UNIVERSITY OF CALGARY
HASKAYNE SCHOOL OF BUSINESS

Investments & Portfolio Management

Capital Markets and Financial Instruments

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The Financial Markets

The Money Market (for issuance of short term fixed income instruments)

The Capital Markets comprising

- The Bond Market (issuance of bonds and subsequent trading thereof)
- The Stock Markets (issuance of shares and subsequent trading thereof)

The Derivative Markets (for creation of derivatives and subsequent trading thereof)

The Commodity Markets (for the trading of commodities, spot and otherwise)

The Foreign Exchange Markets (for the trading of currencies, spot and otherwise)

The Interbank and Repo markets (overnight lending among banks and security dealers)

Money Market Instruments (typically with maturities up to a year)

- Treasury Bills (issued by a state like Government of Canada)
- Guaranteed Investment Certificate ('GIC', issued by a bank)
- Commercial Paper ('C/P', issued by a major corporate)
- Bankers' Acceptance ('B/A', a sort of commercial paper guaranteed by a bank)
- Asset-backed Commercial Paper ('ABCP', issued by a securitization vehicle)

A money market instrument is typically issued or traded at a discount and does no pay interest, so the return is from the amount invested and the face value paid at maturity.

- Bond equivalent yield (annualized discount / purchase price; t in days)

$$r = \left[\frac{1000 - P}{P}\right] \times \frac{365}{t} = \left[\frac{1000 - 960}{960}\right] \times \frac{365}{182} = 8.356\%$$

- Effective annual yield (term yield compounded to annual rate)

$$r = \left[\frac{1000}{P}\right]^{\frac{365}{t}} - 1 = \left[\frac{1000}{960}\right]^{2} - 1 = 8.531\%$$

The Bond Market

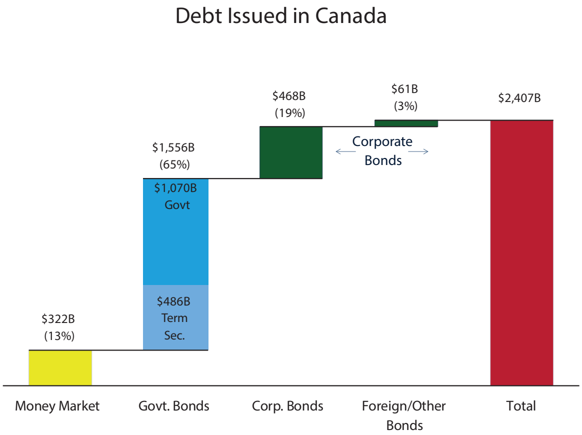
Bonds and bond-like Instruments (typically with maturities more than a year)

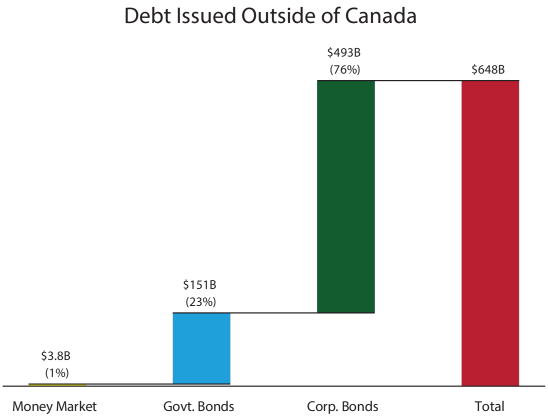
- Government Bonds (issued by a state like Government of Canada)
- Inflation-Protected Bonds (e.g. Real Return Bonds issued by Government of Canada).
- Corporate Bond (issued by a corporate, often with a call provision for issuer to pay early)
- Convertible Bonds (issued by a corporate and convertible into equity of said corporate)
- Mortgage-backed security ('MBS', issued by securitized pools of mortgages)
- Asset-backed Security ('ABS', issued by a securitization vehicle)

Interest, aka the coupon rate, is typically paid semi-annually.

The riskiness (i.e. probability of default) of a given fixed-income security is quantified by a credit rating (e.g. from AAA to D) from a credit rating agency (e.g. Moody's).

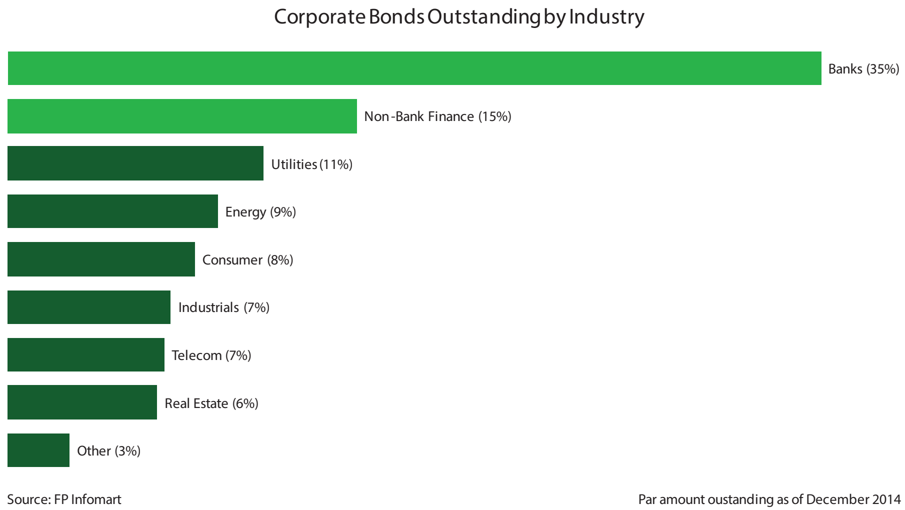
Outstanding Canadian Fixed-Income Securities



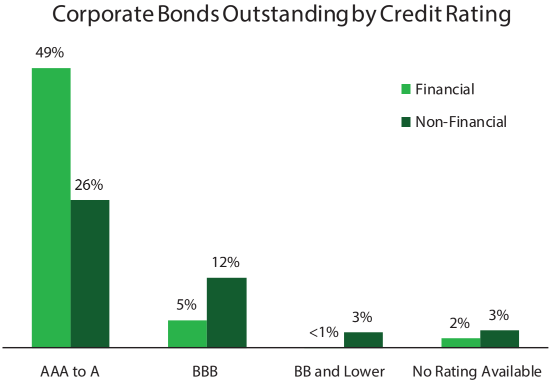


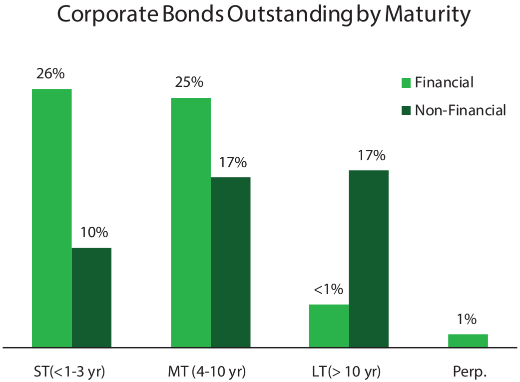
Outstanding par, as of December 2014

Source: OSC from Statistics Canada, Bank of Canada


Corporate Bonds Outstanding by Industry
Banks (35%)
Non-Bank Finance (15%)
Utilities (11%)
Energy (9%)
Consumer (8%)
Industrials (7%)
Telecom (7%)
Real Estate (6%)
Other (3%)
Source: FP Infomart
Par amount oustanding as of December 2014

Canadian Corporate Bonds Profile





Source: FP Infomart

Par amount oustanding as of December 2014

ST = Short-Term MT = Medium-Term LT = Long-Term

Equity issued by private for-profit firms

Common stock

- Residual ownership claim and limited liability

Preferred stock

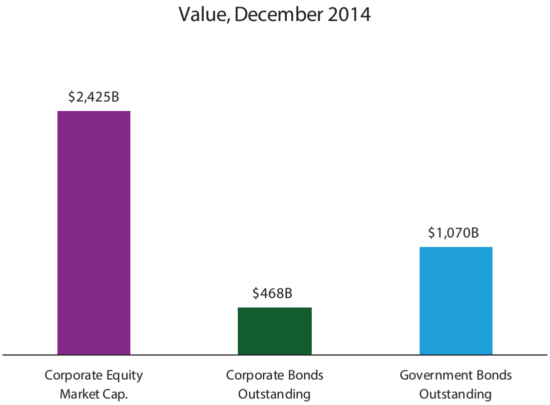
- Fixed dividend in perpetuity with priority over common stock
- Could be redeemable or convertible

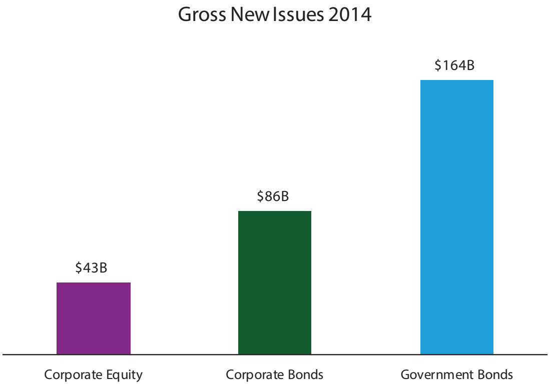
Income trusts

- A form of equity which was tax-advantageous in Canada between 1985 and 2006.

Dividends are paid at the discretion of the firm.

Canadian Equity and Debt Market Comparisons





Source: Statistics Canada, World Federation of Exchanges

A derivative is a contract which specify payoffs contingent on the price on an underlying.

- The payoffs are a zero-sum game between the two parties.
- However, risk can be transferred from one party to the other.
- Furthermore, if the risk-exposure of each party is mirror-like, the risk borne by each party can be greatly mitigated through a derivative between the two parties.
- So, derivatives can help allocate risk within an economy in an optimal manner and therefore contribute to economic growth.

Forward (typically custom-made)

- A contract to buy or sell an asset at a pre-agreed price and quantity at a future point.

Option (typically standardized and exchange-traded)

- Gives the buyer the right, but not the obligation, to buy or sell an asset at a future point.

Future (typically standardized and exchange-traded, sometime cash-settled)

- A standardized forward contract between parties not known to each other.

SWAP (typically custom-made and cash-settled)

- Contract to exchange cash-flows for a certain time.

Market Indices

A market index is used to describe a given security market as a whole (e.g. the S&P500).

- Used as benchmark for performance evaluation (for active management)
- Used to create a portfolio that duplicates an index (for passive management)
- Could be used as underlying to devise a derivative (e.g. E-mini S&P)

However the index composition (how specific securities are selected and why some are excluded) and how much weight is given to each security is not trivial and somewhat controversial.

- Capitalization weighted: weight each security according to its total market value.
  - full weighting: all outstanding shares are included
  - float-weighted: all shares owned by the general public are included
- Equally weighted: weight each security equally (e.g. Barron's 400)
- Price weighted: weight each security according to its price (e.g. Dow30).

Applications in chapter 2 of the textbook

Concept checks

- Suggest to do concept checks 1 to 6 (solutions provided at the end of the chapter).

Exercises

- Suggest 2-11 and 2-12.
- Solutions follow next slides, and Excel solution file in available in D2L.

	P0	Q0	P1	Q1	P2	Q2
A	90	100	95	100	95	100
B	50	200	45	200	45	200
C	100	200	110	200	55	400
Index	80		83.33		83.33	
Return			4.17%		0.00%	

Given the stock split of C taking effect in period 2, the denominator for the index in period 2 equals the sum of prices in period 1 as if the split did occur in period 1 divided by the index in period 1 as previously calculated.

2-12 Solution

	P0	Q0	P1	Q1	P2	Q2
A	90	100	95	100	95	100
B	50	200	45	200	45	200
C	100	200	110	200	55	400
Mrk Index	39,000		40,500		40,500	
Return			3.85%		0.00%	
A return			5.56%		0.00%	
B return			-10.00%		0.00%	
C return			10.00%		0.00%	
Eq. Return			1.85%		0.00%	