The Yield Curve

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# Central banks start to wonder about low bond yields

## HIGHLIGHTS

- The Brexit option's surprise win in the United Kingdom at the end of June was very good for government bonds, as many investors' first instinct was to head to these safe haven securities.
- The Brexit vote also prompted several central banks to implement even more stimulating monetary policies.
- There has however been a noteworthy change in tone in recent weeks as some central banks seem to start to worry about the effects of very low interest rates.
- If the election results do not have too much of an impact on confidence and the markets, the Federal Reserve should opt for a 25 basis point increase to its target for the federal funds rate at its December meeting.
- Failing another unexpected shock that affects Canada's economy, the monetary authorities will not cut key interest rates again. However, it will be quite some time before an increase is ordered to the target for the overnight rate. Only in the third quarter of 2018 will the uncertainty be likely to have waned enough.

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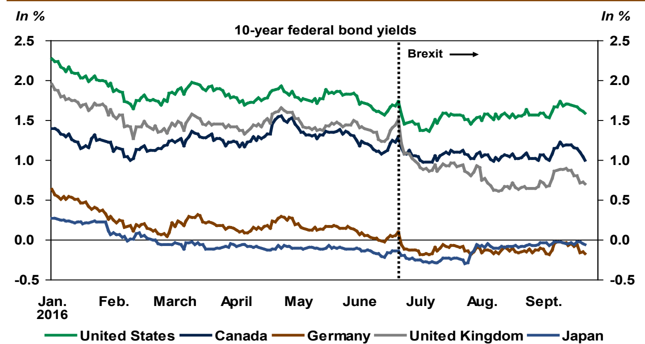
The bond market has continued to perform well in recent months. The Brexit option's surprise win in the United Kingdom at the end of June was very good for government bonds, as many investors' first instinct was to head to these safe haven securities to protect against a potential financial crisis. Although the surge in demand for U.S. bonds in this context surprised no one, it was a little more surprising to see investors even rush toward British government securities (graph 1).

Graph 1 – Bond yields fell even lower after the Brexit win




Sources: Datastream and Desjardins, Economic Studies

In the end, there was no financial crisis after the referendum, as investors were quickly reassured by the assurance from central banks that they were ready to act to support the markets and a rapid political transition in the United Kingdom. The new British government has been in no rush to kick off the Brexit process, which even seems to have convinced some investors that it will, in the end, never happen.

## EVEN MORE AGGRESSIVE MONETARY POLICIES

While most stock exchanges quickly beat the levels seen at the start of the summer, bond yields stayed very close to their historic low in July and August. This is because the Brexit vote prompted several central banks to implement

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even more stimulating monetary policies. Faced with new upside pressure on the yen, the Bank of Japan (BoJ) was one of the first to respond by ticking up its quantitative purchases and announcing that it would review its monetary policy framework.

Fearing a brutal slowdown in activity in the United Kingdom, the Bank of England was particularly aggressive: at its meeting in early August, it announced a string of measures that included a key rate cut and government and corporate bond purchases. The European Central Bank and Federal Reserve (Fed) were also ready to step in if the Brexit vote threatened to trigger a financial crisis, but it was not necessary in the end.

### DO VERY LOW BOND YIELDS HAVE MORE NEGATIVE THAN POSITIVE EFFECTS?

A few weeks after the Brexit vote, everything seemed to be going great in the financial markets. Thanks to central bank intervention, a negative event once again translated into general appreciation of financial assets. In this context, it is hard to criticize investors for becoming complacent.

There has however been a noteworthy change in tone on the part of several central banks in the last few weeks. While it may have seemed that the Brexit win and looming presidential election would shut the door on key rate increases in the United States in 2016, a number of Fed leaders have recently signalled a desire to raise key rates shortly. In the end, disappointing economic data released the weeks prior to the meeting convinced the Fed to once again stick with the status quo in September, but three voters would have wanted to see immediate monetary firming. The door is now wide open for an increase in December, unless the U.S. election on November 8 or another event triggers a sharp deterioration in the economic outlook.

Among other things, the BoJ's new monetary policy framework is based on a target for the ten-year federal bond yield. The goal of this target is to prevent an overly steep decline by long-term bond yields, as "an excessive decline and flattening of the yield curve may have a negative impact on economic activity by leading to a deterioration in people's sentiment, as it can cause uncertainty about the sustainability of financial functioning in a broader sense." How Japanese authorities will approach keeping long yields from dropping while continuing to make massive bond purchases and perhaps even lowering short-term yields further into negative territory remains to be seen.

Japan's new monetary policy framework represents a fundamental philosophical change by one of the major central banks. Since the 2008 crisis, several central banks have purchased astronomical quantities of federal bonds, their primary goal being to make long-term yields go down and thus stimulate economic activity. These purchases are largely responsible for the extreme weakness of yields around the world. If central banks start to think very low yields pointless, or even harmful, the bond market could lose its main pillar. Note that, even in this country, Bank of Canada leaders recently presented low interest rates as more of a symptom of the disappointing global economy than a solution to kick-start growth.

The central banks will not do anything to foster a steep rise by bond yields, as this would have very serious consequences for the financial markets and economic outlooks. Given that inflation should go up in the next few months, the Fed could, however, start to increase its key rates this coming December. In this context, we can expect bond yields to start rising slowly toward slightly more normal levels.

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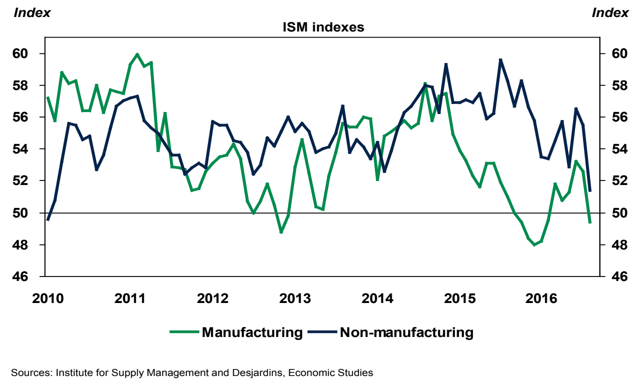
# FEDERAL RESERVE

## A rate increase is expected by year's end

- At their September meeting, Federal Reserve (Fed) leaders opted for a sixth straight status quo. However, the statement issued clearly says that arguments for further monetary firming have gained ground. More unusually, three regional Fed presidents voted for an immediate rate increase. However, a majority of monetary policy committee members no doubt wanted to make sure that U.S. economic growth really is picking up speed. Some of the indicators for August seemed to suggest the opposite, such as the sharp drop taken by the ISM indexes (graph 2), soft employment growth compared with the strong hiring seen in June and July, and slowing retail sales (graph 3).
- Moreover, inflation is still well below the Fed's targets. The last time the annual change in the consumption expenditure deflator was above the 2% target was April 2012 (graph 4). Inflation should remain under the target the coming quarters, which will be a major factor in having key rates go up very gradually. But this factor will not be enough to completely prevent monetary policy firming. It will be conceivable as soon as Fed leaders are more convinced that the U.S. economy is strengthening. The door is already open: at the press conference, Janet Yellen emphasized that "there are clear signs that the economy is responding with more strength."
- Two Fed meetings remain by year's end, on November 2 and December 14. The first falls six days before the presidential election, a risky situation. The Republican candidate, Donald Trump, is also trying to make monetary policy an election issue: "We have a Fed that's doing political things... This Janet Yellen of the Fed... is being political by keeping the interest rates at this level," he said in the first presidential debate. The Fed maintains that it is apolitical, that the electoral calendar has no influence on its decisions, and that every meeting counts. It is, however, clear that the next move would be more appropriate after the election.

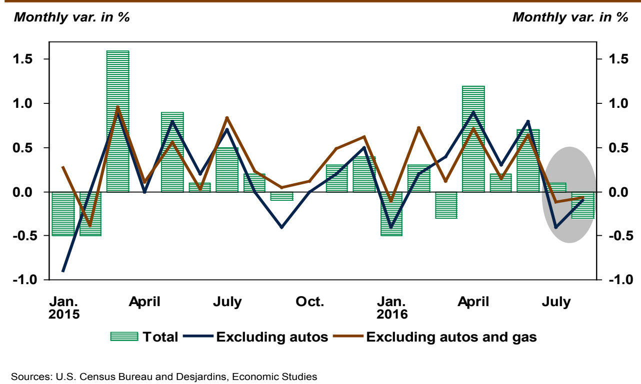
**Forecasts:** If the election results do not have too much of an impact on confidence and the markets, the Fed should opt for a 25 basis point increase to its target for the federal funds rate at its December meeting. Following a single rate increase in 2015 and one in 2016, we expect two 25 point increases in 2017.

**Graph 2 – The ISM indices have experienced a surprise pullback in August**



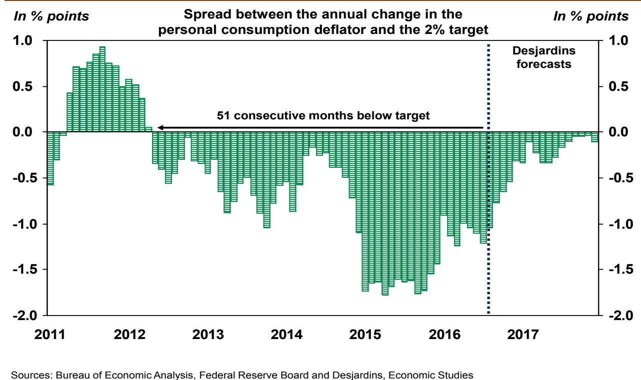

Sources: Institute for Supply Management and Desjardins, Economic Studies

**Graph 3 – U.S. retail sales growth has been disappointing so far in Q3 2016**




Sources: U.S. Census Bureau and Desjardins, Economic Studies

**Graph 4 – Inflation will remain low, but will approach the Federal Reserve target**




Sources: Bureau of Economic Analysis, Federal Reserve Board and Desjardins, Economic Studies

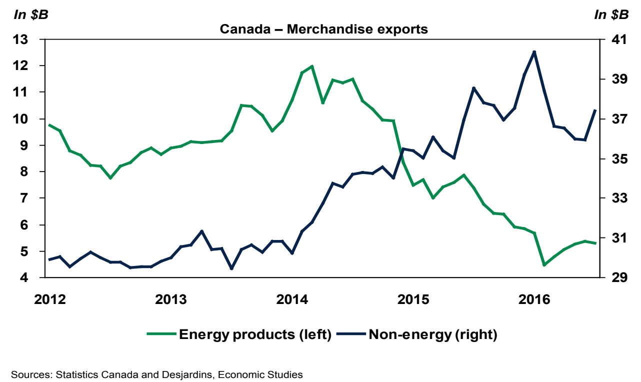
# BANK OF CANADA

## No change in sight before summer 2018

- Despite the second quarter's problems, monetary authorities did not succumb to the temptation to cut Canada's key interest rates again. Note that most of the spring problems are temporary. Non-energy exports are already showing signs of improvement (graph 5), suggesting international trade should once again make a positive contribution to economic growth as of the third quarter. Oil output should also finish bouncing back after May's forest fires. Under these conditions, real GDP growth could beat the 3% mark in the third quarter of 2016.
- However, a number of uncertainties will continue to loom over Canada's economic vitality in the coming quarters. Will exports manage to keep trending up thanks to improved U.S. demand and a weak loonie? How far-reaching will the benefits of the federal government's stimulus measures be? Will the recent slowdown in British Columbia's housing market (graph 6) intensify and spread to other markets?
- The total annual inflation rate dropped from 1.3% in July to 1.1% in August, which is below the projections. This bears out the Bank of Canada's (BoC) concerns; its leaders have recently said several times that the "risks to the profile for inflation have tilted somewhat to the downside since July." That being said, core inflation is very stable. It has been between 1.8% and 2.4% for two years now (graph 7).
- Household debt continues to rise and the debt service ratio increased to 14.15% in the spring, above the historic average (12.81%). However, the average interest rate on household debt has never been this low, at 3.90% in the second quarter. This indicates some consumer vulnerability to eventual key rate increases. Under these conditions, the BoC should move very slowly when it is time to firm up its monetary conditions.

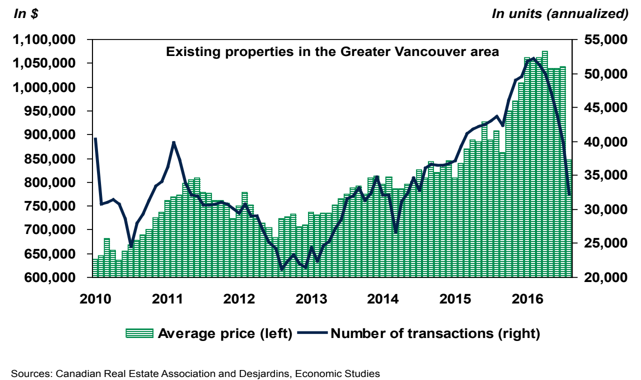
**Forecasts:** Failing another unexpected shock that affects Canada's economy, the monetary authorities will not cut key interest rates again, especially in the context of high consumer debt. However, it will be quite some time before an increase is ordered to the target for the overnight rate. Only in the third quarter of 2018 will the uncertainty be likely to have waned enough to allow gradual monetary firming, a little later than we previously thought.

**Graph 5 – Non-energy exports started Q3 on a positive note**



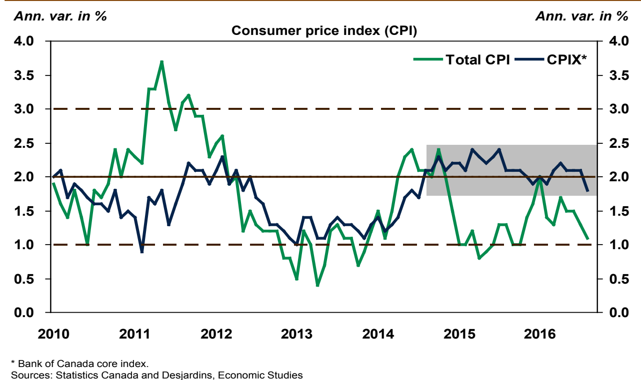

Sources: Statistics Canada and Desjardins, Economic Studies

**Graph 6 – The Greater Vancouver housing market corrected after the tax was introduced**




Sources: Canadian Real Estate Association and Desjardins, Economic Studies

**Graph 7 – Underlying inflation has been very stable for several months in Canada**




* Bank of Canada core index.
Sources: Statistics Canada and Desjardins, Economic Studies

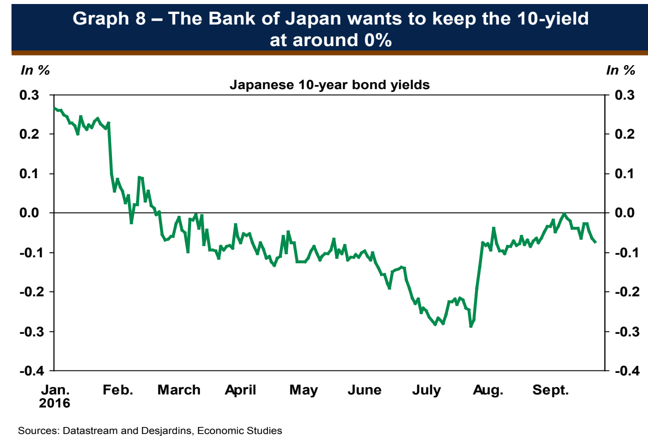
# OVERSEAS CENTRAL BANK

## Several changes to the Japanese monetary policy framework

### BANK OF JAPAN (BoJ)

- The BoJ announced several changes to its monetary policy on September 21. Firstly, it will now exercise greater control over the yield curve and has decided to set a target of about 0% for the 10-year bond yield. This change made other adjustments necessary. The BoJ no longer has a target for the average maturity of the securities it buys. The pace of security purchases could also change from month to month; the target of 80 billion in purchases per year seems a little less rigid than before. On another front, to show even more determination to get inflation up, the BoJ says it wants to tolerate inflation higher than the 2% target to make up for the period in which inflation was below the target.
- In fact, the BoJ did not announce new security purchases or an interest rate cut, disappointing the markets. The target for the 10-year yield did not involve any particular intervention, as the rate is already close to 0% (graph 8). Still, with the new framework introduced, it will be easier to take rates on central bank deposits into negative territory. After that, by saying it wants to tolerate a higher inflation rate, the BoJ is intimating that the existing measures will be maintained even longer than originally expected.

**Graph 8 – The Bank of Japan wants to keep the 10-yield at around 0%**

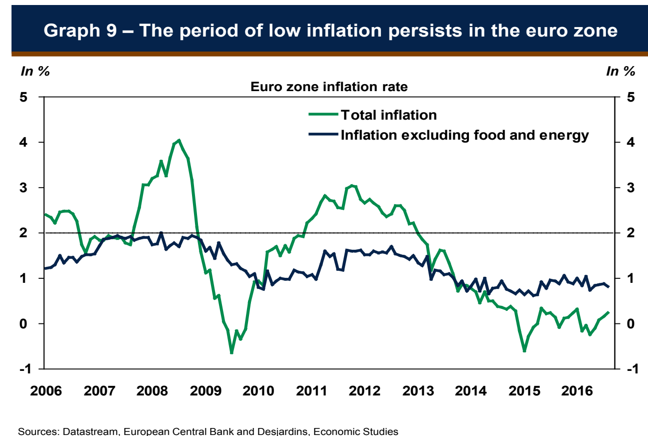



Sources: Datastream and Desjardins, Economic Studies

### EUROPEAN CENTRAL BANK (ECB)

- In contrast with what it had intimated in July, the ECB did not bolster its monetary policy in September. Some analysts were, at a minimum, expecting an extension to the securities purchasing program, now slated to end in March 2017. Adding to the surprise at its lack of action, the ECB entered into a monetary policy assessment process to determine whether it can complete the measures already announced. There could therefore be a few technical changes to its monetary policy framework. Due to weak inflation, we believe a highly accommodative policy will remain relevant for several quarters (graph 9).

**Graph 9 – The period of low inflation persists in the euro zone**

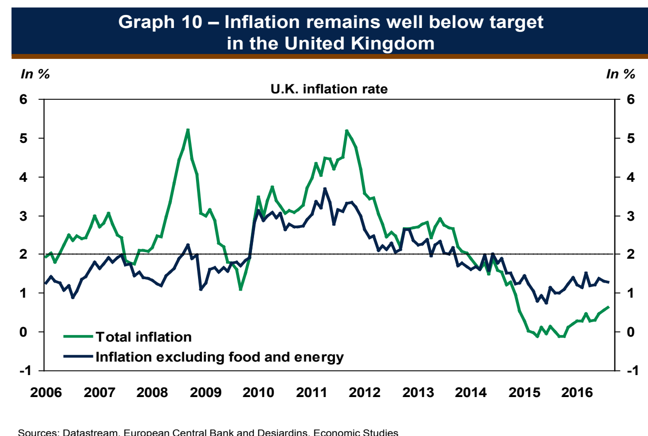



Sources: Datastream, European Central Bank and Desjardins, Economic Studies

### BANK OF ENGLAND (BoE)

- The BoE was more discreet in September following August's announcements. It still seems to want to stay on track for other intervention, unless the economic scenario is substantially upgraded. Our forecasts include another interest rate cut before the end of the year. Although the pound is down more than 10% since June, inflation remains very low and the risks looming over the economy are adding a lot of uncertainty as to the future direction of prices (graph 10).

**Graph 10 – Inflation remains well below target in the United Kingdom**




Sources: Datastream, European Central Bank and Desjardins, Economic Studies

# BOND MARKET

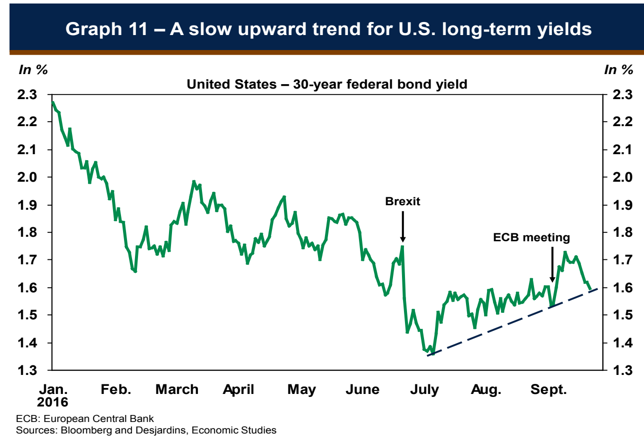
## The long flattening trend seems to be winding down

### U.S. FEDERAL BONDS

- After dropping below 1.40% the day after the Brexit vote, the U.S. 10-year yield then recovered very slowly. Volatility was fairly low up to the September 8 European Central Bank (ECB) meeting. President Mario Draghi then surprised investors by failing to announce an extension to the quantitative easing program. Long-term yields rebounded worldwide, making yield slopes steepen. The United States was affected as well, with the 30-year yield climbing 23 basis points in the week after the news. However, the movement was short-lived. Bargain hunters emerged and, by the end of the month, nearly all of the increase in the U.S. 30-year bond yield had been erased. Thus, the yield simply returned to its post-Brexit trend (graph 11).
- Meanwhile, the Federal Reserve (Fed) renewed warnings about an impending rate hike. Three voting members of the monetary policy committee dissented from the decision to keep rates stable at the September 21 meeting, the highest level of dissent in five years. This did not destabilize the markets too much, as an increase was already priced in with a probability of just over 50%. There is little chance the priced-in probability will increase substantially before the U.S. election on November 8. Voting intentions are tighter (graph 12), and the markets could worry about the instability that a Donald Trump victory would likely entail.
- By contrasts, a Hillary Clinton win would ensure a certain degree of political continuity. Combined with some recovery in the economic numbers this fall, this would give the Fed the confidence it needs to go forward with tightening in December. We are banking on that scenario, and we believe the curve's long flattening trend is coming to an end (graph 13). Among other things, the adjustments to monetary stimulus programs in Japan (and possibly in Europe) could well lead to less sustained international demand for U.S. longer-term bonds.

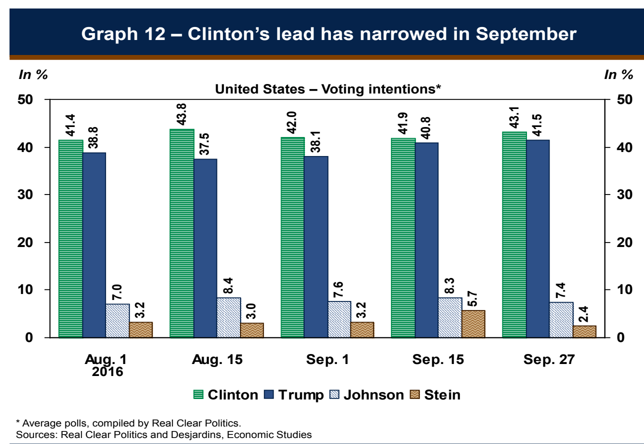
**Forecasts:** As the Fed should announce a rate increase in December, short-term yields should rise modestly. We expect the 2-year yield to end the year at 1.00%. The 10-year yield should wind up the year at 1.85%. Yields will keep climbing slowly in 2017, as the economy accelerates. The 10-year yield will thus end 2017 at 2.30%.

**Graph 11 – A slow upward trend for U.S. long-term yields**



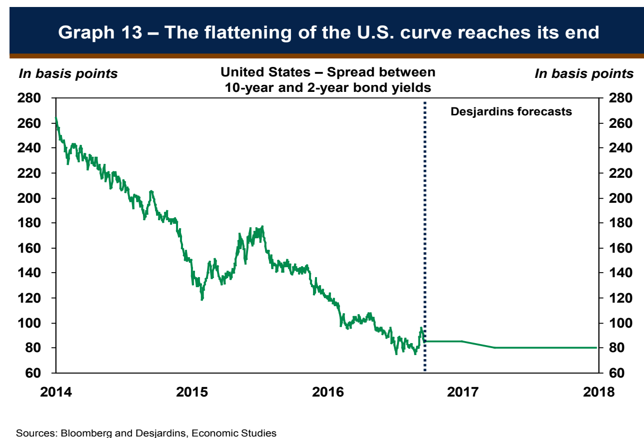

ECB: European Central Bank
Sources: Bloomberg and Desjardins, Economic Studies

**Graph 12 – Clinton's lead has narrowed in September**




* Average polls, compiled by Real Clear Politics.
Sources: Real Clear Politics and Desjardins, Economic Studies

**Graph 13 – The flattening of the U.S. curve reaches its end**



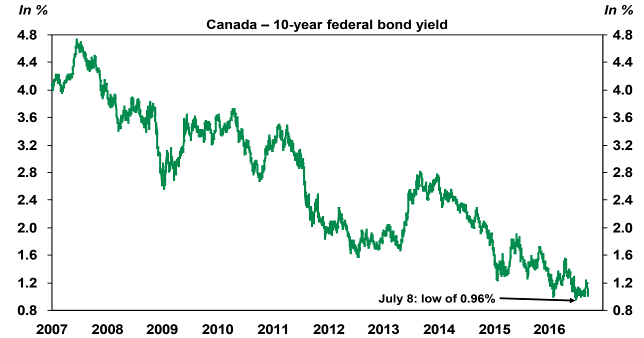

Sources: Bloomberg and Desjardins, Economic Studies

## CANADIAN FEDERAL BONDS

- A major economic contraction in Canada's economy during the second quarter combined with the Brexit outcome to take yields down sharply at the start of the summer. In July, Canada's 10-year yield set a new historic low, at 0.96% (graph 14). Unlike U.S. yields, which gradually crept higher over the summer, Canadian yields have, in general, stood still. Spreads between Canadian and U.S. yields therefore headed down. For 10-year bonds, the spread was at -37 basis points at the end of June. It was around -58 basis points on September 26, its lowest point since March.
- Investors in futures contract barely changed their perception of the Bank of Canada (BoC) over the summer. Overall, futures stayed positioned for a long status quo, a notion that the BoC reinforced in its July statement. However, September's statement showed some concern about exports and the orientation of inflation risks. August's surprise drop in inflation evoked these concerns for investors, and the markets now put the likelihood of a key rate cut at close to 40% over a 6-month horizon (graph 15).
- We think the risks of a rate cut are fairly small. Even though the latest inflation figures were disappointing, growth promises to be robust in the third quarter, with the impact of the budget stimulus measures still to be felt. These conditions continues to advocate for patience on the part of the BoC. We do believe this patience will also apply to eventual rate increases, and do not expect Canada to experience monetary tightening before July 2018. Recent remarks by BoC leaders suggest that the Bank will want to make sure that the economy's lengthy adjustment is well rooted before reducing the level of monetary stimulus. Officials seem to have taken note of the string of disappointments seen in recent years in terms of growth (graph 16), and will likely not to want to risk making the mistake of disengaging prematurely.
- The BoC's extended status quo means that Canada's short-term bonds should outperform their U.S. counterparts. The 2-year spread should drop further, reaching -65 basis points at the end of 2017. The 5-year spread could go to -70 points as of the second quarter of next year; it is now around -50 points. Spreads are also expected to dig lower for 10- and 30-year bonds, but not as much.

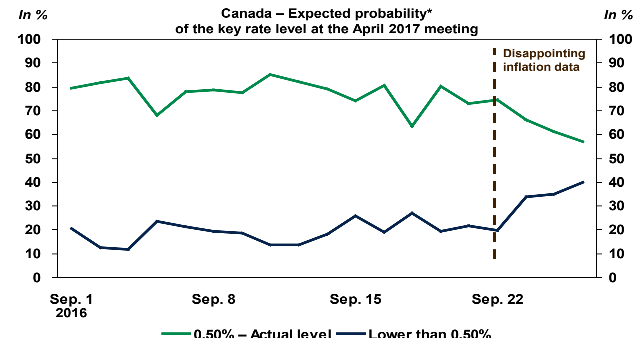
**Forecasts:** The BoC's policy will continue to diverge from U.S. policy, creating a situation in which Canadian bond yields will not go up as much as in the United States. The 10-year yield will end the year at just 1.20%, then climb to 1.55% at the end of 2017. Only in 2018 can we expect the yield to once again come close to 2.00%.

**Graph 14 – The Canadian 10-year yield evolves around its recent historic low**



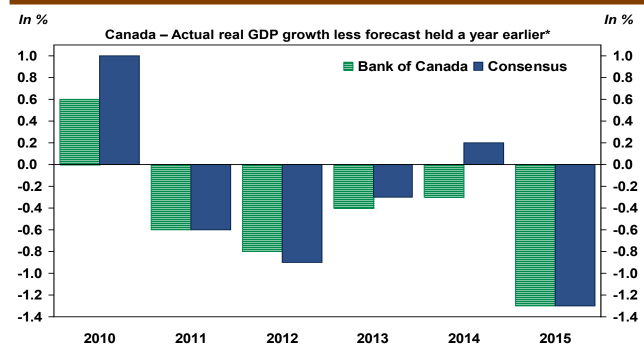

Sources: Bloomberg and Desjardins, Economic Studies

**Graph 15 – Markets begin to speculate on the possibility of a rate cut in Canada**




* According to swaps indexed to the overnight rate, Bloomberg estimate.
Sources: Bloomberg and Desjardins, Economic Studies

**Graph 16 – Canadian growth tends to not meet prior expectations**

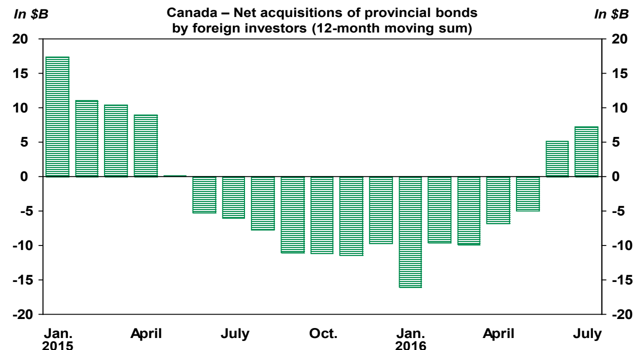



* Forecast as of April of the preceding year.
Sources: Bank of Canada and Desjardins, Economic Studies

## PROVINCIAL AND CORPORATE BONDS

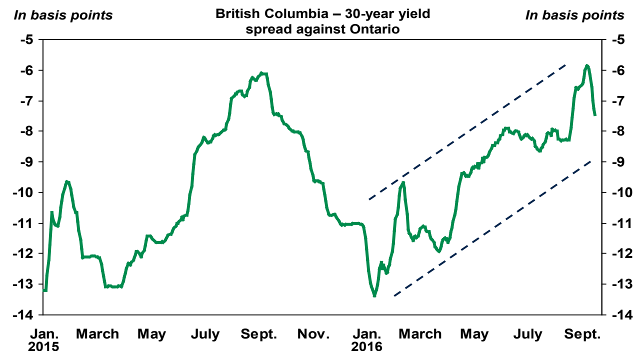
- Spreads between provincial and federal government borrowing costs are still on the downtrend that began at the end of last spring. Volatility, which was generally low in the bond markets over the summer, was helpful to provincial bonds. The rapid recovery in risk appetite after Brexit also helped this asset class. Among other things, the rise in long-term federal bond yields during a portion of September did not lead to spread widening.
- Conditions were therefore generally favourable for issuers. Mid-way through the 2016–2017 fiscal year, most of the provinces are up to date with their financing calendars. Meanwhile, interest from foreign investors has solidified and they have started to replenish their provincial bond portfolios after reducing their holdings through much of 2015 (graph 17). The global context helped with this turnaround. For example, at 1.80%, the yield on an Ontario 10-year bond is nearly 200 basis points higher than the yield on its German counterpart. Even when accounting for differences in credit ratings, this is a meaningful difference.
- The Fall season is synonymous with budget updates, which include adjustments to the growth outlooks. There are few surprises on the agenda. We have adjusted our Ontario growth outlook slightly for this year, taking it to 2.4%. The government had forecast growth of 2.2% in its last budget and, all in all, is still poised to balance its budget next year, as anticipated. Quebec already has a surplus. Since March, we have increased our growth target by 0.1 percentage point to 1.3%, which is still somewhat lower than the Finance Minister's assumption (1.5%). With a forecast surplus of $2.0B (including a contingency fund of $400M), there is a lot of latitude in Quebec's public finances if growth fails to entirely fulfil expectations. British Columbia also has a surplus, but the real estate market correction that seems to be materializing is a risk to the outlook. The yield spread between British Columbia and Ontario has hovered in the top of its range recently (graph 18).
- For corporate bonds, spreads continue to shrink in the United States, reversing much of the uptrend that had coincided with the plunge by oil prices. Accommodative monetary policies in many parts of the world have pushed investors toward riskier asset classes, which provide better returns. This means that the market is increasingly disassociating itself from the fundamentals. For example, rate spreads are dropping even though business bankruptcies are up somewhat in the United States (graph 19). This underscores the risk for sharp reversals. The current anxiety over the solidity of European banks' financial positions is another factor that bears monitoring. It has triggered a selloff of bank bonds, and the environment has been hostile enough to keep a number of bank issuers on the sidelines.

**Graph 17 – Provincial bonds are popular again with foreigners**



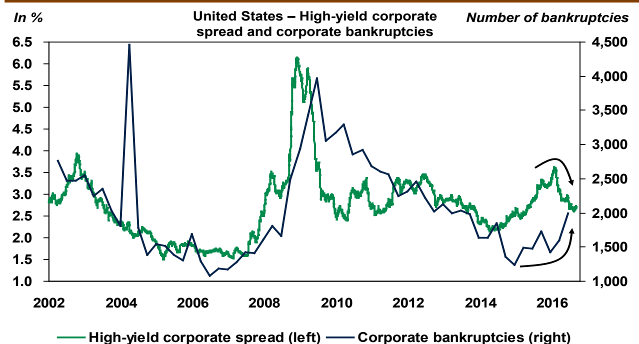

Sources: Statistics Canada and Desjardins, Economic Studies

**Graph 18 – British Columbia's bonds underperformed against Ontario bonds**




Sources: Bloomberg and Desjardins, Economic Studies

**Graph 19 – The drop in additional returns required for the riskiest bonds seems unjustified**




Sources: Datastream and Desjardins, Economic Studies

## Table 1
## Key interest rates

| End of period in % | 2015 Q1 | 2015 Q2 | 2015 Q3 | 2015 Q4 | 2016 Q1 | 2016 Q2 | 2016 Q3f | 2016 Q4f | 2017 Q1f | 2017 Q2f | 2017 Q3f | 2017 Q4f |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **United States** | | | | | | | | | | | | |
| Federal funds | 0.25 | 0.25 | 0.25 | 0.50 | 0.50 | 0.50 | 0.50 | 0.75 | 0.75 | 1.00 | 1.00 | 1.25 |
| **Canada** | | | | | | | | | | | | |
| Overnight funds | 0.75 | 0.75 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| **Euro zone** | | | | | | | | | | | | |
| Refinancing rate | 0.05 | 0.05 | 0.05 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **United Kingdom** | | | | | | | | | | | | |
| Base rate | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.25 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 |
| **Japan** | | | | | | | | | | | | |
| Main key rate | 0.10 | 0.10 | 0.10 | 0.10 | -0.10 | -0.10 | -0.10 | -0.20 | -0.20 | -0.20 | -0.20 | -0.20 |

f: forecasts
Sources: Datastream and Desjardins, Economic Studies

## Table 2
## Schedule and key rates

| Date | Central Bank | Decision | Rate |
|---|---|---|---|
| **July 2016** | | | |
| 5 | Reserve Bank of Australia | s.q. | 1.75 |
| 6 | Bank of Sweden | s.q. | -0.50 |
| 13 | Bank of Korea | s.q. | 1.25 |
| 13 | Bank of Canada | s.q. | 0.50 |
| 14 | Bank of England | s.q. | 0.50 |
| 20 | Bank of Brazil | s.q. | 14.25 |
| 21 | European Central Bank | s.q. | 0.00 |
| 27 | Federal Reserve | s.q. | 0.25 / 0.50 |
| 28 | Bank of Japan | s.q. | -0.10 |
| **August 2016** | | | |
| 2 | Reserve Bank of Australia | s.q. | 1.75 |
| 4 | Bank of England | s.q. | 0.50 |
| 10 | Bank of Korea | s.q. | 1.25 |
| 10 | Reserve Bank of New Zealand | s.q. | 2.25 |
| 11 | Bank of Mexico | s.q. | 4.25 |
| 31 | Bank of Brazil | s.q. | 14.25 |
| **September 2016** | | | |
| 6 | Reserve Bank of Australia | s.q. | 1.75 |
| 7 | Bank of Canada | s.q. | 0.50 |
| 7 | Bank of Sweden | s.q. | -0.50 |
| 8 | European Central Bank | s.q. | 0.00 |
| 8 | Bank of Korea | s.q. | 1.25 |
| 15 | Bank of England | s.q. | 0.50 |
| 15 | Swiss National Bank | s.q. | -0.75 |
| 21 | Reserve Bank of New Zealand | s.q. | 2.25 |
| 21 | Bank of Japan | s.q. | -0.10 |
| 21 | Federal Reserve | s.q. | 0.25 / 0.50 |
| 22 | Bank of Norway | s.q. | 0.50 |

s.q.: status quo; b.p. : basis points
Source: Desjardins, Economic Studies

## Table 3
## Coming soon

| Date | Central Bank |
|---|---|
| **September 2016** | |
| 29 | Bank of Mexico |
| **October 2016** | |
| 3 | Reserve Bank of Australia |
| 12 | Bank of Korea |
| 13 | Bank of England |
| 19 | Bank of Brazil |
| 19 | Bank of Canada |
| 20 | European Central Bank |
| 27 | Bank of Norway |
| 27 | Bank of Sweden |
| 31 | Reserve Bank of Australia |
| 31 | Bank of Japan |
| **November 2016** | |
| 2 | Federal Reserve |
| 3 | Bank of England |
| 9 | Reserve Bank of New Zealand |
| 10 | Bank of Korea |
| 17 | Bank of Mexico |
| 30 | Bank of Brazil |
| **December 2016** | |
| 5 | Reserve Bank of Australia |
| 7 | Bank of Canada |
| 8 | European Central Bank |
| 14 | Bank of Korea |
| 14 | Federal Reserve |
| 15 | Bank of England |
| 15 | Bank of Norway |
| 15 | Bank of Mexico |
| 15 | Swiss National Bank |

Source: Desjardins, Economic Studies

## Table 4
## United States: fixed income market

| End of period in % | 2015 Q1 | 2015 Q2 | 2015 Q3 | 2015 Q4 | 2016 Q1 | 2016 Q2 | 2016 Q3f | 2016 Q4f | 2017 Q1f | 2017 Q2f | 2017 Q3f | 2017 Q4f |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Key rate** | | | | | | | | | | | | |
| Federal funds | 0.25 | 0.25 | 0.25 | 0.50 | 0.50 | 0.50 | 0.50 | 0.75 | 0.75 | 1.00 | 1.00 | 1.25 |
| **Treasury bills** | | | | | | | | | | | | |
| 3-month | 0.03 | 0.01 | 0.00 | 0.16 | 0.21 | 0.26 | 0.25 | 0.50 | 0.55 | 0.80 | 0.85 | 1.05 |
| **Federal bonds** | | | | | | | | | | | | |
| 2-year | 0.54 | 0.60 | 0.60 | 1.04 | 0.75 | 0.58 | 0.80 | 1.00 | 1.10 | 1.30 | 1.35 | 1.50 |
| 5-year | 1.37 | 1.63 | 1.33 | 1.65 | 1.21 | 1.00 | 1.15 | 1.50 | 1.60 | 1.80 | 1.85 | 1.95 |
| 10-year | 1.93 | 2.35 | 2.03 | 2.27 | 1.78 | 1.49 | 1.60 | 1.85 | 1.90 | 2.10 | 2.15 | 2.30 |
| 30-year | 2.54 | 3.12 | 2.85 | 3.02 | 2.62 | 2.31 | 2.30 | 2.50 | 2.55 | 2.65 | 2.70 | 2.80 |
| **Yield curve** | | | | | | | | | | | | |
| 5-year - 3-month | 1.34 | 1.62 | 1.33 | 1.49 | 1.00 | 0.74 | 0.90 | 1.00 | 1.05 | 1.00 | 1.00 | 0.90 |
| 10-year - 2-year | 1.39 | 1.75 | 1.44 | 1.23 | 1.03 | 0.91 | 0.80 | 0.85 | 0.80 | 0.80 | 0.80 | 0.80 |
| 30-year - 3-month | 2.51 | 3.11 | 2.85 | 2.86 | 2.41 | 2.05 | 2.05 | 2.00 | 2.00 | 1.85 | 1.85 | 1.75 |

f: forecasts
Sources: Datastream and Desjardins, Economic Studies

## Table 5
## Canada: fixed income market

| End of period in % | 2015 Q1 | 2015 Q2 | 2015 Q3 | 2015 Q4 | 2016 Q1 | 2016 Q2 | 2016 Q3f | 2016 Q4f | 2017 Q1f | 2017 Q2f | 2017 Q3f | 2017 Q4f |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Key rate** | | | | | | | | | | | | |
| Federal funds | 0.75 | 0.75 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| **Treasury bills** | | | | | | | | | | | | |
| 3-month | 0.56 | 0.58 | 0.44 | 0.50 | 0.44 | 0.49 | 0.50 | 0.50 | 0.50 | 0.55 | 0.55 | 0.55 |
| **Federal bonds** | | | | | | | | | | | | |
| 2-year | 0.50 | 0.48 | 0.52 | 0.48 | 0.54 | 0.52 | 0.50 | 0.55 | 0.60 | 0.70 | 0.75 | 0.85 |
| 5-year | 0.76 | 0.82 | 0.80 | 0.73 | 0.67 | 0.57 | 0.60 | 0.85 | 0.95 | 1.10 | 1.15 | 1.20 |
| 10-year | 1.36 | 1.69 | 1.43 | 1.40 | 1.23 | 1.06 | 1.00 | 1.20 | 1.25 | 1.40 | 1.45 | 1.55 |
| 30-year | 1.98 | 2.31 | 2.20 | 2.15 | 2.00 | 1.71 | 1.65 | 1.80 | 1.85 | 1.95 | 2.00 | 2.10 |
| **Yield curve** | | | | | | | | | | | | |
| 5-year - 3-month | 0.20 | 0.24 | 0.36 | 0.23 | 0.23 | 0.08 | 0.10 | 0.35 | 0.45 | 0.55 | 0.60 | 0.65 |
| 10-year - 2-year | 0.85 | 1.20 | 0.91 | 0.92 | 0.69 | 0.54 | 0.50 | 0.65 | 0.65 | 0.70 | 0.70 | 0.70 |
| 30-year - 3-month | 1.42 | 1.73 | 1.76 | 1.65 | 1.56 | 1.22 | 1.15 | 1.30 | 1.35 | 1.40 | 1.45 | 1.55 |
| **Spreads** (Canada - U.S.) | | | | | | | | | | | | |
| 3-month | 0.53 | 0.57 | 0.44 | 0.34 | 0.23 | 0.23 | 0.25 | 0.00 | -0.05 | -0.25 | -0.30 | -0.50 |
| 2-year | -0.04 | -0.11 | -0.08 | -0.56 | -0.22 | -0.06 | -0.30 | -0.45 | -0.50 | -0.60 | -0.60 | -0.65 |
| 5-year | -0.60 | -0.81 | -0.53 | -0.92 | -0.54 | -0.43 | -0.55 | -0.65 | -0.65 | -0.70 | -0.70 | -0.75 |
| 10-year | -0.57 | -0.66 | -0.60 | -0.87 | -0.56 | -0.43 | -0.60 | -0.65 | -0.65 | -0.70 | -0.70 | -0.75 |
| 30-year | -0.56 | -0.81 | -0.66 | -0.87 | -0.62 | -0.59 | -0.65 | -0.70 | -0.70 | -0.70 | -0.70 | -0.70 |

f: forecasts
Sources: Datastream and Desjardins, Economic Studies