



Aggregate CFIF Survey Results on Liquidity, Transparency and Market Access in Canadian Fixed Income Markets

October 2016

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The results of the 2016 Canadian Fixed-Income Forum (CFIF) survey on liquidity, transparency and market access in Canadian fixed-income markets summarize personal opinions expressed by the survey respondents and do not necessarily reflect the views of CFIF or those of individual CFIF members. The results are not a representation of market share and therefore are not to be used for commercial purposes.

A high-level summary of the aggregated results have been published on the [CFIF website](#).

Survey Description

This survey has been prepared by the Canadian Fixed-Income Forum (CFIF) to identify changes in trading, execution and portfolio management practices by both buy- and sell-side firms, and select active domestic issuers participating in the Canadian fixed-income market. Survey responses will help identify how market liquidity has changed and how market participants are adjusting to these changes

The survey was conducted electronically from June to August 2016, and featured multiple choice questions that in some cases allowed for short-answer responses or the ranking of several options. The survey was sent to approximately 700 firms worldwide via email, and it took approximately 30-45 minutes to complete.

Survey Considerations

When reviewing the results, please take into consideration the following:





- This survey is meant to gather data on opinions and perceptions of individuals and the numbers presented are based on individual perceptions, not exact institutional figures;
- Responses represent opinions of individual respondents which may differ from the official views of the institutions they work for;
- All individual responses were equally weighted and do not take into account the relative activity or size of the respondent;
- In some cases the survey was responded to by multiple individuals within the same organization (these responses may represent the views of different trading desks);
- Most survey questions were optional and could be skipped;
- Some questions were general in nature and applicable to all respondents, while others were specific to the type of respondent;
- Some survey questions were conditional on previous answers, e.g. questions about changes in corporate bond trading and liquidity were asked only to those who answered that they traded corporate bonds;
- Questions relating to changes in liquidity or market practices relate to changes occurring over the past two years, and do not necessarily reflect changes that may have taken place prior to that time period; and
- The results exclude any “Not Applicable” answers.

Due to this structure, the total number of responses vary from question to question.




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Location of respondents

| Response | Chart | Percentage | Count |
|----------------|--|------------------------|------------|
| Canada |  | 76.61% | 226 |
| United Kingdom |  | 4.41% | 13 |
| United States |  | 8.14% | 24 |
| Other |  | 10.85% | 32 |
| | | Total Responses | 295 |









Are you a buy-side (e.g. asset manager or bank treasury) institution, sell-side (e.g. dealer or market making desk) institution or a debt issuer? If your institution does multiple functions, please identify which one you are responding on behalf of.

| Response | Chart | Percentage | Count |
|-------------|--|------------------------|------------|
| Buy-side |  | 76.3% | 225 |
| Sell-side |  | 15.3% | 45 |
| Debt issuer |  | 8.5% | 25 |
| | | Total Responses | 295 |


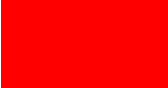






Buy-Side Questions


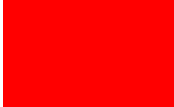

What type of firm are you representing (select the closest match)?

| Response | Chart | Percentage | Count |
|--|---|------------------------|------------|
| Insurance company |  | 12.1% | 27 |
| Pension fund |  | 10.7% | 24 |
| Mutual fund |  | 15.2% | 34 |
| Institutional asset manager |  | 30.8% | 69 |
| Hedge fund |  | 6.7% | 15 |
| Treasury |  | 8.5% | 19 |
| Sovereign wealth / foreign reserves fund |  | 6.3% | 14 |
| Other |  | 9.8% | 22 |
| | | Total Responses | 224 |


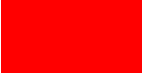



What is the gross value of your Canadian dollar fixed income securities under management across all fixed income portfolios?

| Response | Chart | Percentage | Count |
|----------------------|---|------------------------|------------|
| less than C\$1bn |  | 22.2% | 50 |
| C\$1-9bn |  | 34.2% | 77 |
| C\$10-24bn |  | 23.6% | 53 |
| C\$25-49bn |  | 6.7% | 15 |
| C\$50bn or more |  | 9.8% | 22 |
| prefer not to answer |  | 3.6% | 8 |
| | | Total Responses | 225 |

Do you have an active or passive mandate for managing your Canadian dollar fixed income portfolio?

| Response | Chart | Percentage | Count |
|-------------------------|---|------------|------------|
| Active only |  | 58.5% | 131 |
| Both active and passive |  | 32.1% | 72 |
| Passive only |  | 9.4% | 21 |
| Total Responses | | | 224 |

How frequently on average, do you trade in the Canadian dollar fixed income market?

| Response | Chart | Percentage | Count |
|--------------------------------|---|------------------------|------------|
| More than 10 trades per day |  | 21.9% | 49 |
| Between 2 to 10 trades per day |  | 26.3% | 59 |
| 1 trade per day |  | 5.4% | 12 |
| Several trades per week |  | 33.5% | 75 |
| One or less trades per week |  | 12.9% | 29 |
| | | Total Responses | 224 |

What Canadian dollar fixed income asset classes do you trade?

Please select all that apply.

| Response | Chart | Percentage | Count |
|---|-------|------------|------------|
| Government of Canada securities | | 93.8% | 212 |
| Canada Mortgage bonds (CMB) | | 71.7% | 162 |
| NHA-MBS | | 31.9% | 72 |
| Provincial and municipal bonds | | 78.3% | 177 |
| Investment grade corporate bonds (including public private partnership bonds) | | 65.9% | 149 |
| High yield corporate bonds | | 28.8% | 65 |
| Asset-backed securities (including CMBS) | | 41.2% | 93 |
| Maple bonds | | 47.8% | 108 |
| Repo (bonds) | | 23.9% | 54 |
| Money market instruments | | 59.7% | 135 |
| Bond/BAX futures | | 32.3% | 73 |
| Interest rate swaps | | 33.6% | 76 |
| Total Responses | | | 226 |

Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

What Canadian dollar fixed income asset classes do you lend through a securities lending program? Please select all that apply.

| Response | Chart | Percentage | Count |
|---|-------|------------------------|------------|
| Government of Canada securities | | 95.1% | 98 |
| Canada Mortgage Bonds (CMB) | | 52.4% | 54 |
| NHA-MBS | | 17.5% | 18 |
| Provincial and municipal bonds | | 60.2% | 62 |
| Investment grade corporate bonds (including public private partnership bonds) | | 40.8% | 42 |
| High yield corporate bonds | | 11.7% | 12 |
| Asset-backed securities (including CMBS) | | 17.5% | 18 |
| Maple bonds | | 23.3% | 24 |
| Money market instruments | | 25.2% | 26 |
| | | Total Responses | 103 |

Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

How has the number of sell-side counterparties you use changed in the past two years?



| Response | Chart | Percentage | Count |
|-------------------------|-------|------------------------|------------|
| Declined significantly | | 4.0% | 9 |
| Declined somewhat | | 23.6% | 53 |
| Relatively unchanged | | 56.9% | 128 |
| Increased somewhat | | 10.7% | 24 |
| Increased significantly | | 1.3% | 3 |
| Not sure | | 2.2% | 5 |
| Prefer not to answer | | 1.3% | 3 |
| | | Total Responses | 225 |

What are your primary decision factors for choosing a dealer for fixed-income trading? Please select a maximum of three.


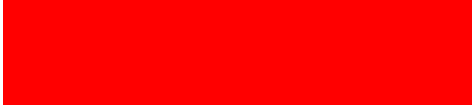
| Response | Chart | Percentage | Count |
|--|-------|------------|------------|
| Willingness/ability to execute specific trading strategies | | 14.8% | 33 |
| Willingness/ability to execute trades on a principal basis | | 35.4% | 79 |
| Consistent competitive pricing | | 88.8% | 198 |
| Speed of providing pricing | | 21.1% | 47 |
| Ability to find an offsetting counterparty for agency trades | | 10.8% | 24 |
| Ability to execute without disrupting the market | | 33.2% | 74 |
| Insight into current market dynamics | | 20.2% | 45 |
| Research and sales coverage | | 35.9% | 80 |
| Primary market activity | | 16.1% | 36 |
| Securities financing (repo, prime brokerage) | | 2.7% | 6 |
| Other | | 2.2% | 5 |
| Total Responses | | | 223 |

Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.


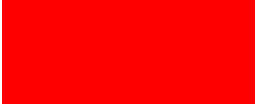
Are your portfolio management and trading/execution functions separated?

| Response | Chart | Percentage | Count |
|-----------------|--|------------|-------|
| Yes |  | 26.7% | 60 |
| No |  | 73.3% | 165 |
| Total Responses | | | 225 |

Did the segregation of your portfolio management and trading/execution functions take place over the last two years?

| Response | Chart | Percentage | Count |
|------------------------|--|------------|-----------|
| Yes |  | 8.5% | 5 |
| No |  | 91.5% | 54 |
| Total Responses | | | 59 |

In the past two years have you changed your Canadian dollar fixed income portfolio management activities in response to changes in market liquidity?


| Response | Chart | Percentage | Count |
|-----------------|---|------------|-------|
| Yes |  | 52.2% | 117 |
| No |  | 47.8% | 107 |
| Total Responses | | | 224 |

How have you changed your Canadian dollar fixed income portfolio management activities? Please select all that apply.


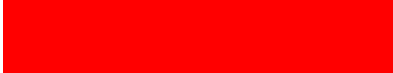
| Response | Chart | Percentage | Count |
|--|-------|------------------------|------------|
| Incorporate a higher level of volatility in internal risk models | | 18.8% | 22 |
| Incorporate a higher level of liquidity risk in internal risk models | | 46.2% | 54 |
| Hold larger liquidity buffers such as cash | | 29.1% | 34 |
| Hold more on-the-run securities | | 69.2% | 81 |
| Hold less on-the-run securities | | 1.7% | 2 |
| Greater use of OTC derivatives | | 12.8% | 15 |
| Reduced use of OTC derivatives | | 0.9% | 1 |
| Greater use of exchange traded products (futures) | | 20.5% | 24 |
| Reduced use of exchange traded products (futures) | | 0.9% | 1 |
| Longer holding periods for less liquid assets | | 58.1% | 68 |
| Shorter holding periods for less liquid assets | | 5.1% | 6 |
| Use fewer trading strategies such as relative value trades | | 45.3% | 53 |
| Use more trading strategies such as relative value trades | | 8.5% | 10 |
| Other | | 22.2% | 26 |
| | | Total Responses | 117 |

Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.




Do you currently trade or do you plan to trade Canadian dollar bond ETFs?

| Response | Chart | Percentage | Count |
|----------|--|------------------------|------------|
| Yes |  | 12.9% | 29 |
| No | | 87.1% | 195 |
| | | Total Responses | 224 |

Do you currently trade or plan to trade US dollar or other foreign currency bond ETFs?

| Response | Chart | Percentage | Count |
|------------------------|--|------------|------------|
| Yes |  | 24.6% | 55 |
| No |  | 75.4% | 169 |
| Total Responses | | | 224 |

Are you doing more tactical short-term trading to take advantage of market dislocations?


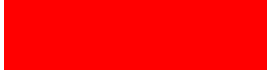

| Response | Chart | Percentage | Count |
|----------------------|---|------------------------|------------|
| Yes |  | 29.9% | 67 |
| No |  | 54.0% | 121 |
| Prefer not to answer |  | 16.1% | 36 |
| | | Total Responses | 224 |

For which of the following Canadian dollar fixed income asset classes do you use these types of liquidity provision strategies? Please select all that apply.


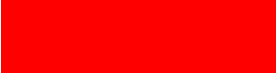

| Response | Chart | Percentage | Count |
|---------------------------------|-------|------------------------|-----------|
| Government of Canada securities | | 71.2% | 47 |
| Canada Mortgage bonds | | 37.9% | 25 |
| NHA-MBS | | 4.5% | 3 |
| Provincial bonds | | 43.9% | 29 |
| Corporate bonds | | 50.0% | 33 |
| Repo markets | | 7.6% | 5 |
| Money market instruments | | 7.6% | 5 |
| Bond/BAX futures | | 28.8% | 19 |
| Interest rate swaps | | 24.2% | 16 |
| Prefer not to answer | | 1.5% | 1 |
| | | Total Responses | 66 |

Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

Would you consider engaging in this type of trading activity in the future?

| Response | Chart | Percentage | Count |
|----------------------|---|------------------------|------------|
| Yes |  | 37.8% | 48 |
| No |  | 51.2% | 65 |
| Prefer not to answer |  | 11.0% | 14 |
| | | Total Responses | 127 |

Are you using your portfolio to help dealers on a bilateral basis better manage their flow and inventory? This could include responding more actively to the dealer's agency trades.




| Response | Chart | Percentage | Count |
|----------------------|---|------------------------|------------|
| Yes |  | 30.0% | 67 |
| No |  | 53.8% | 120 |
| Prefer not to answer |  | 16.1% | 36 |
| | | Total Responses | 223 |

For which of the following Canadian dollar fixed income asset classes do you use these types of liquidity provision strategies? Please select all that apply.

| Response | Chart | Percentage | Count |
|---------------------------------|-------|------------------------|-----------|
| Government of Canada securities | | 36.8% | 25 |
| Canada Mortgage bonds | | 25.0% | 17 |
| NHA-MBS | | 10.3% | 7 |
| Provincial bonds | | 51.5% | 35 |
| Corporate bonds | | 77.9% | 53 |
| Repo markets | | 4.4% | 3 |
| Money market instruments | | 11.8% | 8 |
| Bond/BAX futures | | 4.4% | 3 |
| Interest rate swaps | | 13.2% | 9 |
| Prefer not to answer | | 1.5% | 1 |
| | | Total Responses | 68 |

Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

Would you consider engaging in this type of trading activity in the future?

| Response | Chart | Percentage | Count |
|----------------------|--|------------------------|------------|
| Yes |  | 11.7% | 14 |
| No |  | 78.3% | 94 |
| Prefer not to answer |  | 10.0% | 12 |
| | | Total Responses | 120 |



Sell-Side Questions

Please select the Canadian dollar fixed income asset classes in which you are actively making markets in Canada or abroad.






| Response | Chart | Percentage | Count |
|---|-------|------------------------|-----------|
| Government of Canada securities | | 66.7% | 28 |
| Canada Mortgage bonds (CMB) | | 45.2% | 19 |
| NHA-MBS | | 23.8% | 10 |
| Provincial and municipal bonds | | 50.0% | 21 |
| Investment grade corporate bonds (including public private partnership bonds) | | 47.6% | 20 |
| High yield corporate bonds | | 28.6% | 12 |
| Asset-backed securities (including CMBS) | | 28.6% | 12 |
| Maple bonds | | 28.6% | 12 |
| Repo (bonds) | | 31.0% | 13 |
| Money markets instruments | | 47.6% | 20 |
| Bond/BAX futures | | 23.8% | 10 |
| Interest rate swaps | | 31.0% | 13 |
| | | Total Responses | 42 |

Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

To what extent has your trading inventory increased or decreased over the past two years in each of the following Canadian dollar fixed income asset classes?

| | Declined significantly (-50% or more) | Declined meaningfully (-15 to -49%) | Declined slightly (-5 to -14%) | Relatively unchanged (-4 to +4%) | Increased slightly (+5 to +14%) | Increased meaningfully (+15 to 49%) | Increased significantly (+50% or greater) | Total Responses |
|--|---------------------------------------|-------------------------------------|--------------------------------|----------------------------------|---------------------------------|-------------------------------------|---|-----------------|
| Canadian federal government bonds, including government-guaranteed issuers | 8.3% | 11.1% | 16.7% | 44.4% | 13.9% | 2.8% | 2.8% | 36 |
| Provincial government bonds, including provincially-guaranteed issuers | 6.5% | 16.1% | 32.3% | 22.6% | 22.6% | 0.0% | 0.0% | 31 |
| Corporate bonds (investment grade and high yield) | 0.0% | 10.0% | 40.0% | 30.0% | 16.7% | 3.3% | 0.0% | 30 |
| Repo (bonds) | 4.3% | 17.4% | 4.3% | 52.2% | 8.7% | 13.0% | 0.0% | 23 |
| Money markets instruments | 0.0% | 10.3% | 13.8% | 48.3% | 10.3% | 13.8% | 3.4% | 29 |
| Interest rate swaps (delta traded) | 0.0% | 8.3% | 8.3% | 58.3% | 8.3% | 8.3% | 8.3% | 24 |


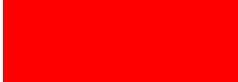
How many institutional clients do you trade Canadian dollar fixed income securities with?

| Response | Chart | Percentage | Count |
|----------------------|---|------------------------|-----------|
| Less than 30 |  | 25.6% | 11 |
| 30 to 69 |  | 9.3% | 4 |
| 70 to 99 |  | 18.6% | 8 |
| 100 or more |  | 44.2% | 19 |
| prefer not to answer |  | 2.3% | 1 |
| | | Total Responses | 43 |










Debt Issuer Questions

Have changes in the underlying liquidity of your fixed income securities or any other changes in market structure impacted either your ability to issue or your issuance process?

| Response | Chart | Percentage | Count |
|------------------------|---|------------|-----------|
| Yes |  | 56.0% | 14 |
| No |  | 44.0% | 11 |
| Total Responses | | | 25 |

How have changes in market liquidity affected the debt issuance process? Please select all that apply.

| Response | Chart | Percentage | Count |
|---|---|------------------------|-----------|
| No impact |  | 0.0% | 0 |
| More difficult to price a new issue (e.g. to agree on a benchmark price or takes longer to price) |  | 35.7% | 5 |
| More difficult to select an appropriate time window to issue |  | 78.6% | 11 |
| Hedging interest rate risk takes longer or is more expensive |  | 35.7% | 5 |
| Spread at issuance is affected by the lack of liquidity of the underlying benchmark pricing bond |  | 71.4% | 10 |
| Preference to issue larger benchmarks |  | 42.9% | 6 |
| Other |  | 28.6% | 4 |
| | | Total Responses | 14 |




Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

How has your syndicate structure changed? Please select all that apply.


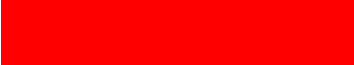








| Response | Chart | Percentage | Count |
|--|-------|------------------------|-----------|
| No change | | 42.9% | 6 |
| Smaller number of lead managers | | 14.3% | 2 |
| Larger number of lead managers | | 28.6% | 4 |
| Smaller number of non-lead syndicate members | | 7.1% | 1 |
| Larger number of non-lead syndicate members | | 14.3% | 2 |
| Smaller number of domestic dealers | | 0.0% | 0 |
| Larger number of domestic dealers | | 0.0% | 0 |
| Other | | 28.6% | 4 |
| | | Total Responses | 14 |

Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

Has the contribution of an individual lead manager changed over the past two years?




| Response | Chart | Percentage | Count |
|------------------------|---|------------|-----------|
| Contribution increased |  | 42.9% | 6 |
| Contribution decreased |  | 42.9% | 6 |
| No change |  | 14.3% | 2 |
| Total Responses | | | 14 |

Has the demand composition for your new issuance changed? Please select all that apply.



| Response | Chart | Percentage | Count |
|------------------------------------|---|------------|-----------|
| No change |  | 0.0% | 0 |
| Larger “lead orders” |  | 71.4% | 10 |
| Smaller “lead orders” |  | 0.0% | 0 |
| More reverse inquiry interest |  | 50.0% | 7 |
| Less reverse inquiry interest |  | 14.3% | 2 |
| Larger order book size |  | 14.3% | 2 |
| Smaller order book size |  | 28.6% | 4 |
| More international investor demand |  | 35.7% | 5 |
| Less international investor demand |  | 7.1% | 1 |
| Other |  | 21.4% | 3 |
| Total Responses | | | 14 |

Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.





Are you hedging your underlying interest rate risk more frequently while waiting for a more opportune time to issue?

| Response | Chart | Percentage | Count |
|---------------------------------|---|------------------------|-----------|
| Yes |  | 44.0% | 11 |
| No |  | 44.0% | 11 |
| Do not hedge interest rate risk |  | 12.0% | 3 |
| | | Total Responses | 25 |





Do you issue bonds in international fixed income markets?

| Response | Chart | Percentage | Count |
|-----------------|--|------------|-------|
| Yes |  | 68.0% | 17 |
| No |  | 32.0% | 8 |
| Total Responses | | | 25 |

How would you rate your ease of access to issue in the Canadian market relative to that of a foreign market, taking into account differences in market size?

| Response | Chart | Percentage | Count |
|---|--|------------------------|-----------|
| Canadian market access more stable |  | 52.9% | 9 |
| Relatively the same |  | 35.3% | 6 |
| International market access more stable |  | 11.8% | 2 |
| Not sure |  | 0.0% | 0 |
| | | Total Responses | 17 |




Do you expect to rely more or less on foreign markets for your total borrowing program in the future?

| Response | Chart | Percentage | Count |
|-----------------------------|---|------------------------|-----------|
| Rely more on foreign market |  | 43.8% | 7 |
| No change in reliance |  | 43.8% | 7 |
| Rely less on foreign market |  | 12.5% | 2 |
| Not sure |  | 0.0% | 0 |
| | | Total Responses | 16 |

Please rank the main reasons for issuing in foreign markets.

| | Rank |
|------------------------------------|---------------------------|
| Investor diversification | 1 |
| Cost advantage | 2 |
| Higher capacity to do larger deals | 3 |
| Reduce impact on domestic spreads | 4 |
| | Total Responses 17 |

Are you considering changing your target size of benchmark bonds in the domestic market? Please select all that apply.

| Response | Chart | Percentage | Count |
|--|---|------------------------|-----------|
| Yes – by issuing larger amounts at a time |  | 28.0% | 7 |
| Yes – by reopening existing issues more frequently |  | 20.0% | 5 |
| No |  | 56.0% | 14 |
| | | Total Responses | 25 |

Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.



Market Liquidity Questions

Please rank the attributes of Canadian fixed income market liquidity in order of importance to you.

| | Rank |
|--|------------------------|
| Ability to execute at the most competitive price | 1 |
| Ability to execute in large size | 2 |
| Ability to execute with immediacy | 3 |
| Ability to execute without moving the market | 4 |
| | Total responses |
| | 281 |

What is your impression of current market liquidity for the following types of Canadian dollar fixed income instruments?

| | Very illiquid | Illiquid | Liquid | Very liquid | Not sure | Total Responses |
|--|---------------|----------|--------|-------------|----------|-----------------|
| Government of Canada securities - Benchmark | 1.0% | 1.7% | 21.1% | 75.8% | 0.3% | 284 |
| Government of Canada securities - Off-the-run | 3.3% | 18.0% | 57.7% | 16.9% | 4.0% | 272 |
| Canada Mortgage bonds (CMB) | 1.6% | 11.7% | 57.2% | 25.3% | 4.2% | 241 |
| NHA-MBS | 13.3% | 33.5% | 29.5% | 2.4% | 21.5% | 173 |
| Provincial bonds | 0.8% | 13.9% | 67.3% | 15.5% | 2.5% | 245 |
| Investment grade corporate bonds - Financial | 2.9% | 30.5% | 52.9% | 6.2% | 7.6% | 210 |
| Investment grade corporate bonds - Non-financial | 14.8% | 50.9% | 25.3% | 0.9% | 8.1% | 210 |
| Repo - General collateral GoC and CMB | 2.3% | 2.3% | 42.3% | 31.0% | 21.9% | 123 |
| Repo - General collateral NHA MBS | 8.6% | 21.7% | 20.6% | 4.4% | 45.3% | 93 |
| Repo - General collateral provincial bonds | 1.9% | 18.5% | 39.8% | 6.5% | 33.3% | 108 |
| Repo - Non GC (specials) | 5.6% | 27.6% | 19.0% | 2.9% | 44.9% | 105 |
| Repo - Non-government | 17.3% | 22.8% | 6.4% | 1.1% | 52.4% | 92 |
| Money markets instruments | 1.4% | 5.0% | 41.9% | 40.4% | 11.3% | 203 |
| Bond/BAX futures | 2.5% | 10.0% | 41.5% | 28.3% | 17.6% | 159 |
| Interest rate swaps | 5.5% | 17.3% | 38.1% | 21.5% | 17.3% | 144 |

Over the past two years, how has market liquidity changed for the following types of Canadian dollar fixed income instruments?

| | Declined significantly | Declined somewhat | Largely unchanged | Increased somewhat | Increased significantly | Not sure | Total Responses |
|--|------------------------|-------------------|-------------------|--------------------|-------------------------|----------|-----------------|
| Government of Canada securities - Benchmark | 1.4% | 32.3% | 56.6% | 5.0% | 0.7% | 3.9% | 281 |
| Government of Canada securities - Off-the-run | 13.6% | 45.8% | 31.8% | 1.5% | 0.4% | 7.0% | 271 |
| Canada Mortgage bonds (CMB) | 6.9% | 41.9% | 36.7% | 5.1% | 0.0% | 9.3% | 234 |
| NHA-MBS | 9.1% | 31.8% | 22.6% | 9.8% | 0.0% | 26.9% | 164 |
| Provincial bonds | 7.0% | 56.7% | 24.1% | 3.7% | 0.5% | 8.0% | 240 |
| Investment grade corporate bonds - Financial | 14.5% | 49.2% | 21.7% | 2.9% | 0.0% | 11.6% | 207 |
| Investment grade corporate bonds - Non-financial | 37.0% | 37.9% | 11.9% | 2.0% | 0.0% | 11.3% | 211 |
| Repo - General collateral GoC and CMB | 4.1% | 25.1% | 36.7% | 3.2% | 0.0% | 30.9% | 120 |
| Repo - General collateral NHA MBS | 5.1% | 18.6% | 18.6% | 4.3% | 0.0% | 53.7% | 97 |
| Repo - General collateral provincial bonds | 6.3% | 25.3% | 20.6% | 4.4% | 0.9% | 42.4% | 111 |
| Repo - Non GC (specials) | 9.7% | 17.8% | 20.6% | 2.8% | 0.0% | 49.1% | 112 |
| Repo - Non-government | 8.2% | 19.6% | 11.4% | 1.1% | 0.0% | 59.9% | 97 |
| Money markets instruments | 3.5% | 26.1% | 50.8% | 3.5% | 0.5% | 15.4% | 195 |
| Bond/BAX futures | 3.9% | 17.4% | 48.1% | 5.1% | 0.0% | 25.6% | 156 |
| Interest rate swaps | 10.9% | 30.1% | 31.6% | 4.2% | 0.0% | 23.2% | 146 |

How would you rate the relative liquidity of the following Canadian fixed income products to those of other international markets, taking into account differences in market size?

| | Canadian liquidity relatively better | About the same | Canadian liquidity relatively worse | Not sure | Total Responses |
|--|--------------------------------------|----------------|-------------------------------------|----------|-----------------|
| Direct sovereign bonds, e.g. US Treasuries | 4.9% | 29.8% | 50.9% | 14.3% | 265 |
| Sub-sovereign and guaranteed agency bonds | 9.4% | 27.0% | 34.4% | 29.2% | 233 |
| Investment grade corporate bonds | 8.8% | 20.0% | 43.7% | 27.4% | 215 |


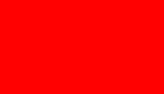

How has liquidity changed over the past two years for the following Canadian fixed income products relative to those of other international markets, taking into account differences in market size?

| | Canadian relative position improved | About the same | Canadian relative position deteriorated | Not sure | Total Responses |
|--|-------------------------------------|----------------|---|----------|-----------------|
| Direct sovereign bonds, e.g. US Treasuries | 5.3% | 48.7% | 27.9% | 18.0% | 261 |
| Sub-sovereign and guaranteed agency bonds | 7.4% | 36.0% | 23.9% | 32.6% | 230 |
| Investment grade corporate bonds | 10.4% | 27.4% | 33.0% | 29.2% | 212 |


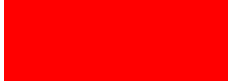

Please rank the aspects of liquidity you are most concerned about.

| | Rank |
|--|------|
| Amount of liquidity available during market stress (e.g. periods of high price volatility or high uncertainty) | 1 |
| Increasing volatility in the amount of liquidity | 2 |
| Amount of liquidity available on an average day | 3 |
| Increasing pro-cyclicality of liquidity | 4 |
| Total Responses | 279 |




Do you think that the major benchmark indices support fixed income market functioning and price discovery?

| Response | Chart | Percentage | Count |
|------------------------|---|------------|------------|
| Yes |  | 28.3% | 75 |
| No |  | 30.9% | 82 |
| Not sure |  | 40.8% | 108 |
| Total Responses | | | 265 |



Does having a security included (or about to be included) in a major benchmark index influence your willingness to trade it?

| Response | Chart | Percentage | Count |
|------------------------|---|------------|------------|
| Yes |  | 48.1% | 128 |
| No |  | 42.5% | 113 |
| Not sure |  | 9.4% | 25 |
| Total Responses | | | 266 |

Does a security's price in the benchmark index influence your willingness or ability to trade it?

| Response | Chart | Percentage | Count |
|------------------------|---|------------|------------|
| Yes |  | 40.2% | 107 |
| No |  | 50.4% | 134 |
| Not sure |  | 9.4% | 25 |
| Total Responses | | | 266 |

Over the last two years, have you changed your execution strategy for trading Canadian federal government bonds in response to changes in market liquidity?

| Response | Chart | Percentage | Count |
|------------------------|--|------------|------------|
| Yes |  | 38.3% | 110 |
| No |  | 61.7% | 177 |
| Total Responses | | | 287 |

How have you changed your execution strategy for trading Canadian federal government bonds? Please select all that apply.


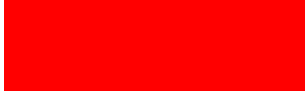
| Response | Chart | Percentage | Count |
|---|-------|------------|-------|
| Allow more time to execute the same trade | | 52.2% | 59 |
| Accept higher transaction costs | | 36.3% | 41 |
| Divide large orders into multiple smaller trades | | 52.2% | 59 |
| Transact less | | 54.0% | 61 |
| Transact more | | 8.8% | 10 |
| Reduce the amount of relative value trading | | 51.3% | 58 |
| Increase the amount of relative value trading | | 7.1% | 8 |
| Adjust timing of trades (when pre-trade price transparency is higher) | | 23.9% | 27 |
| Avoid trading during volatile periods | | 34.5% | 39 |
| Increase allocation to benchmark or more liquid bonds | | 41.6% | 47 |
| Increase use of bond futures | | 33.6% | 38 |
| Decrease use of bond futures | | 1.8% | 2 |
| Trading more “proxy” assets such as US Treasuries or US bond futures | | 23.9% | 27 |
| Trading less “proxy” assets such as US Treasuries or US bond futures | | 4.4% | 5 |
| Other change | | 10.6% | 12 |

Total Responses

113

Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

Over the last two years, have you changed your execution strategy for trading Canadian Mortgage Bonds and/or Provincial government bonds?

| Response | Chart | Percentage | Count |
|------------------------|---|------------|------------|
| Yes |  | 41.3% | 104 |
| No |  | 58.7% | 148 |
| Total Responses | | | 252 |

How have you changed your execution strategy for trading Canadian Mortgage Bonds and/or Provincial government bonds? Please select all that apply.



| Response | Chart | Percentage | Count |
|---|-------|------------------------|------------|
| Allow more time to execute the same trade | | 58.3% | 60 |
| Accept higher transaction costs | | 35.9% | 37 |
| Divide large orders into multiple smaller trades | | 46.6% | 48 |
| Transact less | | 65.0% | 67 |
| Transact more | | 4.9% | 5 |
| Reduce the amount of relative value trading | | 41.7% | 43 |
| Increase the amount of relative value trading | | 4.9% | 5 |
| Adjust timing of trades (when pre-trade price transparency is higher) | | 23.3% | 24 |
| Avoid trading during volatile periods | | 38.8% | 40 |
| Increase allocation to benchmark or more liquid bonds | | 44.7% | 46 |
| Other change | | 15.5% | 16 |
| | | Total Responses | 103 |

Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.





Corporate Bond Questions

Do you trade Canadian corporate bonds?

| Response | Chart | Percentage | Count |
|------------------------|--|------------|------------|
| Yes |  | 61.5% | 160 |
| No |  | 38.5% | 100 |
| Total Responses | | | 260 |

Over the last two years, have you changed your execution strategy for trading Canadian dollar investment grade corporate bonds?


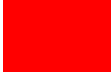



| Response | Chart | Percentage | Count |
|-----------------|--|------------|-------|
| Yes |  | 73.4% | 116 |
| No |  | 26.6% | 42 |
| Total Responses | | | 158 |

How have you changed your execution strategy for trading Canadian dollar investment grade corporate bonds? Please select all that apply.

| Response | Chart | Percentage | Count |
|--|-------|------------------------|------------|
| Allow more time to execute the same trade | | 76.7% | 89 |
| Accept higher transaction costs | | 49.1% | 57 |
| Divide large orders into multiple smaller trades or trade in smaller amounts | | 49.1% | 57 |
| Demand higher liquidity premium (i.e. spread) | | 57.8% | 67 |
| Transact less | | 67.2% | 78 |
| Transact more | | 4.3% | 5 |
| Reduce the amount of relative value trading | | 48.3% | 56 |
| Increase the amount of relative value trading | | 7.8% | 9 |
| Adjust timing of trades (when pre-trade price transparency is higher) | | 24.1% | 28 |
| Avoid trading during volatile periods | | 47.4% | 55 |
| Increase allocation to more liquid bonds | | 56.9% | 66 |
| Reduce the number of credits that you trade | | 24.1% | 28 |
| Trade proxies in other asset classes | | 12.9% | 15 |
| Increase use of credit derivatives | | 14.7% | 17 |
| Increase use of bond ETFs | | 7.8% | 9 |
| Other change | | 16.4% | 19 |
| | | Total Responses | 116 |

Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

Approximately what percentage of your current corporate bond trading is done on an agency basis?

| Response | Chart | Percentage | Count |
|------------|---|------------------------|------------|
| 0 to 24% |  | 39.0% | 62 |
| 25 to 49% |  | 20.1% | 32 |
| 50 to 74% |  | 14.5% | 23 |
| 75 to 100% |  | 14.5% | 23 |
| Not sure |  | 11.9% | 19 |
| | | Total Responses | 159 |

How has your share of corporate bond trading done on an agency basis changed in the last two years?

| Response | Chart | Percentage | Count |
|-------------------------|-------|------------------------|------------|
| Declined significantly | | 0.6% | 1 |
| Declined somewhat | | 5.1% | 8 |
| Relatively unchanged | | 27.2% | 43 |
| Increased somewhat | | 33.5% | 53 |
| Increased significantly | | 24.7% | 39 |
| Not sure | | 8.9% | 14 |
| | | Total Responses | 158 |



What do you think are the main drivers of differences in dealers' corporate bond market making capacity?

| | Not important | Somewhat important | Important | Very important | Not sure | Total Responses |
|---|---------------|--------------------|-----------|----------------|----------|-----------------|
| Regulatory changes | 0.0% | 6.3% | 20.9% | 71.5% | 1.3% | 158 |
| Balance sheet changes | 1.3% | 3.8% | 19.0% | 74.7% | 1.3% | 158 |
| Internal risk management changes | 1.3% | 16.0% | 31.4% | 46.8% | 4.5% | 156 |
| Underlying profitability changes | 5.8% | 23.4% | 29.2% | 34.4% | 7.1% | 154 |
| Increase in market volatility | 13.5% | 21.9% | 31.0% | 28.4% | 5.2% | 155 |
| Other | 6.7% | 0.0% | 3.3% | 6.7% | 83.3% | 30 |




In general for each of the following Canadian dollar corporate bond asset types, what is the largest trade size you are comfortable attempting without potentially impacting market pricing?

| | Less than C\$2MM | C\$2-4MM | C\$5-9MM | C\$10-19MM | C\$20MM or more | Not sure | Total Responses |
|---|------------------|----------|----------|------------|-----------------|----------|-----------------|
| Bank deposit notes - Recently issued | 0.6% | 2.6% | 12.8% | 35.3% | 37.8% | 10.9% | 156 |
| Bank deposit notes - Seasoned | 1.3% | 7.1% | 26.5% | 35.5% | 18.1% | 11.6% | 155 |
| Bank NVCC sub-debt | 3.9% | 15.5% | 32.9% | 16.1% | 1.3% | 30.3% | 155 |
| Non-financial corporates - Recently issued | 2.5% | 21.0% | 45.9% | 19.7% | 1.3% | 9.6% | 157 |
| Non-financial corporates - Seasoned | 10.3% | 36.1% | 36.1% | 5.8% | 1.3% | 10.3% | 155 |
| Maple bonds | 14.7% | 34.0% | 20.5% | 4.5% | 1.3% | 25.0% | 156 |
| High yield corporate bonds | 41.7% | 13.9% | 2.0% | 0.7% | 0.0% | 41.7% | 151 |
| Asset-backed securities | 7.8% | 17.6% | 30.1% | 8.5% | 0.0% | 35.9% | 153 |

In the past two years have you ever been unsuccessful in executing a Canadian dollar investment grade corporate bond trade within a reasonable (or expected) period of time?

| Response | Chart | Percentage | Count |
|------------------------|--|------------|------------|
| Yes |  | 67.5% | 104 |
| No |  | 32.5% | 50 |
| Total Responses | | | 154 |

Is the frequency at which this is happening increasing?






| Response | Chart | Percentage | Count |
|------------------------|--|------------|------------|
| Yes |  | 84.9% | 90 |
| No |  | 11.3% | 12 |
| Not sure |  | 3.8% | 4 |
| Total Responses | | | 106 |

What were the primary reasons for being unable to execute a Canadian dollar investment grade corporate bond trade within a reasonable period of time? Please select all that apply.

| Response | Chart | Percentage | Count |
|---|-------|------------|------------|
| Could not get a bid at all | | 69.2% | 72 |
| Could not get an offer at all | | 47.1% | 49 |
| Bid or offer price was too unattractive | | 89.4% | 93 |
| Expected time to execute the trade was too long | | 31.7% | 33 |
| Did not want to do a trade on an agency basis | | 25.0% | 26 |
| General market volatility was too high | | 20.2% | 21 |
| Other | | 5.8% | 6 |
| Total Responses | | | 104 |

Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

Approximately what percentage of your total corporate bond trading volume is associated with primary market issuance, either purchases or out-trades?

| Response | Chart | Percentage | Count |
|------------|---|------------------------|------------|
| 0 to 24% |  | 38.2% | 60 |
| 25 to 49% |  | 37.6% | 59 |
| 50 to 74% |  | 18.5% | 29 |
| 75 to 100% |  | 2.5% | 4 |
| Not sure |  | 3.2% | 5 |
| | | Total Responses | 157 |



Please rate the impact of the following factors for improving liquidity in the Canadian corporate bond market?

| | Significantly improve liquidity | Somewhat improve liquidity | No impact on liquidity | Somewhat reduce liquidity | Significantly reduce liquidity | Not sure | Total Responses |
|---|---------------------------------|----------------------------|------------------------|---------------------------|--------------------------------|----------|-----------------|
| Better pre-trade transparency | 15.8% | 49.4% | 17.1% | 3.8% | 5.7% | 8.2% | 158 |
| Better post-trade transparency | 14.0% | 40.8% | 16.6% | 9.6% | 12.7% | 6.4% | 157 |
| Access to electronic RFQ trading platforms | 11.4% | 44.9% | 25.3% | 5.1% | 4.4% | 8.9% | 158 |
| Access to all-to-all trading platforms (e.g. platforms with both buy and sell side) | 22.2% | 46.2% | 12.0% | 4.4% | 4.4% | 10.8% | 158 |
| Standardized corporate bond issues | 11.4% | 45.6% | 26.6% | 1.3% | 1.3% | 13.9% | 158 |
| Larger benchmarks | 15.2% | 59.5% | 18.4% | 0.6% | 0.0% | 6.3% | 158 |
| Easier securities financing | 12.7% | 36.0% | 18.7% | 0.0% | 0.0% | 32.7% | 150 |
| Other | 16.1% | 9.7% | 0.0% | 0.0% | 3.2% | 71.0% | 31 |



Market Access & Trade Execution Questions

Do you use any electronic trading platforms to trade Canadian dollar fixed income products?

| Response | Chart | Percentage | Count |
|-----------------|--|------------|-------|
| Yes |  | 68.8% | 201 |
| No |  | 31.2% | 91 |
| Total Responses | | | 292 |

Which electronic trading platforms do you use for trading Canadian dollar fixed income products? Please select all that apply.

| Response | Chart | Percentage | Count |
|--|-------|------------|------------|
| Bloomberg FIT | | 43.3% | 87 |
| BrokerTec | | 7.0% | 14 |
| CanDeal | | 82.6% | 166 |
| CBID | | 18.9% | 38 |
| Freedom eSpeed | | 13.9% | 28 |
| Electronic futures execution platforms | | 20.4% | 41 |
| Shorcan HTX | | 13.9% | 28 |
| Tullet Prebon PT Electronic Trader | | 10.9% | 22 |
| Other | | 9.0% | 18 |
| Total Responses | | | 201 |

(1) Results summarize the personal opinions expressed by survey respondents and do not represent market share.

(2) Percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

Please specify for which Canadian dollar fixed income asset class you use electronic trading platforms to initiate at least some or all trades? Select all that apply.

| Response | Chart | Percentage | Count |
|---------------------------------|-------|------------------------|------------|
| Government of Canada securities | | 93.5% | 188 |
| Canada Mortgage bonds (CMB) | | 63.2% | 127 |
| Provincial bonds | | 72.1% | 145 |
| Corporate bonds | | 18.9% | 38 |
| Repo markets | | 2.0% | 4 |
| Money markets instruments | | 37.3% | 75 |
| Bond/BAX futures | | 25.4% | 51 |
| Interest rate swaps | | 9.5% | 19 |
| | | Total Responses | 201 |

Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

Approximately what percentage of your total Canadian dollar trading volume is executed electronically?

| | 0 to 24% | 25 to 49% | 50 to 74% | 75 to 100% | Not sure | Total Responses |
|--|----------|-----------|-----------|------------|----------|-----------------|
| Government of Canada securities | 20.0% | 13.3% | 21.5% | 43.1% | 2.1% | 195 |
| Canada Mortgage Bonds (CMB) | 23.6% | 15.8% | 14.5% | 35.2% | 10.9% | 165 |
| Provincial bonds | 35.3% | 13.3% | 17.3% | 24.3% | 9.8% | 173 |
| Corporate bonds | 71.0% | 3.4% | 1.4% | 4.1% | 20.0% | 145 |
| Repo markets | 48.1% | 0.0% | 0.0% | 0.0% | 51.9% | 108 |
| Money markets instruments | 29.4% | 12.6% | 8.4% | 21.7% | 28.0% | 143 |
| Bond/BAX futures | 30.5% | 2.3% | 4.6% | 32.1% | 30.5% | 131 |
| Interest rate swaps | 54.7% | 0.9% | 0.9% | 5.1% | 38.5% | 117 |

How does liquidity on electronic trading platforms compare to traditional non-platform trading for the following Canadian dollar fixed income asset classes?




| | Worse on electronic platform | About the same | Better on electronic platform | Not sure | Total Responses |
|--|------------------------------|----------------|-------------------------------|----------|-----------------|
| Government of Canada securities | 10.4% | 43.8% | 39.9% | 6.0% | 183 |
| Canada Mortgage bonds (CMB) | 9.5% | 49.4% | 31.4% | 9.5% | 146 |
| Provincial bonds | 23.7% | 44.1% | 23.7% | 8.5% | 152 |
| Repo markets | 17.1% | 14.4% | 5.8% | 63.0% | 35 |
| Money markets instruments | 10.8% | 38.7% | 30.2% | 20.5% | 93 |
| Bond/BAX futures | 2.9% | 30.5% | 33.4% | 33.4% | 69 |
| Interest rate swaps | 35.9% | 18.7% | 3.7% | 41.4% | 53 |

Do you use any algorithmic strategies (including automatic responses to RFQ activity) for any of the following asset classes? Please select all that apply.






| Response | Chart | Percentage | Count |
|---------------------------------|-------|------------------------|-----------|
| Government of Canada securities | | 33.3% | 9 |
| Canada Mortgage bonds (CMB) | | 22.2% | 6 |
| Provincial bonds | | 14.8% | 4 |
| Corporate bonds | | 3.7% | 1 |
| Bond/BAX futures | | 59.3% | 16 |
| | | Total Responses | 27 |

Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

In your opinion would access to an all-to-all trading platform (as opposed to dealer-to-dealer or client-to-dealer platforms) for trading Canadian dollar fixed income instruments improve market liquidity?

| Response | Chart | Percentage | Count |
|----------|---|------------------------|------------|
| Yes |  | 43.9% | 127 |
| No |  | 24.6% | 71 |
| Not sure |  | 31.5% | 91 |
| | | Total Responses | 289 |

If available, would you use any form of Direct Market Access for the following Canadian dollar fixed income products? Please select all that apply.

| Response | Chart | Percentage | Count |
|---------------------------------|--|------------------------|------------|
| Government of Canada securities |  | 85.7% | 191 |
| Canada Mortgage Bonds (CMB) |  | 52.0% | 116 |
| Provincial bonds |  | 66.4% | 148 |
| Corporate bonds |  | 53.4% | 119 |
| Repo markets |  | 22.9% | 51 |
| | | Total Responses | 223 |

Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

Please rate the following characteristics of an electronic trading platform that are important to you when considering whether to use one.

| | Not important | Slightly important | Important | Very important | Not sure | Total Responses |
|--|---------------|--------------------|-----------|----------------|----------|-----------------|
| Direct market access | 6.3% | 11.8% | 41.7% | 31.0% | 9.2% | 271 |
| Ability for straight-through processing | 7.9% | 14.8% | 38.3% | 33.6% | 5.4% | 277 |
| Request-for-quote trading protocol | 8.9% | 14.8% | 42.6% | 23.0% | 10.7% | 270 |
| Limit-order book trading protocol | 21.4% | 23.2% | 29.2% | 6.6% | 19.6% | 271 |
| Ability to use dark order types such as indications of interest | 27.8% | 24.1% | 20.0% | 7.0% | 21.1% | 270 |
| Pre-trade anonymity | 14.3% | 15.0% | 30.8% | 32.6% | 7.3% | 273 |
| Post-trade anonymity | 14.9% | 17.1% | 31.3% | 29.5% | 7.3% | 275 |
| Pre-trade transparency (an anonymous public record of current offers to trade) | 13.8% | 18.5% | 31.6% | 27.6% | 8.4% | 275 |
| Post-trade transparency (an anonymous public record of executed trades with quantities and prices) | 14.5% | 20.7% | 30.5% | 25.5% | 8.7% | 275 |
| Trade clearing by a central counterparty | 20.9% | 19.4% | 31.1% | 19.0% | 9.5% | 273 |
| Impact on current counterparty relationships | 8.2% | 18.7% | 34.3% | 26.1% | 12.7% | 268 |



Market Transparency Questions

How would you rate currently available pre-trade transparency for each of the following Canadian dollar fixed income asset classes?

| | Very poor | Poor | Average | Good | Very good | Not sure | Total Responses |
|--|-----------|-------|---------|-------|-----------|----------|-----------------|
| Government of Canada securities | 0.4% | 7.3% | 18.8% | 38.0% | 32.1% | 3.3% | 271 |
| Canada Mortgage bonds (CMB) | 1.8% | 9.2% | 24.4% | 40.7% | 17.0% | 6.9% | 229 |
| NHA-MBS | 7.2% | 27.6% | 23.9% | 10.2% | 2.4% | 28.8% | 167 |
| Provincial bonds | 0.8% | 11.5% | 38.3% | 31.5% | 11.0% | 6.8% | 235 |
| Corporate bonds | 8.7% | 36.8% | 30.7% | 11.5% | 1.4% | 10.9% | 209 |
| Repo markets | 7.1% | 11.1% | 21.6% | 16.9% | 7.1% | 35.9% | 125 |
| Money markets instruments | 0.5% | 7.8% | 27.9% | 29.5% | 21.2% | 13.0% | 193 |
| Bond/BAX futures | 0.0% | 5.1% | 12.2% | 27.1% | 32.9% | 22.6% | 155 |
| Interest rate swaps | 4.2% | 22.4% | 23.1% | 19.1% | 3.5% | 27.4% | 142 |

How has the quality of pre-trade transparency changed over the past two years for each of the following Canadian dollar fixed income asset classes?

| | Declined significantly | Declined somewhat | Largely unchanged | Increased somewhat | Increased significantly | Not sure | Total Responses |
|--|------------------------|-------------------|-------------------|--------------------|-------------------------|----------|-----------------|
| Government of Canada securities | 1.1% | 16.0% | 63.6% | 6.3% | 0.7% | 12.3% | 269 |
| Canada Mortgage bonds (CMB) | 3.0% | 21.7% | 55.7% | 5.1% | 0.5% | 14.0% | 235 |
| NHA-MBS | 4.5% | 20.1% | 30.2% | 7.9% | 0.0% | 37.5% | 179 |
| Provincial bonds | 2.1% | 33.0% | 43.8% | 5.4% | 0.4% | 15.4% | 240 |
| Corporate bonds | 13.9% | 34.4% | 26.5% | 5.6% | 0.0% | 19.5% | 215 |
| Repo markets | 1.4% | 13.2% | 32.4% | 4.3% | 0.0% | 48.5% | 136 |
| Money markets instruments | 0.0% | 16.9% | 52.6% | 5.3% | 0.5% | 24.8% | 190 |
| Bond/BAX futures | 0.0% | 8.5% | 50.0% | 6.1% | 0.0% | 35.4% | 164 |
| Interest rate swaps | 4.1% | 21.0% | 31.9% | 4.1% | 0.0% | 39.2% | 148 |


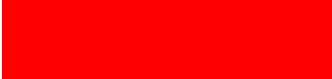
What forms of pre-trade transparency do you use for each of the following Canadian dollar fixed income asset classes? Please select all that apply.

| | Can-deal | Bloomberg | Reuters | Call to a dealer | CanPX | Dealer Trading platform | Other | Total Responses |
|--|----------|-----------|---------|------------------|-------|-------------------------|-------|-----------------|
| Government of Canada securities | 57.3% | 77.8% | 7.6% | 57.6% | 16.8% | 17.5% | 4.2% | 262 |
| Canada Mortgage bonds (CMB) | 54.8% | 72.3% | 3.4% | 59.2% | 13.1% | 16.0% | 5.3% | 206 |
| NHA-MBS | 8.4% | 46.3% | 1.0% | 73.6% | 3.2% | 12.6% | 6.4% | 95 |
| Provincial bonds | 53.7% | 67.4% | 2.3% | 64.7% | 14.7% | 15.6% | 5.9% | 218 |
| Corporate bonds | 7.6% | 68.8% | 1.7% | 79.8% | 11.0% | 16.4% | 9.9% | 183 |
| Repo markets | 1.2% | 26.6% | 3.9% | 79.7% | 1.2% | 14.0% | 5.1% | 79 |
| Money markets instruments | 42.0% | 42.0% | 9.1% | 68.4% | 7.0% | 10.3% | 4.5% | 155 |
| Bond/BAX futures | 1.8% | 63.3% | 4.8% | 33.0% | 0.0% | 20.9% | 11.2% | 106 |
| Interest rate swaps | 13.8% | 68.4% | 8.9% | 71.3% | 0.0% | 8.9% | 8.0% | 101 |





(1) Results summarize the personal opinions expressed by survey respondents and do not represent market share.

(2) Percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

Over the past two years have you taken any steps to improve your pre-trade transparency?

| Response | Chart | Percentage | Count |
|-----------------|--|------------|-------|
| Yes |  | 36.8% | 106 |
| No |  | 63.2% | 182 |
| Total Responses | | | 288 |

What steps have you taken? Please select all that apply.

| Response | Chart | Percentage | Count |
|--|--|------------------------|------------|
| Subscribed to market data services |  | 42.5% | 45 |
| Expanded use of electronic trading platforms |  | 61.3% | 65 |
| Changed pre-trade execution protocols |  | 32.1% | 34 |
| Other |  | 12.3% | 13 |
| | | Total Responses | 106 |

Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

How would you rate currently available post-trade transparency for the following Canadian dollar fixed income asset classes?

| | Very poor | Poor | Average | Good | Very good | Not sure | Total Responses |
|--|-----------|-------|---------|-------|-----------|----------|-----------------|
| Government of Canada securities | 1.2% | 16.2% | 29.8% | 29.1% | 15.5% | 8.3% | 265 |
| Canada Mortgage bonds (CMB) | 1.8% | 19.6% | 29.6% | 28.8% | 9.6% | 10.5% | 219 |
| NHA-MBS | 8.5% | 24.7% | 29.4% | 7.2% | 0.7% | 29.4% | 153 |
| Provincial bonds | 2.1% | 21.0% | 39.0% | 20.6% | 7.5% | 9.6% | 228 |
| Corporate bonds | 9.9% | 37.8% | 27.4% | 9.9% | 2.0% | 13.0% | 201 |
| Repo markets | 8.3% | 15.7% | 21.9% | 14.8% | 3.6% | 35.8% | 109 |
| Money markets instruments | 2.3% | 16.4% | 33.9% | 18.1% | 9.6% | 19.8% | 177 |
| Bond/BAX futures | 1.4% | 2.9% | 20.9% | 32.9% | 20.9% | 20.9% | 143 |
| Interest rate swaps | 6.2% | 21.6% | 25.3% | 20.1% | 3.1% | 23.9% | 130 |

How has the quality of post-trade transparency changed over the past two years for the following Canadian dollar fixed income asset classes?

| | Declined significantly | Declined somewhat | Largely unchanged | Increased somewhat | Increased significantly | Not sure | Total Responses |
|--|------------------------|-------------------|-------------------|--------------------|-------------------------|----------|-----------------|
| Government of Canada securities | 0.0% | 9.2% | 67.3% | 7.3% | 0.0% | 16.1% | 260 |
| Canada Mortgage bonds (CMB) | 0.5% | 14.3% | 61.1% | 6.7% | 0.0% | 17.3% | 224 |
| NHA-MBS | 2.6% | 16.2% | 42.8% | 5.6% | 0.0% | 32.9% | 161 |
| Provincial bonds | 1.3% | 20.6% | 53.6% | 7.2% | 0.0% | 17.5% | 224 |
| Corporate bonds | 8.8% | 25.0% | 36.3% | 9.8% | 0.9% | 19.1% | 204 |
| Repo markets | 0.8% | 8.9% | 42.3% | 3.3% | 0.8% | 43.9% | 123 |
| Money markets instruments | 0.5% | 9.8% | 57.3% | 3.8% | 0.0% | 28.7% | 185 |
| Bond/BAX futures | 0.7% | 4.1% | 58.8% | 4.8% | 0.0% | 31.7% | 148 |
| Interest rate swaps | 3.7% | 14.8% | 34.5% | 9.6% | 2.2% | 35.2% | 136 |



What forms of post-trade transparency do you use for each of the following Canadian dollar fixed income asset classes? Please select all that apply.

| | Candial | Bloomberg | Reuters | TMX Fixed Income Pricing Service | Dealer reports | CanPX | Fee Based Subscription Services | Other | Total Responses |
|--|---------|-----------|---------|----------------------------------|----------------|-------|---------------------------------|-------|-----------------|
| Government of Canada securities | 46.0% | 69.3% | 6.0% | 17.9% | 37.5% | 14.4% | 3.5% | 4.3% | 235 |
| Canada Mortgage bonds (CMB) | 46.7% | 67.9% | 3.6% | 20.7% | 38.4% | 13.0% | 4.1% | 4.7% | 193 |
| NHA-MBS | 15.0% | 58.5% | 1.0% | 22.5% | 53.1% | 3.1% | 3.1% | 7.5% | 94 |
| Provincial bonds | 42.1% | 62.4% | 3.1% | 21.3% | 44.2% | 15.7% | 5.0% | 4.5% | 197 |
| Corporate bonds | 10.2% | 65.1% | 1.2% | 25.9% | 54.3% | 14.5% | 9.4% | 3.9% | 158 |
| Repo markets | 3.8% | 42.3% | 3.8% | 5.9% | 59.4% | 0.0% | 5.9% | 7.5% | 52 |
| Money markets instruments | 36.5% | 49.2% | 8.8% | 7.9% | 44.4% | 4.0% | 0.7% | 3.1% | 126 |
| Bond/BAX futures | 4.2% | 71.1% | 8.6% | 7.3% | 20.3% | 0.0% | 1.0% | 11.7% | 94 |
| Interest rate swaps | 10.4% | 69.7% | 6.9% | 1.1% | 50.0% | 0.0% | 2.4% | 4.5% | 86 |

(1) Results summarize the personal opinions expressed by survey respondents and do not represent market share.

(2) Percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

Over the past two years have you taken any steps to improve your access to post-trade transparency?


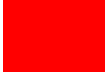

| Response | Chart | Percentage | Count |
|------------------------|--|------------|------------|
| Yes |  | 20.4% | 56 |
| No |  | 79.6% | 219 |
| Total Responses | | | 275 |

What steps have you taken? Please select all that apply.

| Response | Chart | Percentage | Count |
|--|-------|------------------------|-----------|
| Subscribed to market data services | | 60.7% | 34 |
| Expanded use of electronic trading platforms | | 58.9% | 33 |
| Changed post-trade execution protocols | | 19.6% | 11 |
| Other | | 8.9% | 5 |
| | | Total Responses | 56 |

Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

Canadian government bonds currently have a temporary exemption from the Canadian Securities Administrators' mandatory post-trade transparency requirements (NI 21-101). Do you believe the exemption is needed?

| Response | Chart | Percentage | Count |
|----------|--|------------------------|------------|
| Yes |  | 18.8% | 53 |
| No |  | 18.1% | 51 |
| Not sure |  | 63.1% | 178 |
| | | Total Responses | 282 |

Please rate the importance of the following parameters for your ability to trade Canadian dollar fixed income products?

| | Not important | Somewhat important | Important | Very important | Not sure | Total Responses |
|--|---------------|--------------------|-----------|----------------|----------|-----------------|
| Pre-trade transparency | 5.0% | 11.0% | 36.5% | 45.4% | 2.5% | 282 |
| Post-trade transparency | 14.6% | 25.6% | 40.2% | 14.9% | 5.3% | 281 |
| Electronic RFQ trading platform | 15.9% | 24.2% | 38.3% | 15.5% | 7.2% | 277 |
| Direct market access (All-to-all market trading platform) | 24.2% | 22.8% | 26.7% | 14.9% | 12.1% | 281 |
| Funding access (securities financing) | 29.6% | 14.8% | 17.4% | 19.6% | 19.3% | 270 |

Survey Glossary

Agency Trade: occurs when a dealer finds a counterparty willing to take the opposite position of a client's order.

Algorithmic Trading Strategy: a trading strategy executed by a computer autonomously.

All-to-All Trading: a trading system that allows users to offer prices and quantities to all other users.

Direct Market Access: the ability to place orders on a trading venue without the intervention of an intermediary, such as a broker.

Limit-order Book: a list of executable prices and quantities offered to buy or sell a particular security.

Liquidity: the cost-effectiveness of trading an asset with immediacy and in volume.

Liquidity Provision (or source of liquidity): a trading strategy of standing ready to buy and sell securities for others.

NI 21-101: part of the Canadian Securities Administrators' "Alternative Trading System Rules" which contain requirements for post-trade transparency.

Post-trade Transparency: the availability of information regarding prices and quantities of executed trades.

Pre-trade Transparency: the availability of information regarding prices and quantities offered before trades are executed.

Principal Trade: occurs when a dealer commits its balance sheet to match a client order.

Relative Value Trading: a trading strategy that exploits differences in price across fixed-income securities with comparable credit quality and duration.

RFQ Trading Protocol: an auction trading system in which a participant prompts a set of dealers to privately and simultaneously quote prices for a given quantity, and then choose a dealer to trade with.