

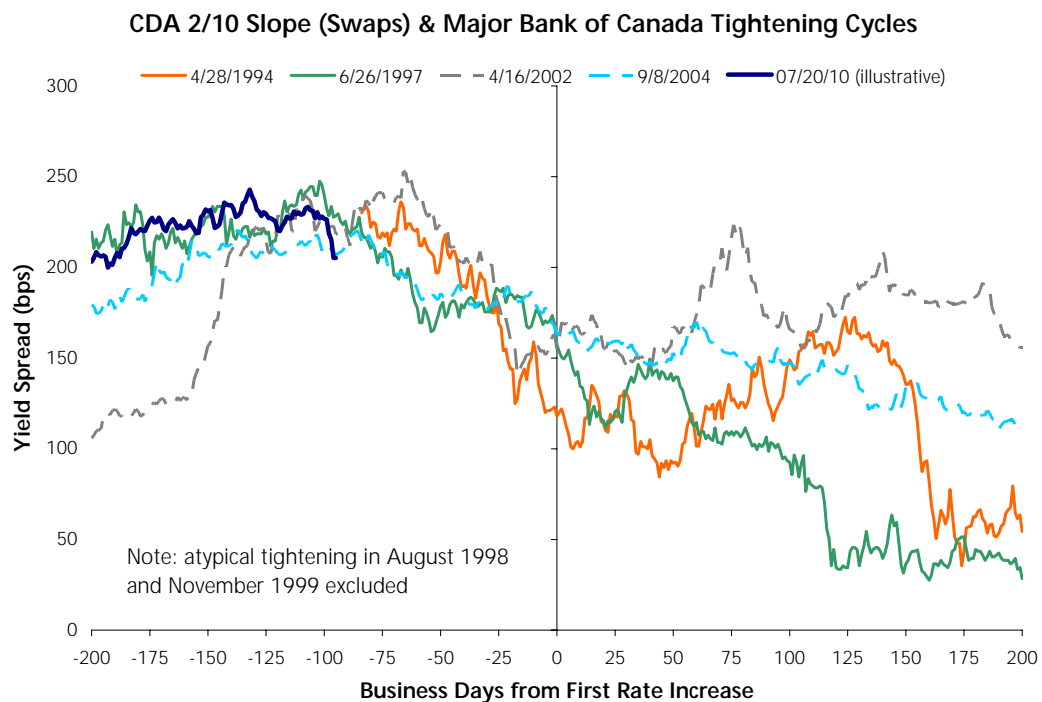
Fixed Income Relative-Value Weekly

Roger Quick, CFA

Friday, March 05, 2010

Highlights

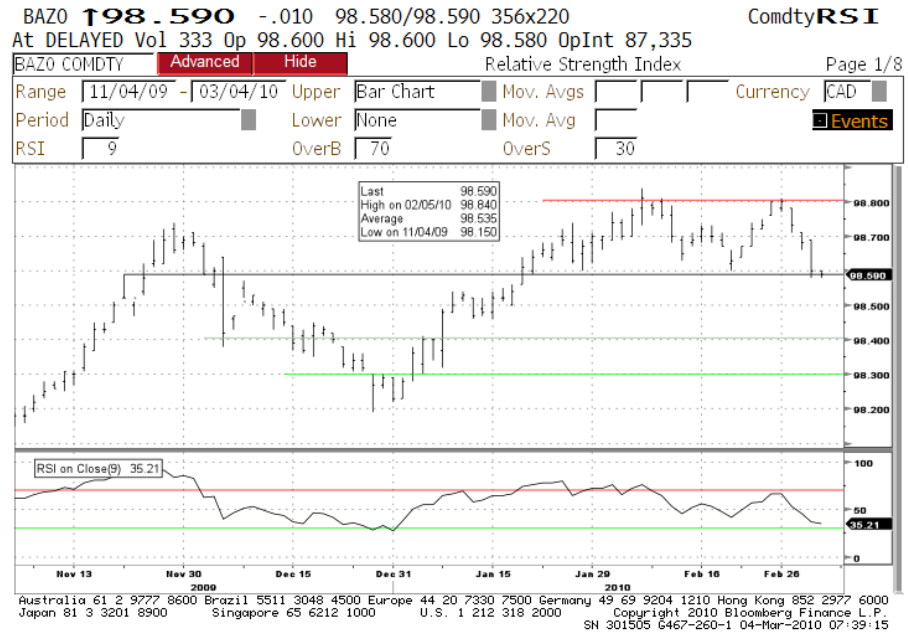
- The Canada bond and swap curves flattened substantially this week following the stronger than expected GDP report, and the slightly more hawkish BoC statement. The 2/10 swap curve flattened 21 bps (chart below). This is the start of what we think should be a substantial flattening trend over the next four to six months. We reiterate the flattener recommendation.
- We update the previous 5s/30s recommendation. After initially going against us in January, this trade is well onside. Carry is negative, but it should flatten significantly further over the next four months to five months.
- More flattening charts: we provide a series of charts showing how different curve spreads have tended to flatten in the months before and after the start of major tightening cycles. We show charts for Canada bonds, and for swaps.
- BA futures sold off significantly this week. The price of the Dec contract declined some 25 cents. I remain fairly negative, and think I think longer-dated BA futures could decline significantly further, though this could take several more months, since the BoC is likely at least 4 months away from raising rates.
- Canada 2-year yields and the rate cycle: What is an appropriate spread between the 2-year yield and the overnight target? We take a look at the historical evidence. At a minimum, I think the 2-year yield will increase from 125 to 150 bps above the BoC's target in the next few months, and should probably rise further, perhaps closer to 175 bps over (a yield of 2.0%).
- The Appendix also shows Canada bonds valued off our theoretical multi-factor yield curve model, Canada bond asset-swap spreads, and an excerpt from the daily butterfly report.



Trade Update: Short BA Futures:

The price of the Dec contract has declined some 25 cents this week. Technically, the intra-day decline through 98.60 was negative. So far though, the market has been able to recover from its lowest intra-day levels (98.52 on Thursday) to close above this key level. This is an important level to watch. A move through there should bring in further momentum selling. My guess is that the reversal on Thursday was largely short covering ahead of Friday's nonfarm payrolls report, and that it ultimately will not be sustained.

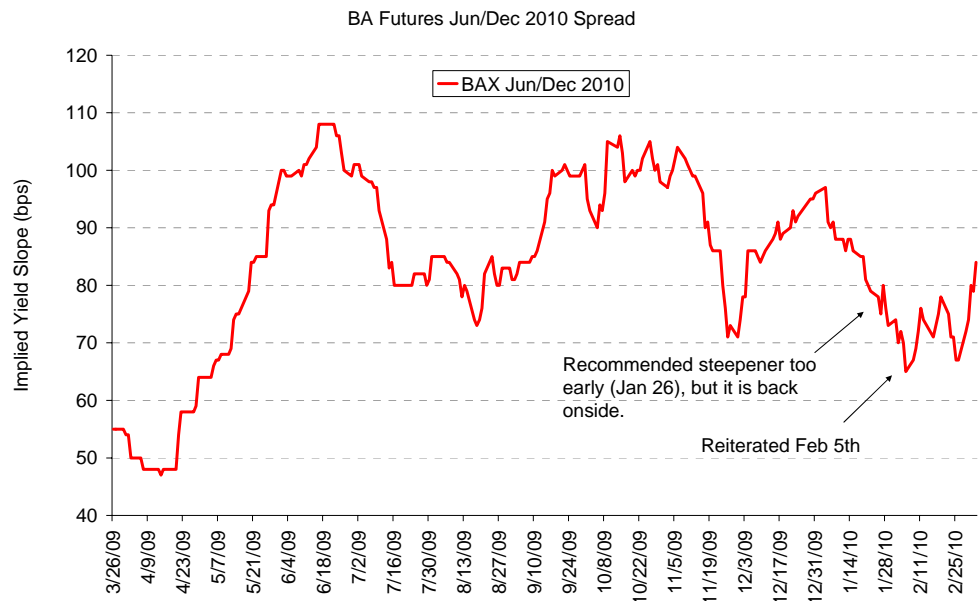
Fundamentally I am still bearish. I think the Dec contract can easily decline another 20 cents to 9840, and quite likely further, back toward the lows from the start of the year. (See below for discussion of BoC).



If we assume that the future path of overnight rates follows Scotia Economics' forecast of quarter-point rate increases beginning in July, we obtain a break-even rate on Dec BAX near 1.6%. This estimate assumes a CDOR/OIS credit spread of 18 bps, but it assumes no term risk prem. It should I think include a premium for uncertainty as well—e.g. there is I think a nonzero risk of one or more 50 bp hikes—which could easily equate to another 20 bp on the Dec BAX yield.

BAX Steepener

I also still like the BAX steepener, for the reasons described above. The June-Dec spread has resteeptened about 20 bps since Feb 5th. I think it can still move back above 100 bps, i.e. another 15 to 20 bps.



Canada 2s and the Rate Cycle

Where should 2-year yields be relative to the overnight target? To help answer this question, we examine the historical evidence. The chart shows the spread between the 2-year Canada yield and the BoC's overnight target, in the months before and after the start of BoC tightening cycles.

The current spread of approximately 125 bps is typical of this stage in the cycle, assuming we are correct that the BoC begins tightening in Q3. The historical pattern suggests this spread can widen substantially further in the months leading up to the first rate increase.

However, the spreads shown in the graph do not take into account what is already implied in the curve. The break-even yield on current 2s three months forward is about 20 bps higher than today, or close to 150 bps over the BoC rate. So in the next three to four months you need the two-year yield to rise above 1.75%, or at least to rise to 1.75% faster.

The tightening cycle that began in 2004 was the least extreme. Then, the spread peaked at 150 bps in the month before the first rate increase. A repeat of the 2004 pattern would only be profitable if it happens soon, in the next one or two months. The implied forward 2-year spread would reach 150 bps by June 2010.

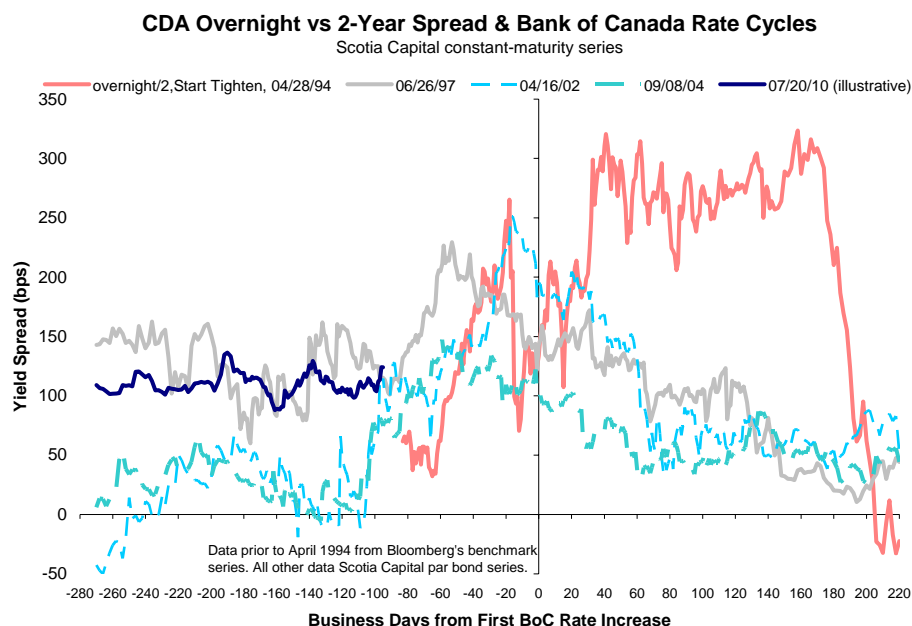
The story was different for the earlier cycles. Then, the spread reached substantially higher levels, peaking well above 200 bps. The average across all four previous tightening episodes was a peak of 190 bps, one month before the first rate increase.

I doubt that the overnight vs 2-year spread should approach the historic wides. First, central bank policy is probably more transparent today. Second, there is I think still a lot of uncertainty about how aggressively the central bank will tighten. But I do think there is still a reasonable chance that the 2-year spread can exceed the 2004 peak. At that time, there was great uncertainty about how quickly the Fed would raise rates, and by extension the Bank of Canada. This was the time when the Fed was raising rates at a "measured" pace. Particularly in the case of the BoC, the market's skepticism about rate increases was fairly accurate: the BoC raised rates twice, then paused for almost a year before raising again. It seems to me that two year yields could still rise further than the forwards currently imply, so I think a short position could still be profitable.

(note: data from April 1994 onward are our constant-maturity theoretical par bonds. Data prior to that are from Bloomberg's benchmark series).

Canada 2s – Upcoming Auction

Canada auctions a new 2-year bond on March 10th, a \$3 billion June 1 2012 maturity. It will be several months before this bond becomes the benchmark. We will put out a separate note on the value of this sector later.



Trade Update: Curve Flatteners

Our 5/30 flattening recommendation from January 26th, too early and initially offside by 5 bps, has now moved onside by 13 bps. If Scotia Economics is correct that the BoC begins raising rates in Q3, this curve can flatten substantially further over the next 4 to 5 months, on the order of at least 25 bps, and quite possibly 50 bps or more. It needs to flatten about 2.5 bps per month just to offset the negative carry.

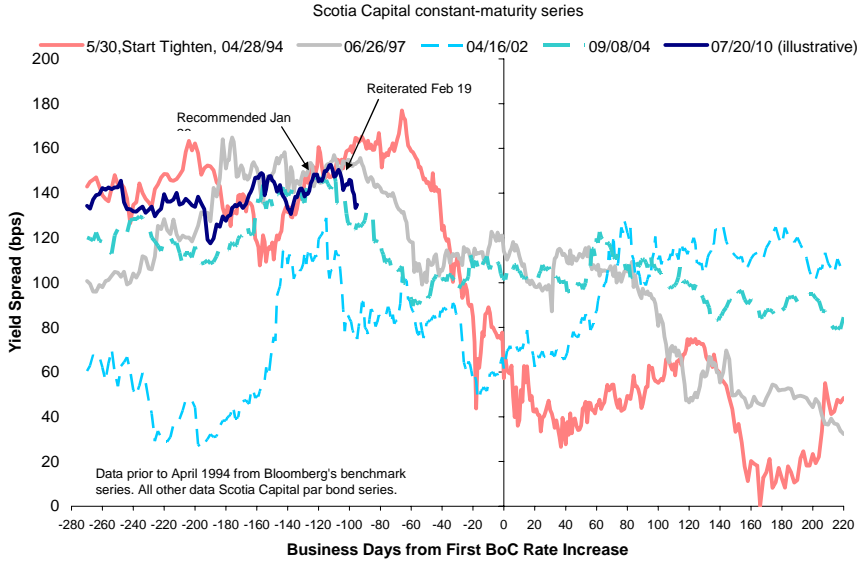
The charts on this page show 5/30 in Canada bonds in the months before and after the start of BoC tightening cycles. The first chart shows the outright spread, the second chart shows the spread scaled so that it equals zero on the day of the first rate increase. This second chart therefore shows the cumulative amount of flattening or steepening relative to that date.

Other parts of the curve have also flattened substantially. For example, our recommended 5/10 flattener in swaps has performed even better, flattening some 18 bps or more since Jan 26.

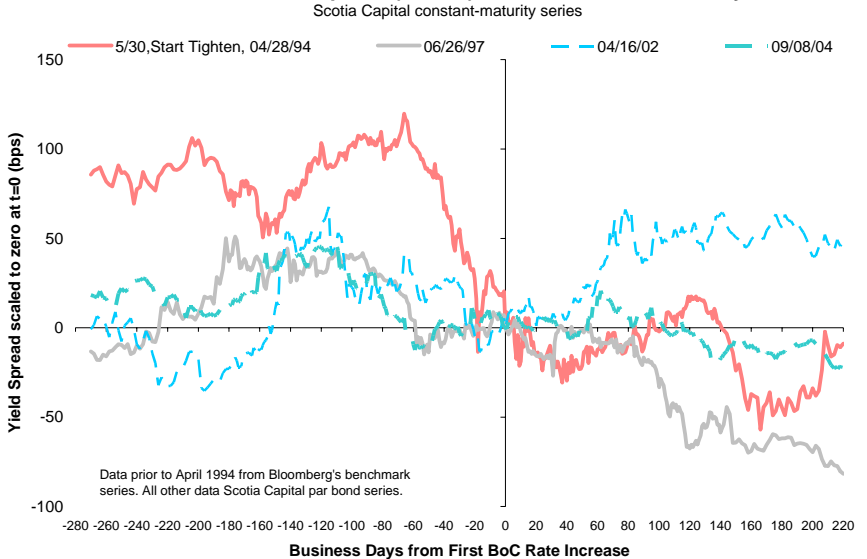
On the next two pages we show similar charts for a variety of flattening trades, including 5s/10s in swaps, and 2s/10s and 5s/10s in bonds. The front page also shows 2/10 in swaps.

(n.b. commentary continues on page 7 after the flattening charts.)

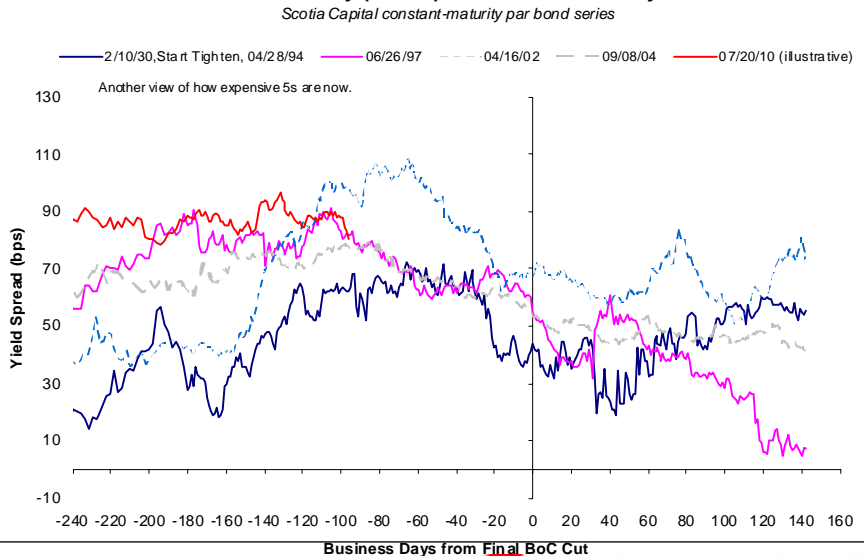
CDA 5/30-Year Yield Spread & Bank of Canada Rate Cycles



CDA 5/30-Year Yield Spread (Scaled) & Bank of Canada Rate Cycles



CDA 2/10/30 Fly (Bonds) & Bank of Canada Cycles



CDA 10-Year Butterfly & Rate Cycle

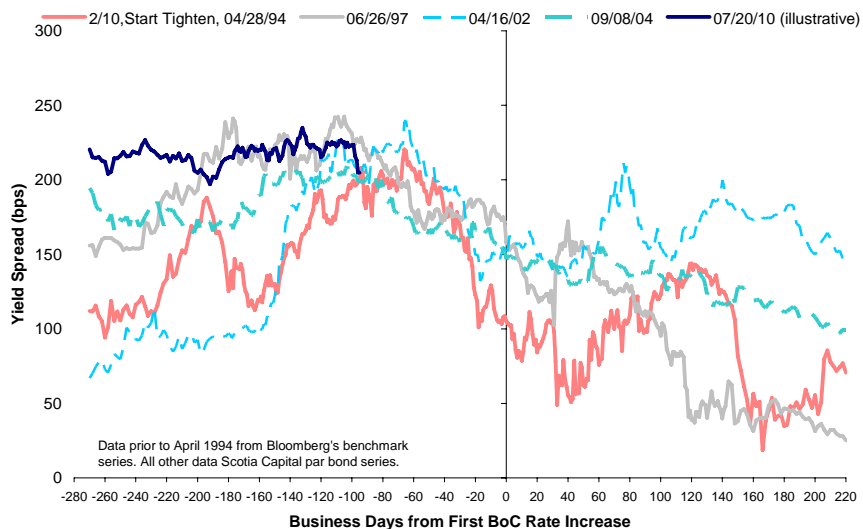
At the risk of overkill, here is one more rate-cycle chart, this one showing the 10-year butterfly. It tends to be strongly related to the slope of the yield curve, and tends to richen substantially in the months leading up to the start of a tightening cycle.

More Tightening-Cycle Charts—Canada Bonds

- The charts on the left hand side show the indicated curve spread in the months before and after the start of the tightening cycle. The charts on the right show the same spread, but scaled to equal zero on the day of the first hike, in order to show the cumulative flattening or steepening relative to that date.

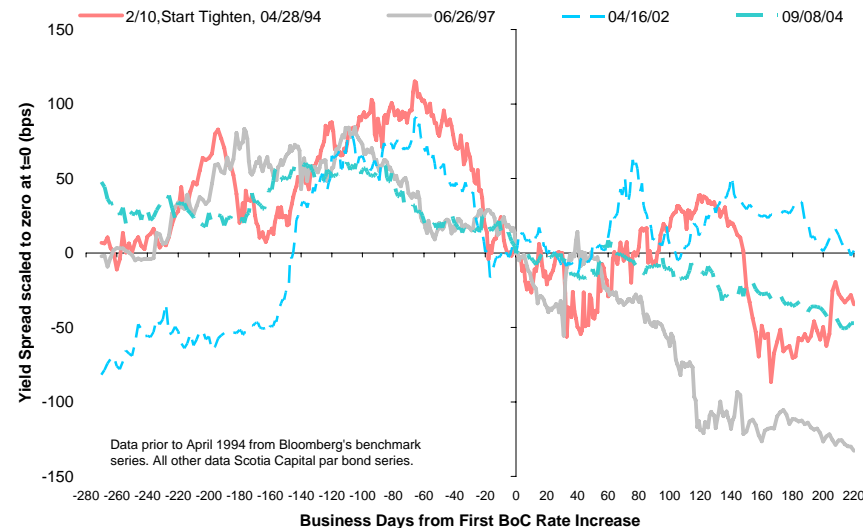
CDA 2/10-Year Yield Spread & Bank of Canada Rate Cycles

Scotia Capital constant-maturity series



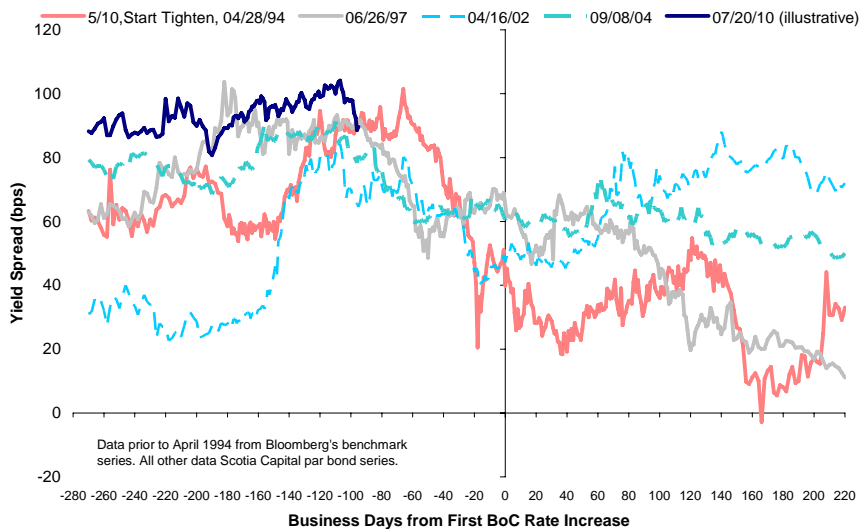
CDA 2/10-Year Yield Spread (Scaled) & Bank of Canada Rate Cycles

Scotia Capital constant-maturity series



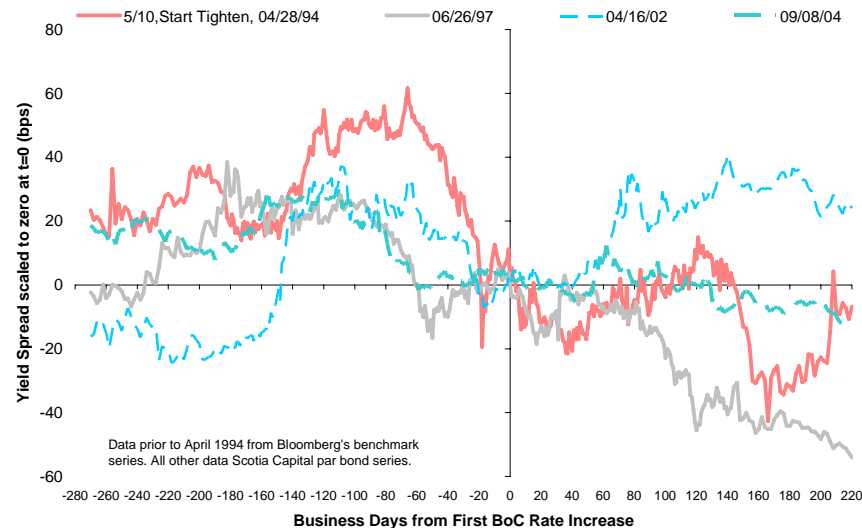
CDA 5/10-Year Yield Spread & Bank of Canada Rate Cycles

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CDA 5/10-Year Yield Spread (Scaled) & Bank of Canada Rate Cycles

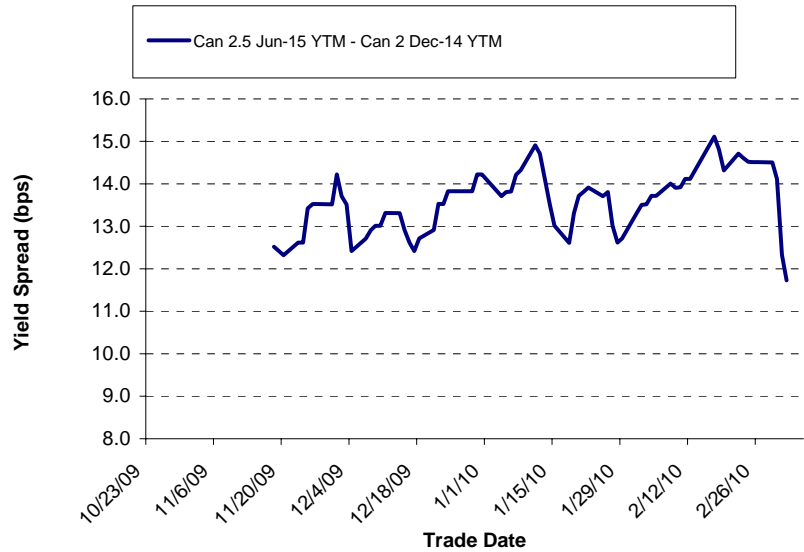
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Canada 5-Yr Auction Re-cap

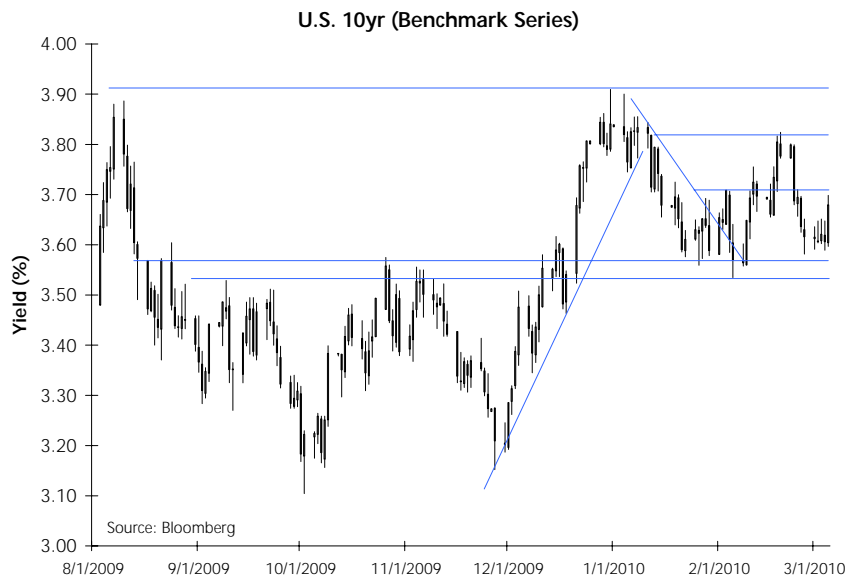
Canada's 5-yr auction was strong, with bid/cover of 2.6. The 2.5% June 1 2015 bond became the new 5-year benchmark the day after the auction, March 4th, as expected.

The D14/J15 roll tightened 2.8 bps over the week. Part of this can be attributed to the overall flattening of the curve, but even allowing for that, the bond richened 1.5 bps relative to D14 (this estimate is from our theoretical OAS model).



US 10s

It was a relatively uneventful week in the US Treasury market, at least until the payrolls report. The 10-year US yield was hovering near the lower end of its yield range after the big 18 bp rally the previous week. The market was largely braced for a weak payrolls report due to the bad weather in the US, which had already been a factor behind some of the very weak data reports in late February (e.g. housing, jobless claims). In the end, payrolls declined less than expected, and the unemployment rate was actually better. The implication was that, if not for the bad weather, this would have been the first payroll gain for the US. The market sold off, with 10-year yields briefly rising as much as 10 bps toward 3.70%, before recovering a bit.



We are now in a period, March and April, that tends to be very weak for bonds, which argues for selling on strength, and for 10s to move back up to the top of the yield range at 3.90%.

The US has supply beginning March 9th with \$40 bn 3s, then \$21 bn 10s, and \$13 bn longs.

Debt Management Strategy & Likely Bond Issuance Schedule (published Mar 4, revised with corrections Mar 5)

Canada released its Debt Management Strategy on Thursday, as an appendix to the budget. The main changes are a decline in T-Bill issuance, a possible shift in the size or maturity of some benchmark terms, and an increase in bond buybacks.

Gross fixed-rate bond issuance is expected to be \$95 billion, down \$7 bn from last year (which was a substantial increase due to the various emergency funding programs related to the financial crisis).

The government will be reducing T-Bill issuance, lowering the amount outstanding by \$28 billion, to about \$150 bn by the end of the 2010-11 fiscal year. This means that the percentage of fixed-rate debt will increase further. The fixed rate share of the debt was 61% in 2008-09, is estimated by the government to be 63% in 2009-10, and to rise "slightly further" in 2010-11. This gradual shift toward longer-term term fixed rate borrowing seems a reasonable response to historically low interest rates.

The government notes that it may adjust the maturity dates of certain benchmarks "to help smooth the cash flow profile of upcoming maturities", and offers as an example of this adjustment switching from a June/Dec to a Mar/Sep cycle. The government notes that any changes would involve consultation with the market, and would be published "well in advance".

This means that the government may issue more Sep and March dated benchmarks, and fewer June-Dec dated benchmarks. It could also focus buybacks in the relatively large June maturities, to further "smooth the cash flow profile" of maturities. Currently, the only Sep and March-dated benchmarks are the 2-year and the 3-year. The government would presumably just issue more Mar-Sep dated bonds in these two terms, rather than issue Sep or March-dated bonds in other terms.

Buybacks: the size of buybacks is planned to increase from \$2 to \$5 bn.

Target benchmark sizes are the same. Target sizes take into account both new issuance and the amount outstanding on old fungible bonds. As with last year, the government says it expects that benchmark sizes may be exceeded in some terms.

2-year	\$7 to \$10 billion.
3-year	\$7 to \$10 billion.
5-year	\$9 to \$12 billion.
10-year	\$10 to \$14 billion.
30-year	\$12 to \$15 billion.

The planned auction schedule is also the same, with quarterly issuance of all benchmark terms, except there will be no auction of a 30-year bond in the fourth quarter of fiscal 2010-11.

(note: in the original version of this note I misinterpreted the government's statement about smoothing the cash flow profile of "upcoming maturities" to refer specifically to bonds maturing in fiscal 2010-11, and then proceeded off on some bizarre tangent. The interpretation given here is I think correct, and much more reasonable.)

Treasury Reintroduces Supplementary Financing Program (originally published Feb 23, 2010 as a daily note)

The U.S. Treasury announced February 23rd that it was re-starting the supplementary financing program, whereby the US government issues T-Bills specifically to finance some of the Fed's activities. The Treasury plans to increase this program from the current \$5 bn to about \$200 bn outstanding, via weekly auctions of \$25 bn each.

The program was originally introduced around the time of the original AIG bailout in Sep 2008, before the Fed started paying interest on reserves. It remained stable at \$200 bn until Sep 2009, when it was scaled back to \$15 bn as part of an effort by the Treasury to avoid hitting the debt ceiling. The debt ceiling has now been increased, and so the Treasury is returning this program to its previous size.

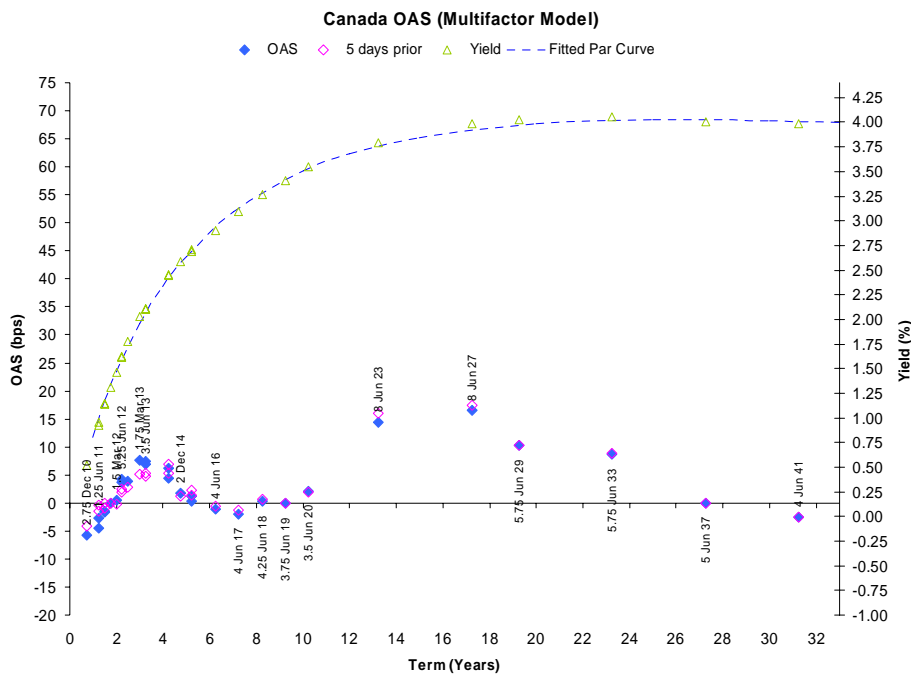
Impact on money supply? The decision to cut the program last September meant that the Fed instead had to print \$185 bn of new money, i.e. increase excess federal reserve balances, in order to finance its ongoing activities (primarily, at that point, buying mortgage securities). Reintroducing the program means that the Fed can let the amount of excess reserves decline somewhat. However, reserves won't decline by the full \$195 bn yet, because the Fed is still buying mortgage securities for one more month.

Does this mean anything for monetary policy? If the announcement that the Treasury was going to issue new debt to finance the Fed's activities had come out of the blue, it would have been a major first step in withdrawing the Fed's stimulus, gradually tightening monetary conditions. However, the announcement in effect just replaces a longstanding program that was temporarily suspended due to the debt ceiling. There is no indication yet that the Treasury and Fed are planning to raise the supplementary financing program beyond its original \$200 bn limit.

If and when the Fed really does start reducing the level of excess reserves in the banking system, a program like this would be one of the approaches that the Fed could use, in coordination with the Treasury. Other approaches include reverse repo, outright asset sales, and, of course, raising rates (which means raising the fed funds target and the rate paid on reserve balances).

Appendix: Canada Bonds vs Theoretical Yield Curve

Coupon	Maturity Dt	Yield	OAS	Chg 1	Chg 5	Avg 20	Chg vs 20 MA	SD 20	# SD 20*	Avg 75	Chg vs 75 MA	SD 75	# SD 75*
2.750	12/1/10	0.520	-5.7	-0.6	-1.5	-4.7	-1.0	0.9	-1.0	-7.6	1.9	3.1	0.6
6.000	6/1/11	0.923	-4.6	0.1	-4.2	-1.2	-3.4	2.2	-1.5	-2.9	-1.7	2.4	-0.7
1.250	6/1/11	0.953	-2.8	0.1	-1.4	-1.5	-1.3	1.1	-1.2	-3.7	0.9	2.2	0.4
3.750	9/1/11	1.139	-1.4	0.1	-1.4	0.3	-1.7	0.9	-1.8	-0.7	-0.7	1.1	-0.7
1.000	9/1/11	1.143	-1.7	0.2	-0.7	-0.4	-1.3	0.8	-1.6	-1.3	-0.4	1.1	-0.4
1.250	12/1/11	1.313	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
1.500	3/1/12	1.465	0.5	0.3	0.7	0.5	0.0	0.5	0.1				
3.750	6/1/12	1.620	3.7	0.5	1.7	2.9	0.8	0.6	1.3	3.5	0.3	2.3	0.1
5.250	6/1/12	1.617	4.2	0.5	1.8	3.3	0.8	0.6	1.4	3.8	0.4	2.3	0.2
2.000	9/1/12	1.772	3.9	0.0	1.1	3.2	0.7	0.6	1.2	4.3	-0.4	2.6	-0.2
1.750	3/1/13	2.026	7.6	-0.4	2.5	5.7	1.9	1.2	1.5				
5.250	6/1/13	2.104	7.4	-0.3	2.1	5.8	1.6	0.9	1.8	7.0	0.4	2.3	0.2
3.500	6/1/13	2.114	6.9	-0.3	2.2	5.3	1.6	0.9	1.8	6.3	0.6	2.3	0.3
5.000	6/1/14	2.445	6.2	-0.6	-0.7	5.2	1.0	1.2	0.8	6.9	-0.7	2.5	-0.3
3.000	6/1/14	2.452	4.5	-0.6	-0.8	3.5	0.9	1.2	0.8	5.0	-0.6	2.5	-0.2
2.000	12/1/14	2.590	1.7	-1.0	0.5	-0.4	2.1	1.6	1.3	1.1	0.5	2.3	0.2
4.500	6/1/15	2.685	1.2	-1.6	-1.0	0.4	0.8	1.7	0.5	1.9	-0.7	2.2	-0.3
2.500	6/1/15	2.707	0.4	-1.6	-1.0	-0.5	0.9	1.7	0.5	0.7	-0.3	2.0	-0.1
4.000	6/1/16	2.906	-1.1	-0.7	-0.5	-1.8	0.7	1.3	0.6	-1.4	0.3	1.1	0.3
4.000	6/1/17	3.090	-1.9	0.2	-0.6	-2.4	0.5	0.9	0.6	-1.9	0.0	0.8	0.0
4.250	6/1/18	3.265	0.2	0.1	-0.5	-0.1	0.3	0.6	0.5	0.0	0.3	0.9	0.3
3.750	6/1/19	3.409	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
3.500	6/1/20	3.548	2.1	0.0	0.2	2.3	-0.1	0.3	-0.5	3.5	-1.4	1.1	-1.2
8.000	6/1/23	3.794	14.5	0.1	-1.5	15.3	-0.9	1.3	-0.7	19.2	-4.7	3.5	-1.4
8.000	6/1/27	3.987	16.5	-0.1	-1.0	17.5	-1.0	1.3	-0.8	22.1	-5.5	3.8	-1.5
5.750	6/1/29	4.020	10.2	0.1	-0.1	10.6	-0.4	1.1	-0.3	14.8	-4.6	3.2	-1.4
5.750	6/1/33	4.060	8.7	0.0	-0.1	9.0	-0.3	0.6	-0.5	11.3	-2.6	1.7	-1.5
5.000	6/1/37	4.003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
4.000	6/1/41	3.984	-2.5	-0.2	0.0	-2.0	-0.5	0.4	-1.3	-0.8	-1.7	1.1	-1.5



Description of the model: The option-adjusted spread (OAS) is the spread to the theoretical curve that would equate the model price to the market price. A positive OAS means that a bond is cheap to the theoretical curve, all else equal, while a negative OAS means that a bond is rich.

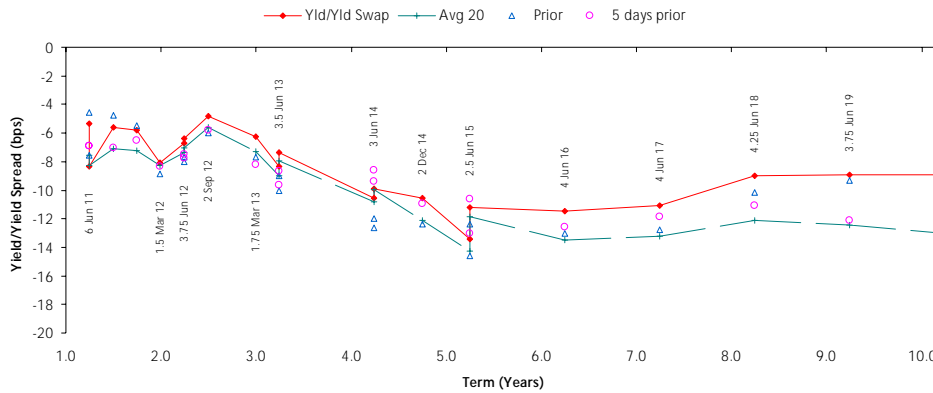
The term-structure model that underlies this report is similar to models used for option pricing, in that it explicitly models the uncertainty in the future evolution of interest rates (as a simplified analogy, think of the standard binomial option-pricing tree). However, it differs from the usual option pricing model in two main ways. First, the term structure model used here has multiple, partially-correlated sources of risk, which enables it to capture a wide range of interest-rate and volatility term structures. Second, it is a so-called equilibrium model. Models for interest-rate options typically try to fit the underlying term structure exactly. In contrast, the equilibrium model is calibrated to fit the prices of just a few key benchmark bonds (typically 6-month T-Bills, and 2, 10, and 30-year benchmarks). We do, however, make use of option-market data to estimate the model's volatility and correlation parameters.

Appendix: Canada Asset-Swap Spreads

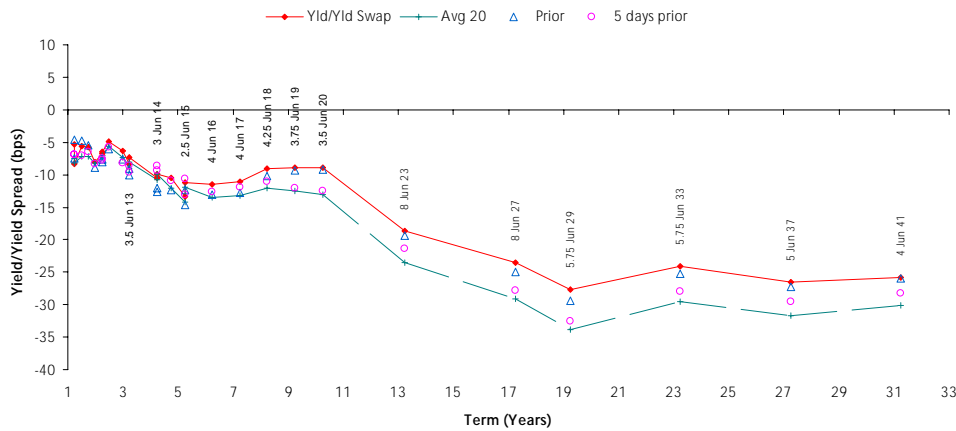
Coupon	Maturity Dt	Par Asset Swap	Yld/Yld Swap	Chg 1	Chg 5	Avg 20	Chg vs 20 MA	SD 20	# SD 20*	Avg 60	Chg vs 60 MA	SD 60	# SD 60*	Carry (\$K) ¹	Carry Delta (\$K) ²
1.250	6/1/2011	-5.2	-5.3	-0.8	1.6	-7.5	2.2	1.4	1.5	-7.6	2.2	1.7	1.3	2.7	71.3
6.000	6/1/2011	-7.6	-8.3	-0.8	-1.4	-8.2	-0.1	1.7	0.0	-7.8	-0.5	1.8	-0.3	-14.7	73.2
3.750	9/1/2011	-5.5	-5.6	-0.8	1.4	-7.1	1.5	1.1	1.4	-6.9	1.3	1.7	0.8	14.6	60.2
1.250	12/1/2011	-5.8	-5.8	-0.3	0.7	-7.2	1.5	1.1	1.3	-6.7	1.0	1.7	0.6	-7.1	51.1
1.500	3/1/2012	-8.2	-8.1	0.8	0.3	-8.3	0.2	0.7	0.3	-6.4	-1.7	2.0	-0.8	-17.6	44.8
5.250	6/1/2012	-5.1	-6.7	1.3	1.1	-7.4	0.6	0.7	0.9	-7.0	0.3	0.8	0.3	8.1	41.6
3.750	6/1/2012	-5.5	-6.4	1.3	1.1	-7.1	0.6	0.7	0.9	-6.6	0.2	0.9	0.2	2.8	41.0
2.000	9/1/2012	-6.2	-4.8	1.2	0.9	-5.6	0.8	0.8	1.0	-5.0	0.2	1.3	0.1	3.8	36.2
1.750	3/1/2013	-6.7	-6.3	1.4	1.9	-7.3	1.0	0.9	1.1	-5.7	-0.6	1.9	-0.3	-6.1	30.3
5.250	6/1/2013	-6.5	-8.4	1.7	1.3	-9.0	0.6	1.1	0.6	-7.5	-0.8	2.3	-0.4	16.0	29.5
3.500	6/1/2013	-6.8	-7.3	1.7	1.3	-8.0	0.6	1.1	0.6	-6.6	-0.7	2.2	-0.3	7.5	28.8
5.000	6/1/2014	-8.1	-10.5	2.1	-1.1	-10.8	0.3	1.1	0.3	-9.0	-1.5	2.6	-0.6	16.1	23.0
3.000	6/1/2014	-9.6	-9.9	2.1	-1.3	-10.0	0.1	1.1	0.1	-8.3	-1.6	2.4	-0.7	1.4	22.2
2.000	12/1/2014	-11.4	-10.5	1.8	0.4	-12.1	1.6	0.9	1.7	-10.7	0.2	2.0	0.1	-8.0	19.6
4.500	6/1/2015	-11.3	-13.4	1.2	-0.4	-14.2	0.8	1.0	0.8	-12.9	-0.6	2.1	-0.3	10.5	18.9
2.500	6/1/2015	-11.5	-11.2	1.2	-0.6	-11.9	0.7	1.0	0.7	-10.5	-0.7	2.2	-0.3	-3.9	18.1
4.000	6/1/2016	-10.1	-11.5	1.6	1.1	-13.5	2.0	1.1	1.8	-13.4	1.9	2.1	0.9	11.8	16.0
4.000	6/1/2017	-9.7	-11.1	1.7	0.8	-13.3	2.2	1.3	1.7	-13.1	2.1	2.5	0.8	13.2	14.1
4.250	6/1/2018	-7.2	-9.0	1.2	2.1	-12.1	3.1	1.4	2.3	-12.7	3.7	2.7	1.4	18.7	12.7
3.750	6/1/2019	-8.6	-8.9	0.4	3.2	-12.4	3.5	1.3	2.6	-13.8	4.8	2.3	2.1	12.9	11.4
3.500	6/1/2020	-9.3	-9.0	0.3	3.6	-13.0	4.1	1.6	2.5	-13.8	4.9	1.8	2.7	9.1	10.4
8.000	6/1/2023	-8.4	-18.6	0.7	2.7	-23.5	4.8	2.2	2.2	-22.2	3.5	2.6	1.4	43.7	9.8
8.000	6/1/2027	-15.6	-23.5	1.4	4.2	-29.1	5.6	2.3	2.4	-25.9	2.3	4.0	0.6	35.7	8.2
5.750	6/1/2029	-25.3	-27.7	1.7	4.9	-33.8	6.1	2.4	2.5	-30.3	2.6	4.2	0.6	12.3	7.1
5.750	6/1/2033	-23.4	-24.0	1.2	4.0	-29.5	5.5	2.5	2.2	-26.6	2.6	3.8	0.7	11.5	6.4
5.000	6/1/2037	-27.8	-26.5	0.7	3.1	-31.6	5.1	3.0	1.7	-30.1	3.6	3.4	1.1	0.6	5.6
4.000	6/1/2041	-26.2	-25.9	0.0	2.4	-30.1	4.2	2.9	1.5	-27.2	1.4	3.8	0.4	-9.3	5.0

¹ Carry over 1-mo for 100K of DV01 risk, assuming bond financed at general collateral. ² Carry Delta is the change in carry for a 10bp decline in the bond financing rate.

Canada Yield/Yield Asset-Swap Spreads, 2 through 10 Year Bonds



Canada Yield/Yield Asset-Swap Spreads, all terms



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