PerpetualDiscounts Theory & Practice

February 26, 2009
Toronto

This seminar is being filmed for later distribution

Preferred Shares

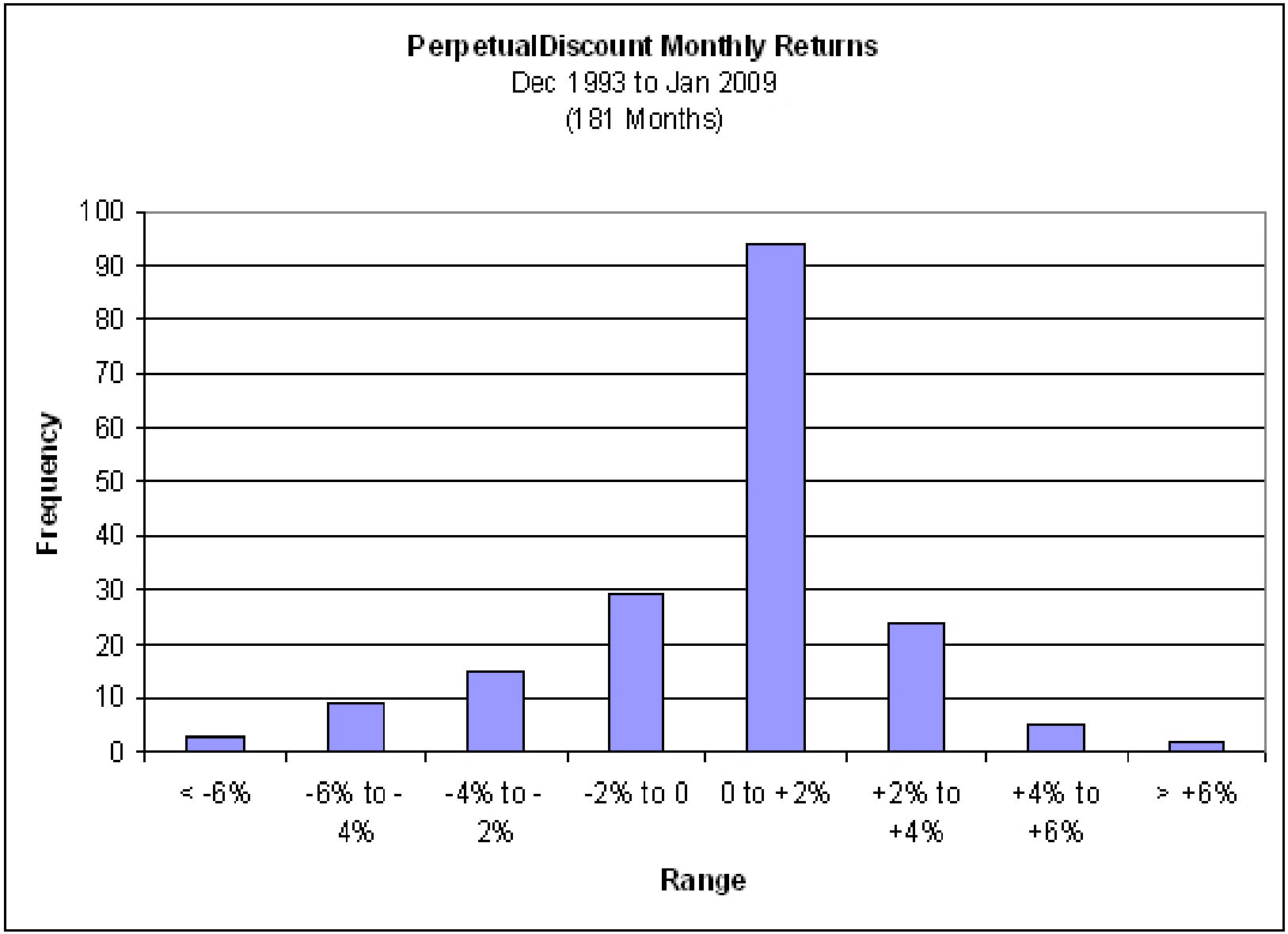
- Fixed rate & Schedule of income
– Holders CAN’T put company into bankruptcy
– Little or no chance for Capital Gain from issue price
– Asymmetric risk / reward
– No dilution of claims (quality may suffer)
– Income is received as dividends
– Have First-Loss Protection

“Straight” Perpetuals

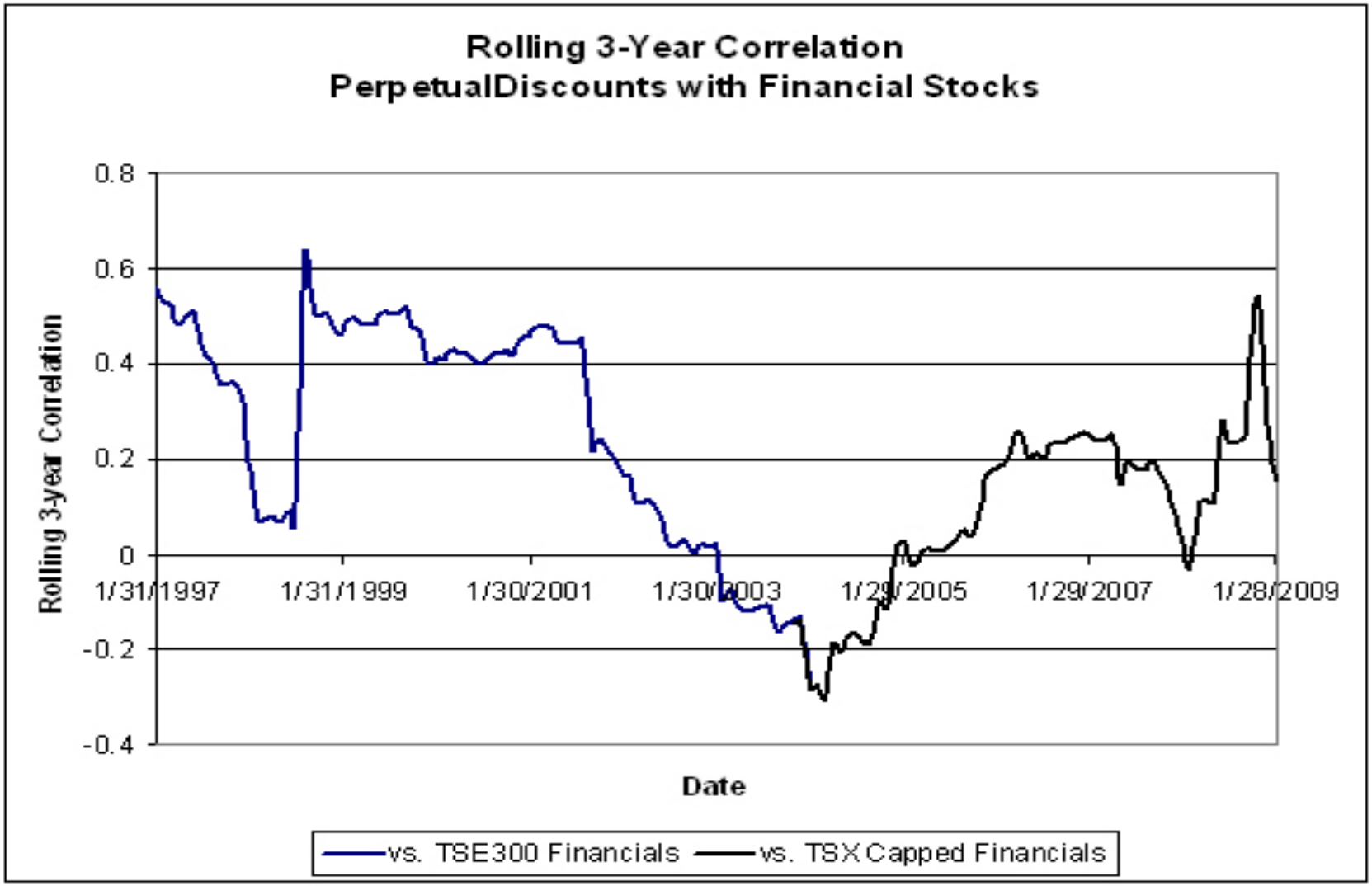
- Fixed income payments, no maturity date
  - Floaters are also perpetual!
- Redeemable by issurer, no retractions
  - Calls are bad!
- May be cumulative or non-cumulative
- Banks, Insurers, Utilities, Opportunists
- Highest return, highest risk
- Credit quality extremely important

PerpetualDiscounts

- A sub-class of Straight Perpetuals
- Trading price below their lowest call price
  - Makes risk/reward profile more symmetric
  - Not necessarily indicative of credit problems
- Will not “run off the books”
  - Increases importance of credit quality


PerpetualDiscount Monthly Returns
Dec 1993 to Jan 2009
(181 Months)
Frequency
100
90
80
70
60
50
40
30
20
10
0
≤ -6%
-6% to -4%
-4% to -2%
-2% to 0
0 to +2%
+2% to +4%
+4% to +6%
≥ +6%
Range

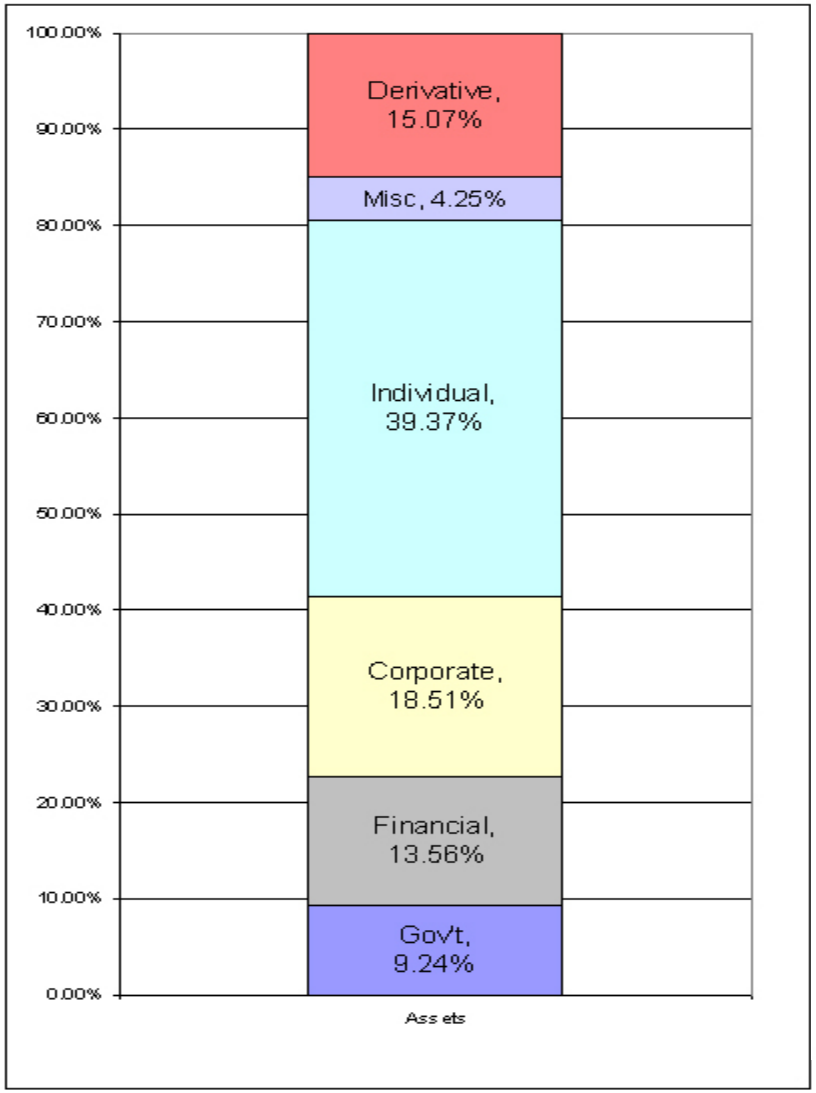
PerpetualDiscounts Do Not Behave Like Financial Equities

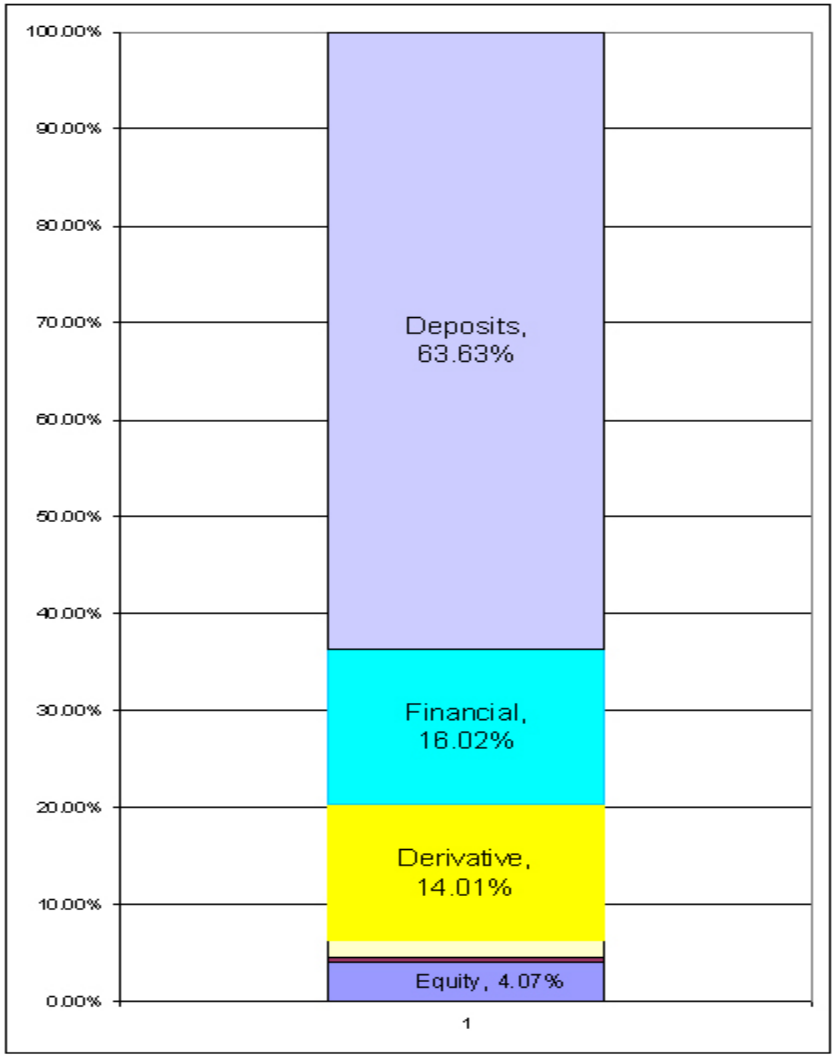


Credit Quality

Banks & Insurers

Bank Balance Sheets





Bank Credit: Asset Quality

- Leverage in Canada is constrained to 20x
  - Total Capital / (Assets + Some Exposures)
  - Banks may apply for relaxation to 23x
- Some assets are riskier than others
  - T-Bill has same balance sheet effect as credit-card receivable
- Regulatory focus is to protect depositors
- Need a buffer against unexpected losses

Banks: Risk Weighted Assets

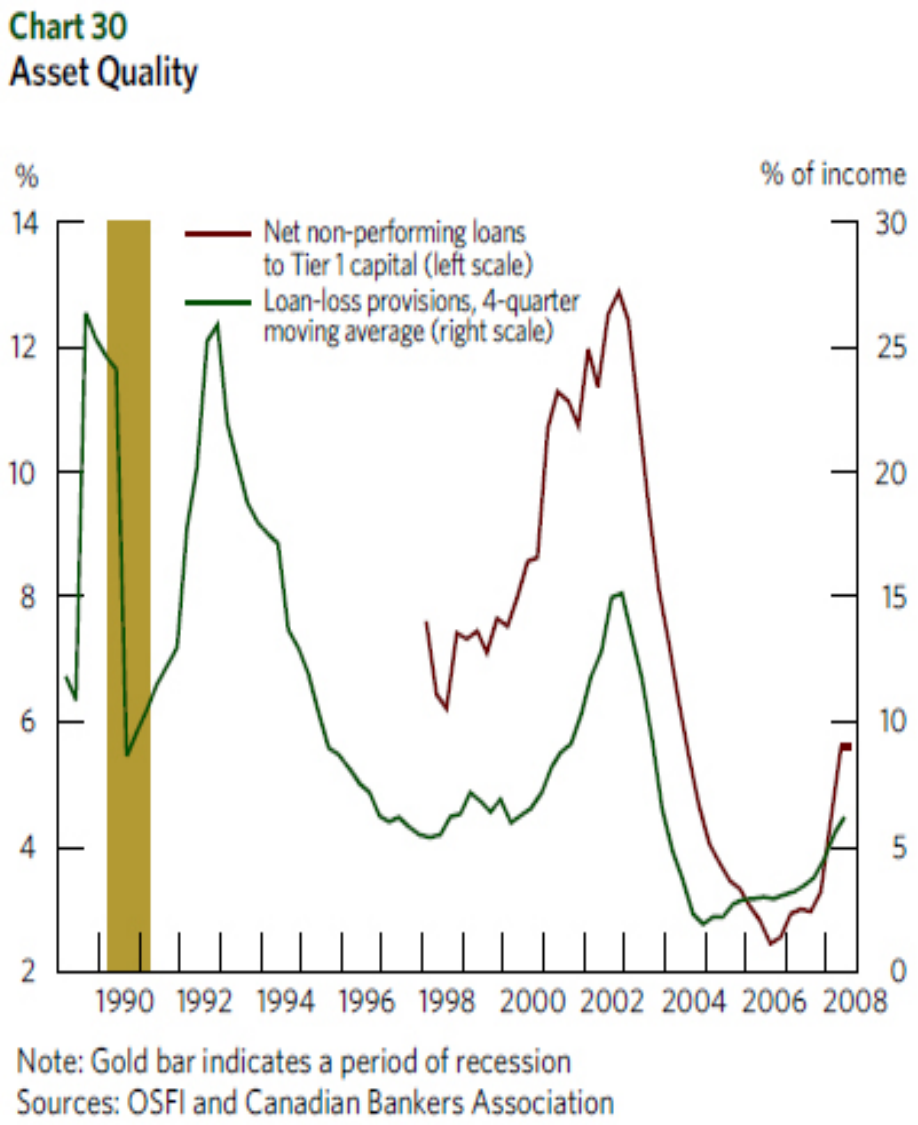
- A “Risk-Weight” is determined for all balance-sheet and off-balance-sheet items
- Treasuries & Canadas have credit risk 0%
- Claims on banks and corporations
  - AAA to AA- : 20%
  - A+ to A- : 50%
- Retail (RBC average is 22%)
  - Mortages 35% (less if insured; RBC average is 8%)
  - Unsecured 75%
- Other factors based on term, unused credit lines, etc.
- Market Risk, Operational Risk

Banks: Capital Ratios 4Q08

	ACM	Equity/RWA	Tier 1 Capital
RY	20.1	6.70%	9.00%
NA	16.7	6.70%	9.40%
BNS	18.2	7.00%	9.30%
TD	19.3	7.30%	9.80%
BMO	16.4	7.50%	9.80%
CM	18.9	7.70%	10.50%

Banks: Credit Ratings

	DBRS	S&P	Moodys
CM	Pfd-1 [Trend Neg]	P-1(low)	Aa3
NA	Pfd-1(low)	P-2(high)	A1
RY	Pfd-1	P-1(low)	Aa2 [Outlook Negative]
BNS	Pfd-1	P-1(low)	Aa3
TD	Pfd-1	P-1(low)	Aa2
BMO	Pfd-1	P-1(low)	Aa3



Bank of Canada

Financial System Review

… an excellent resource

- They aren't trying to sell you anything!
- Warnings of ABCP vulnerability in 2003 were spot-on
- www.bankofcanada.ca

Bank of England has very good research.

Credit Quality: Insurers

- Capital Requirements set by OSFI (MCCSR: Minimum Continuing Capital and Surplus Requirements)
  - Apply only to operating insurers, not holding companies … be careful!
- Capital Requirement set by exposure to risks, including
  - Segregated Funds
  - Annuities
- Ratio of 150%+ Total Capital Required at Operating Level
  - 190-200% Normal
  - … but preferreds are generally at the Holding Company level

Insurers: Gross Leverage Measures

	Tangible Holdco Equity* (CAD Millions)	Stock Leverage	Bond Leverage	Seg Fund Leverage
IAG	1,411	95%	811%	632%
ELF	2,483	33%	146%	232%
GWO	5,434	99%	1546%	1431%
SLF	8,305	54%	711%	792%
MFC	17,239	48%	869%	956%

*Common Equity + External Subsidiary Capital - Intangibles

Insurers: Credit Ratings

	DBRS	S&P	Moodys
IAG	Pfd-2(high)	P-1(low)	NR
ELF	Pfd-2(low)	P-2(high)	NR
GWO	Pfd-1(low)	P-1(low)	NR
SLF	Pfd-1(low)	P-1(low)	Baa2
MFC	Pfd-1(low)	P-1(low)	NR

Note that SLF / Moody's ranking is four notches below NA; six below TD & RY on Bond Scale

Credit Quality: Taking a View

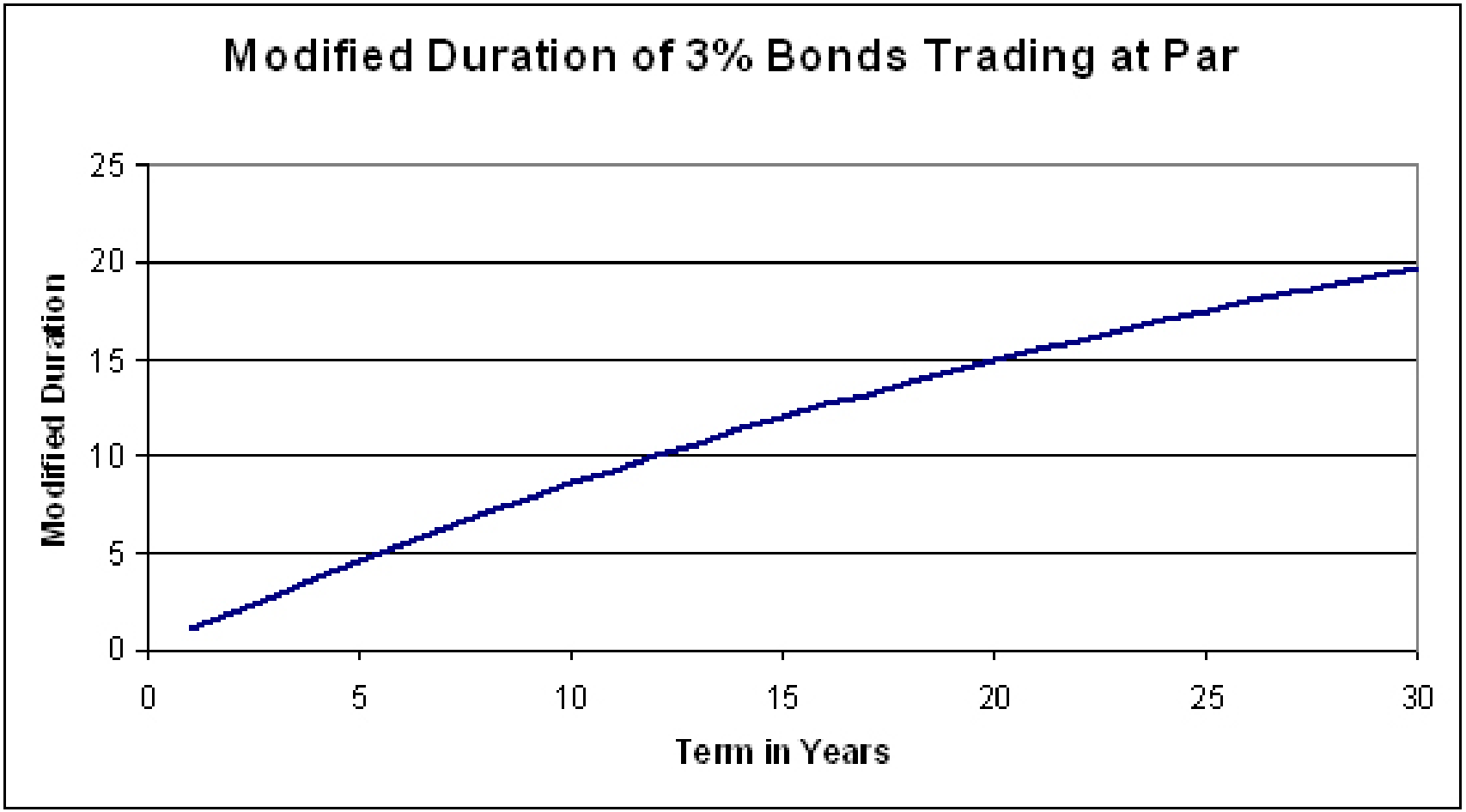
- Rating Agencies have access to material non-public information
  - Opinions are relatively reliable
  - Read the Ratings Announcements
  - Adjust if you're uncomfortable
- OSFI doesn't care about you!
  - Focus is on the operating subsidiaries; no authority over holding companies (unlike banks, due to Bank Act restrictions)
- Companies will cherry-pick data

Market Sensitivity

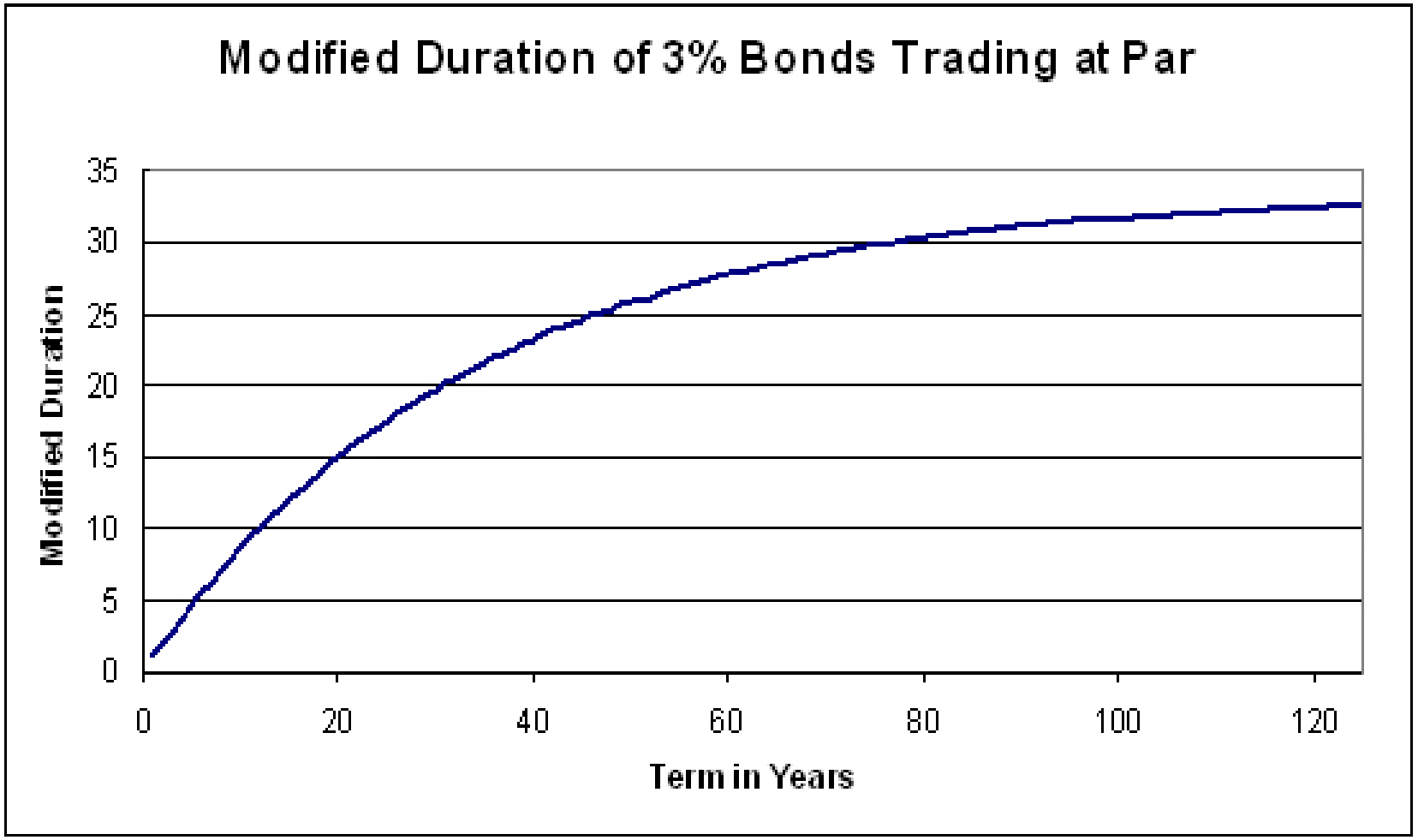
Interest Rate Sensitivity

- Modified Duration describes the change in price for a given change in yield
  - Accurate for small changes only … say one or two percent
  - Calculation does not take account of calls

Modified Duration Increases with Term…



… But There is a Limit



Modified Duration Equations

Modified Duration of a Perpetual

$$D_{Mod} = 1 / y$$

Price Change for Given Change in Yield

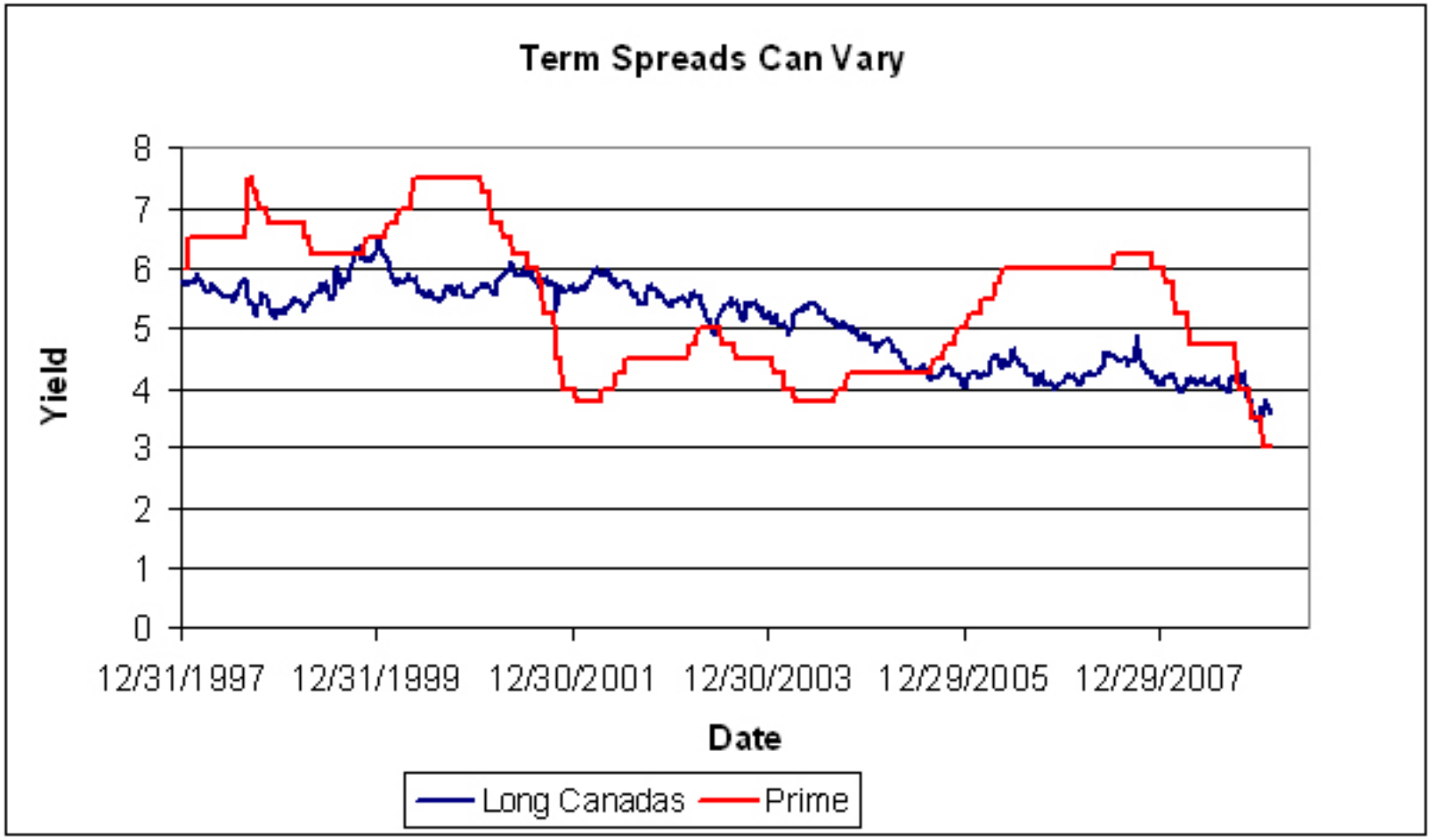
$$\Delta P/P = - D_{Mod} * \Delta y \qquad \text{(for all fixed income)}$$

$$= - \Delta y / y \qquad \text{(for perpetuals)}$$

Representative Modified Durations

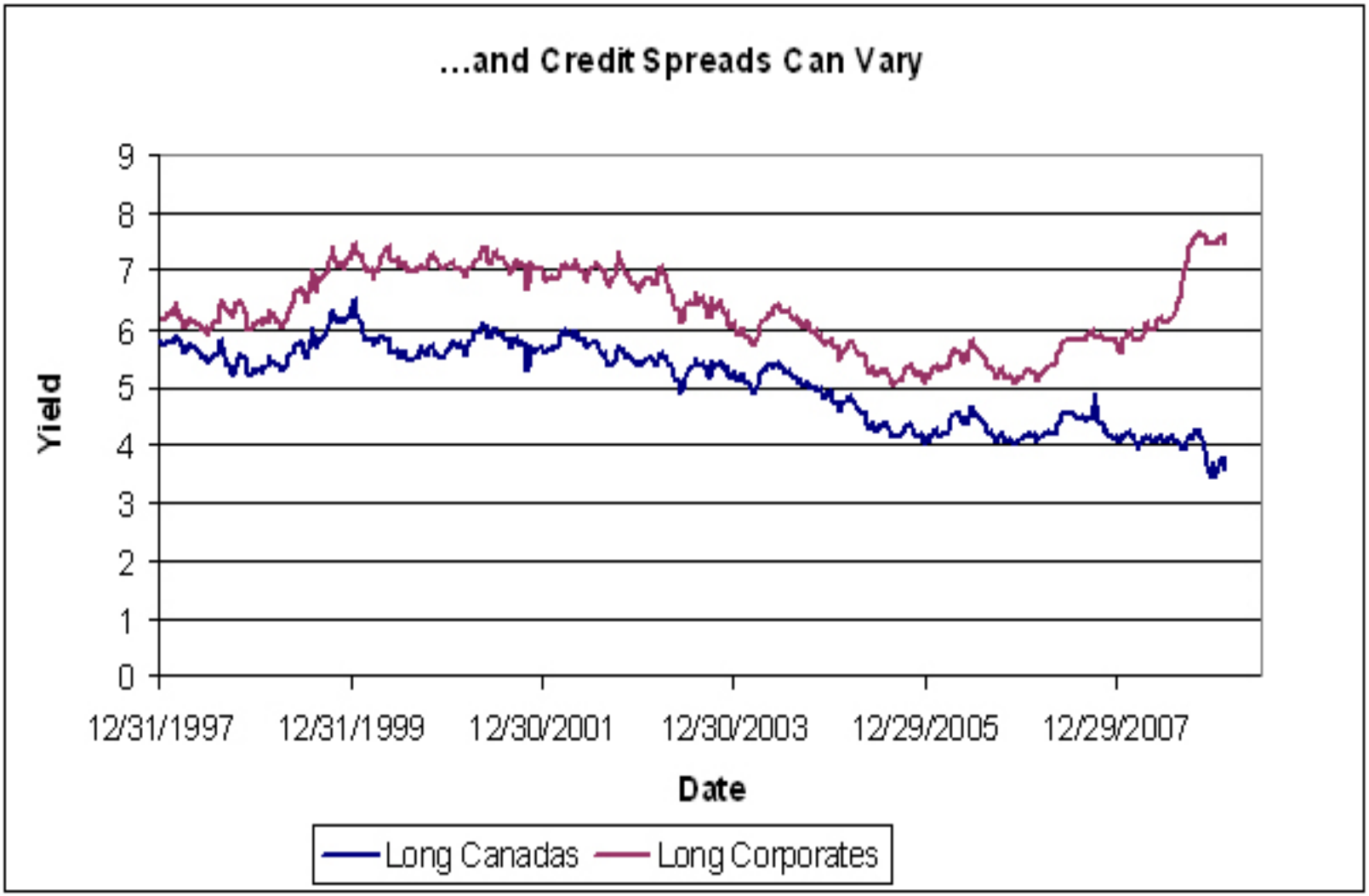
2-Year Canada @ 1.12%	2.0 Years
5-Year Canada @ 1.90%	4.7 Years
10-Year Canada @ 2.84%	8.7 Years
30-Year Canada @ 3.58%	18.3 Years
30-Year Corporate @ 7.50%	11.9 Years
Discount Perpetual @ 7%	14.3 Years
30-Year Strip Bond @ 5%	28.6 Years

If Sensitivity isn't a Problem, Why are we down so much?



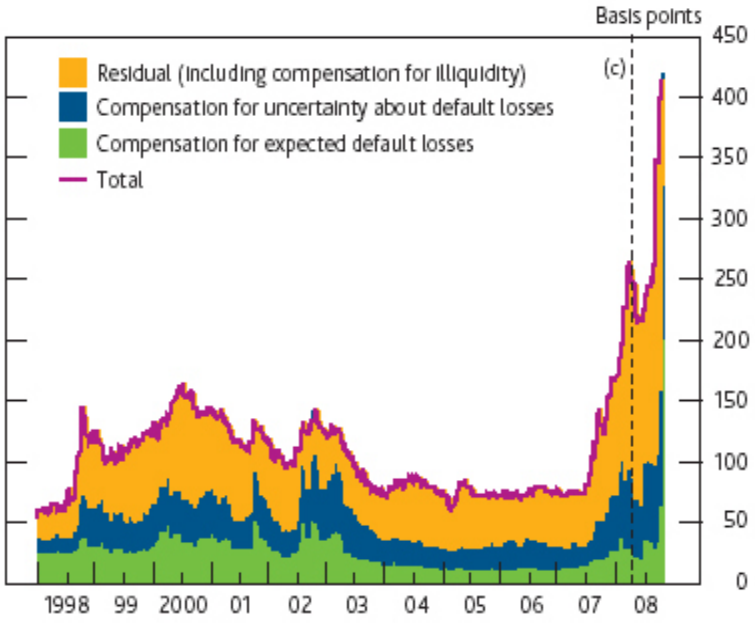
When people tell you about "interest rates", ask "which interest rates?"

And "…for what sector?"



Spreads: Default Risk + Liquidity

Chart 2.6 Decomposition of sterling-denominated investment-grade corporate bond spreads(a)(b)

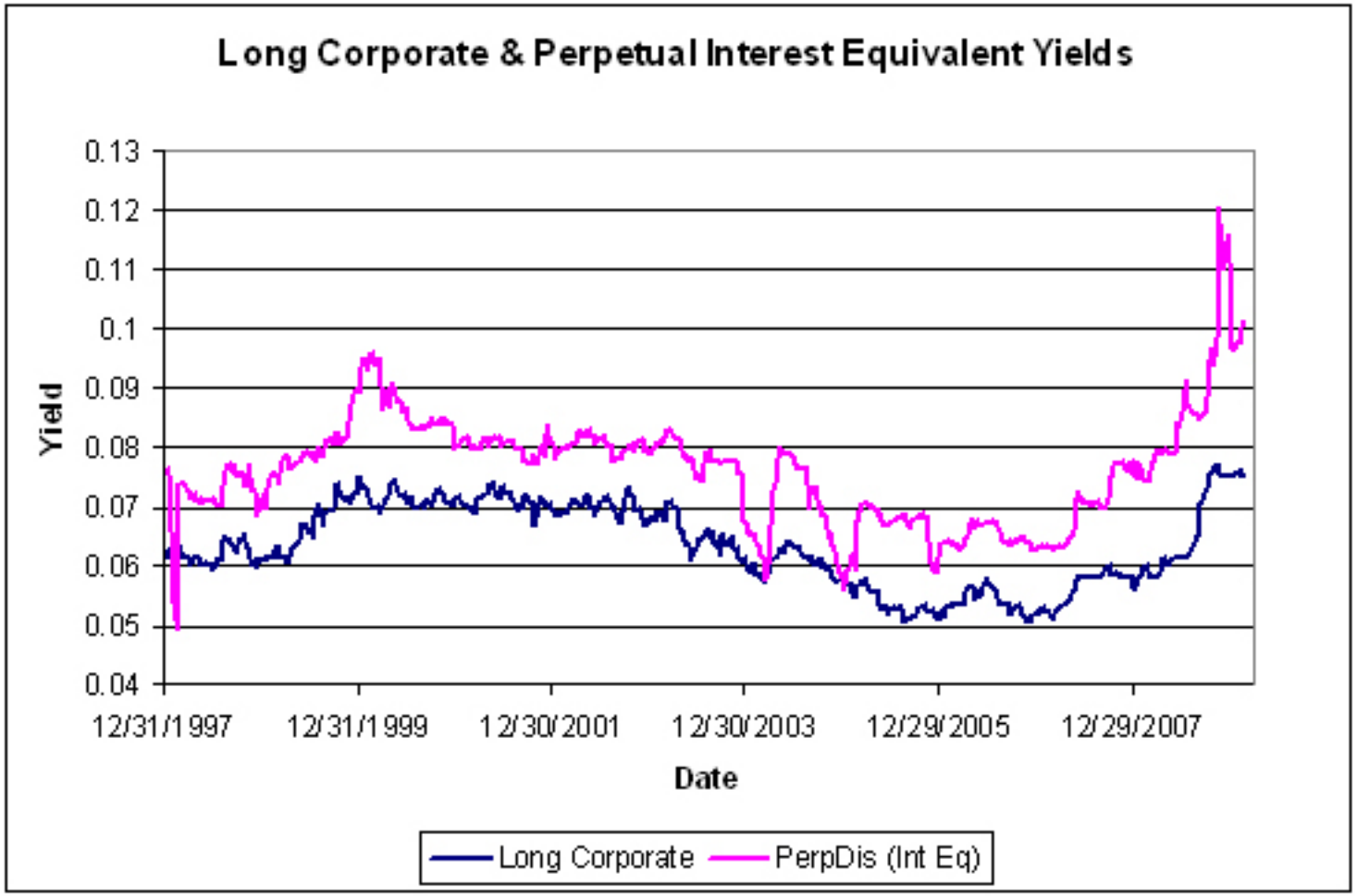


Sources: Bloomberg, Merrill Lynch, Thomson Datastream and Bank calculations.

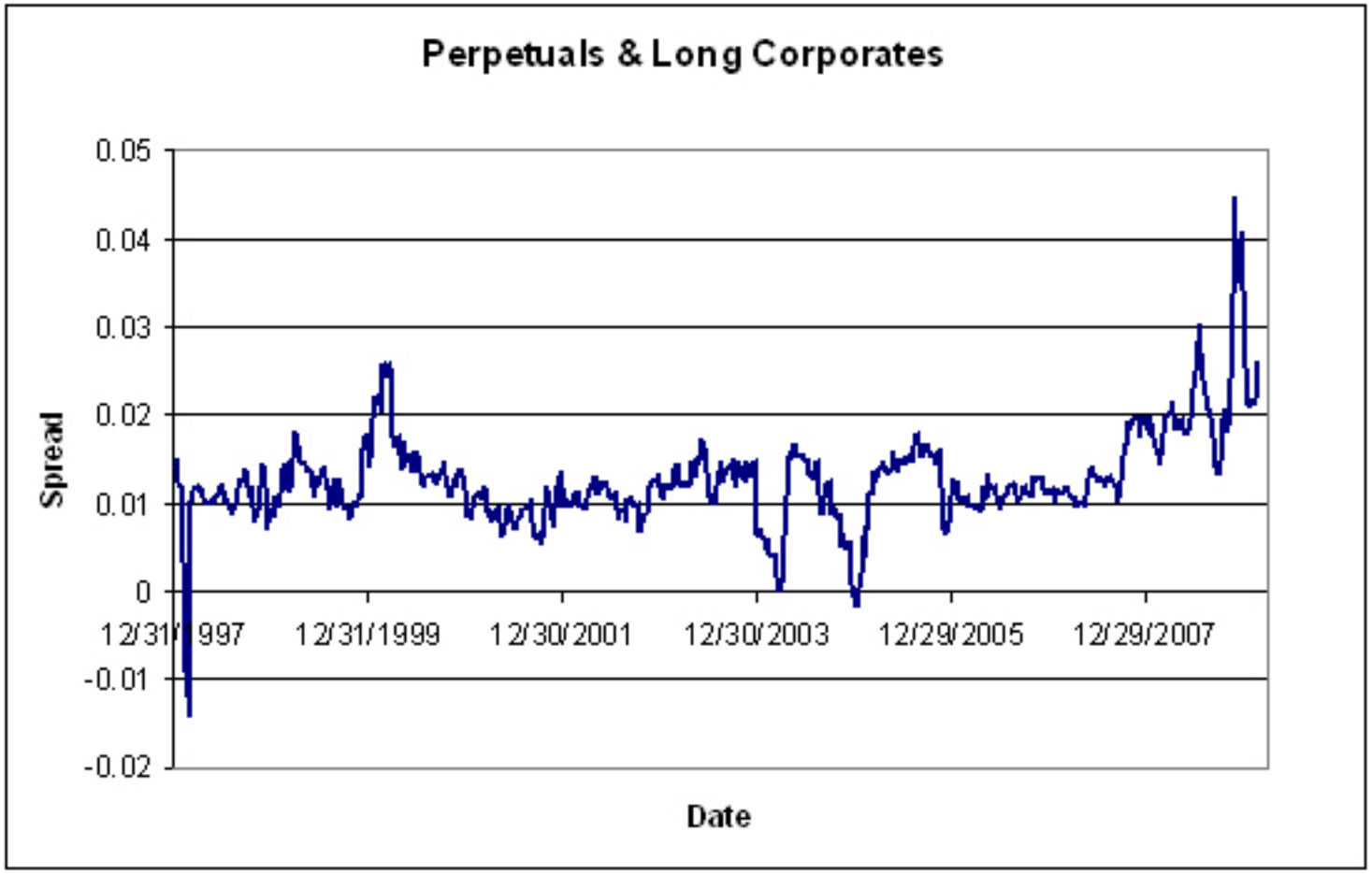
(a) Webber, L and Churm, R (2007), 'Decomposing corporate bond spreads', *Bank of England Quarterly Bulletin*, Vol. 47, No. 4, pages 533–41.
(b) Option-adjusted spreads over government bond yields.
(c) April 2008 *Report*.

- "Merton Model" estimates chance of decline in asset value wiping out common equity
- Always results in spreads that are smaller than market
- Difference is uncertainty and liquidity.

Long Corporate Yields have Risen



And Spreads are Wide

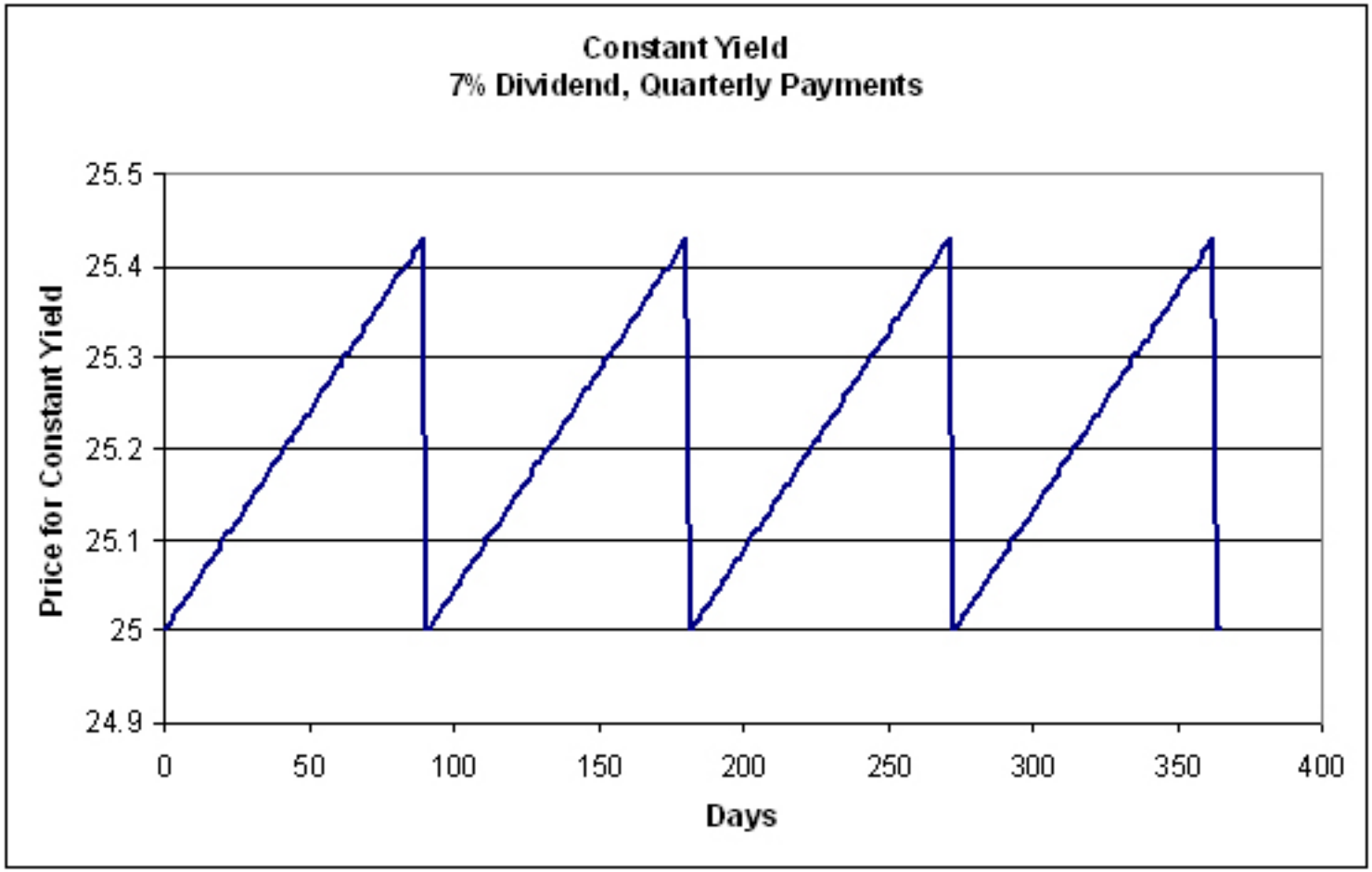


Liquidity Effects in the Market

- “Benchmark” vs. “Off-the-Run” Government Yields
- TIPS vs. Nominal Treasuries
- “Market Impact” costs for funds
  - real cost of fund trading, not commissions
- Yield differences for PerpetualDiscounts

Dividend Effects

Dividend Effects



7% Dividend on $25 stock = $1.75 p.a. = $0.4375 Quarterly

Dividend Effects: Terminology

- **Pay Date** : The date the holder gets paid
- **Record Date** : The date the company determines who gets paid
- **Ex-Dividend Date** : The first date on which a trade with regular settlement will not settle on or prior to the Record Date
- "**Stripped Price**" = "**Flat Bid Price**" : Market Price adjusted for dividend

Accounting for Dividend Effects

- Must calculate yield precisely
  - Cannot use a bond calculator: these account for accrued interest
  - Cannot use current yield
- Check dividend ex-Date
- There are often opportunities for trading in the week around ex-Date

Cumulative Dividends

- Bank issues must be non-cumulative if they are to be included in Tier 1 Capital
- Insurance Company
  - Operating Company: Same as banks
  - Holding Company: Various rules under various Acts
- Other Companies (utilities, etc.)
  - Generally cumulative

Cumulativity Over-Emphasized

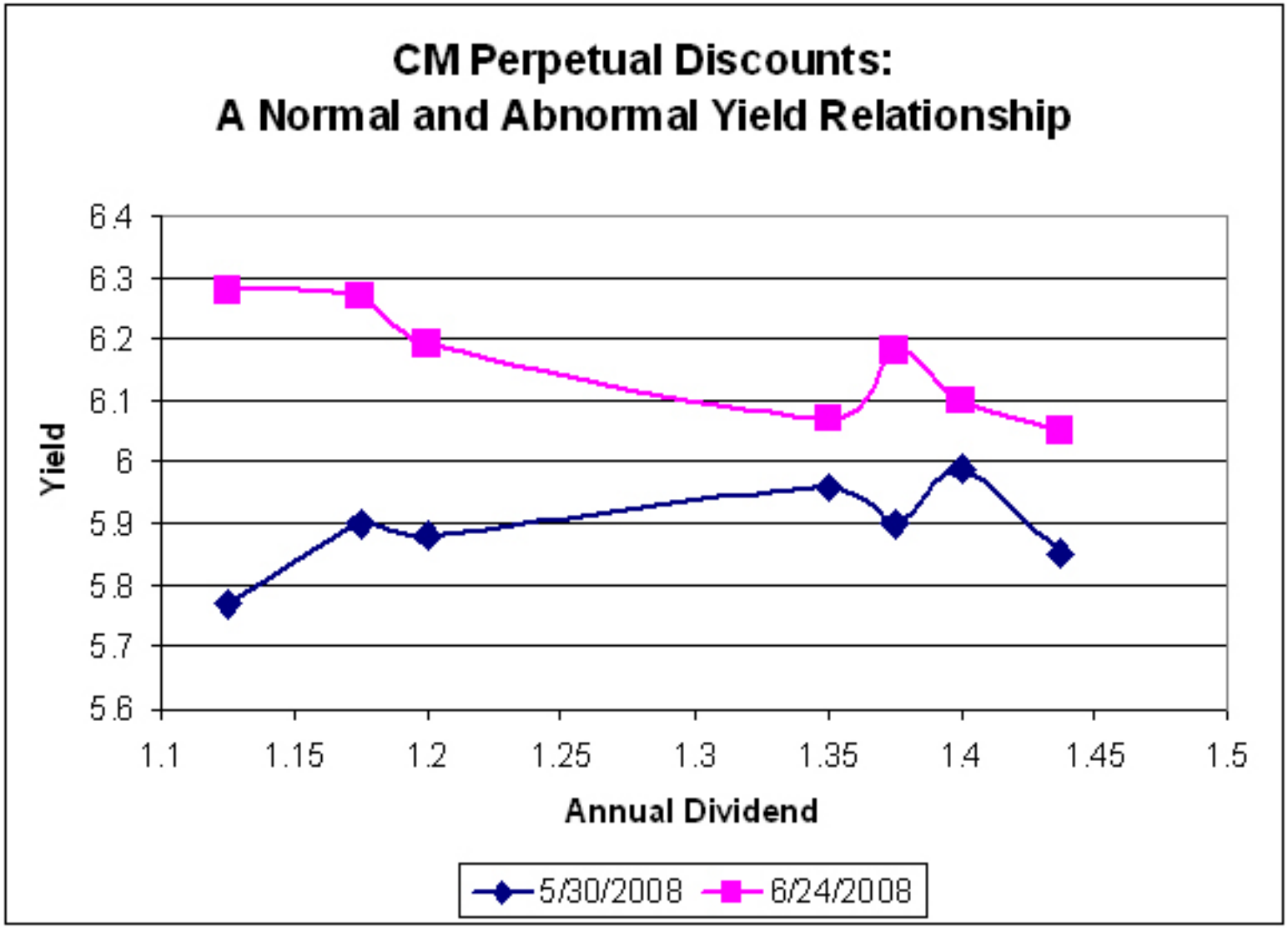
- Nortel & Quebecor World paid preferred dividends until the last minute
- When a company is tempted to suspend preferred dividends, only financing available is via preferred stock
- Cumulativity is largely a proxy for Non-Financial
- Worth something, certainly, but not a lot

Market Efficiency

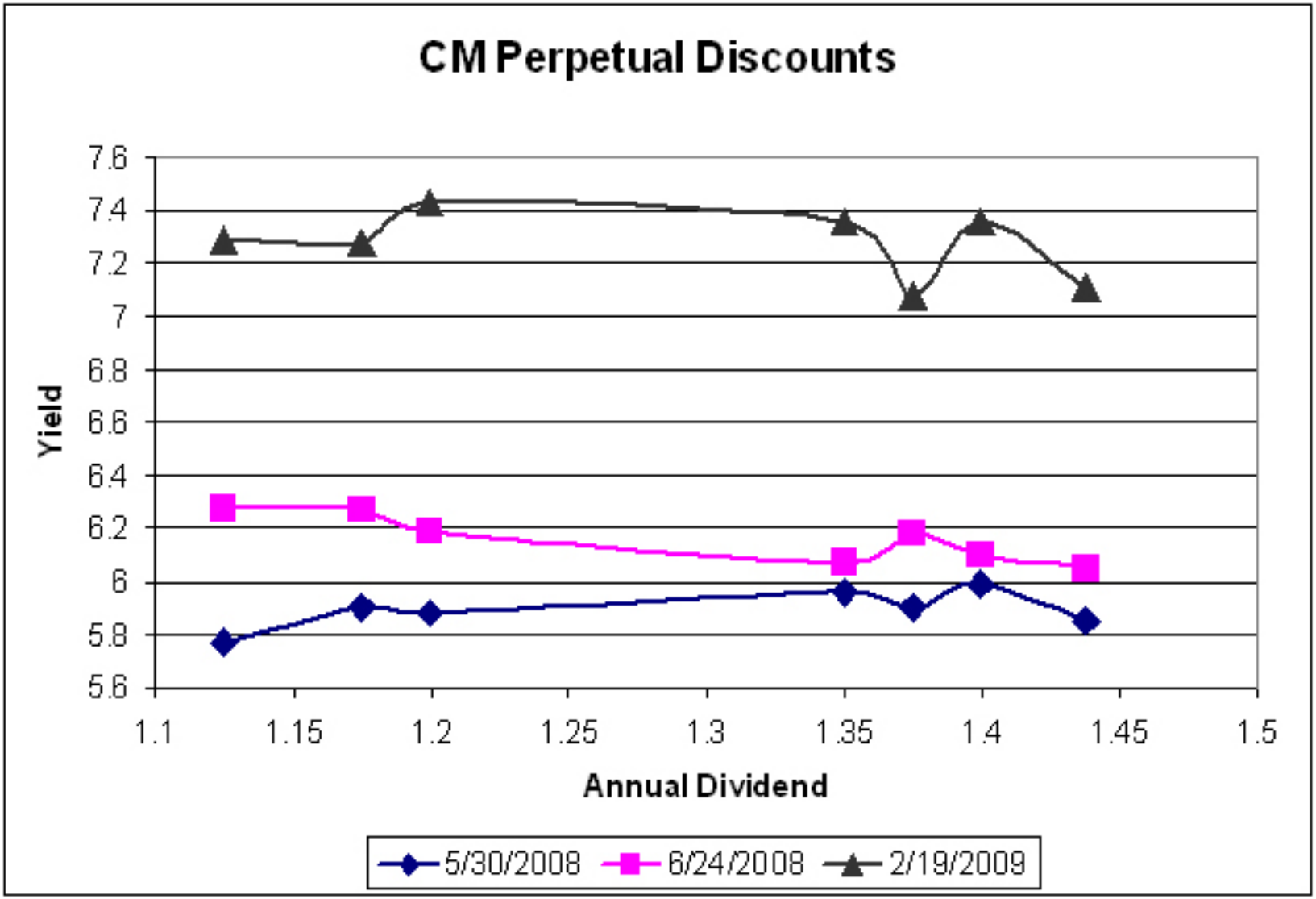
Should all PerpetualDiscounts from a single issuer yield the same?

- Consider two almost identical issues
  - "A" pays $1.20 and is priced at $24
  - "B" pays $1.00 and is priced at $20
- Scenarios:
  - Yields go up, loss is equal (Modified Duration)
  - Yields remain the same, yield is equal
  - Yields go down … "B" makes more money
- Offset: "A" must yield more (= lower price)

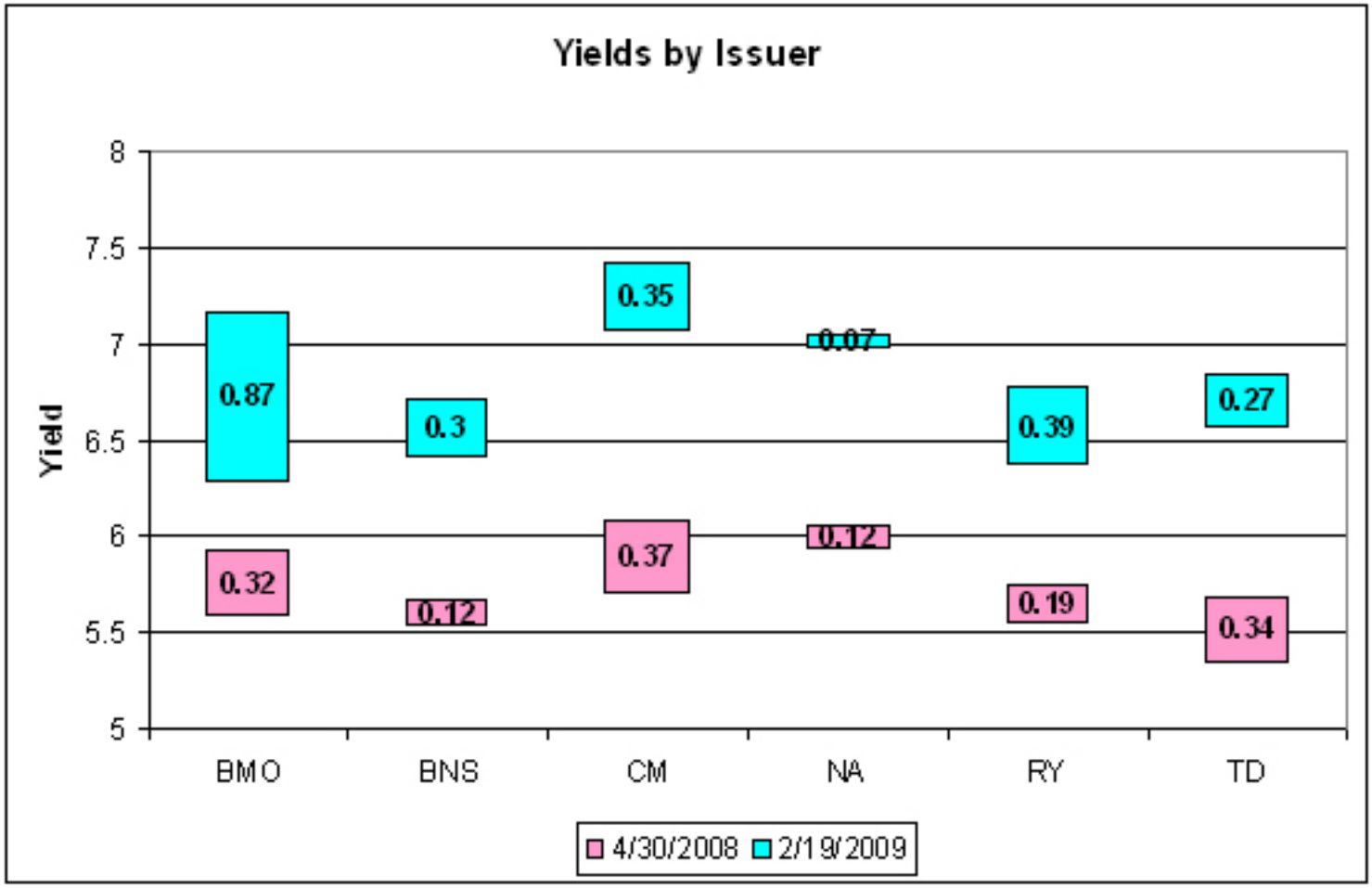
June 2008 was a Crazy Month



Prices Are Now So Low Effect is Minimal



But the Bank Market is Inefficient



Why is the Market Inefficient?

- Not enough “hot money”
- Not enough dealer capital
- Not enough people watching
- Arbitrary Investment Manager policies
- Tax Effects
  - Some investors have unrealized capital gain +20%
- Loss Recognition
  - Some institutions have not marked-to-market

Sell Liquidity – Don't Buy It

- Place Limit Orders, not Market Orders
- Let the market come to you
- Any investor can pick up extra money
  - Spreadsheet, discount brokerage for traders
    - 10bp Δy = 1.4% ΔP = \$0.28 / share = 2+ months
  - Buy-and-Holders simply buy the cheapest
    - Rebalancing periodically will help – provided you're not paying full retail commission.


Hymas
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