duration calculations
- How do a bond’s maturity, coupon, embedded options, and yield level effect interest rate risk?
- Estimate the percentage price change of a bond for a specified change in yield, given duration and convexity
- Why is effective duration the most important measure of interest rate risk?
- Understand holding period return and investment horizon
- Useful chapter end questions are 1-3, 10, 11, 27