



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 to be used for commercial purposes.

Survey description

- ❖ This survey has been prepared by 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

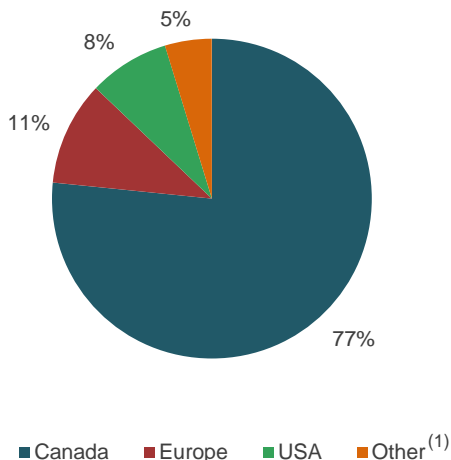
- ❖ When reviewing the results, please take into consideration the following:
 - This survey is meant to gather data on opinions and perceptions of individuals and the numbers presented are based on individual perceptions, not exact institutional figures;
 - Responses represent opinions of individual 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.

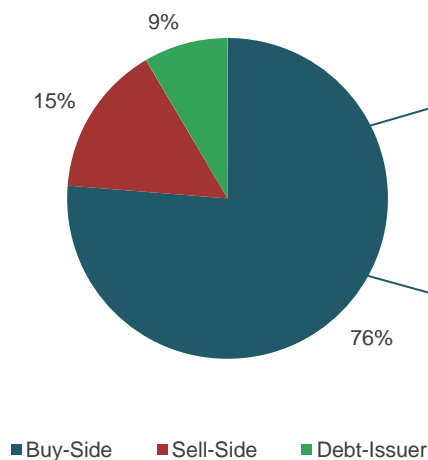
Overview of survey respondents

- ❖ The survey was completed by 295 individuals from approximately 200 firms worldwide, implying a 28% firm response rate
 - 225 buy-side respondents from ~160 firms; 45 sell-side respondents from ~20 firms; and 25 active domestic debt issuers from ~20 firms
- ❖ Approximately 77% of responses came from Canada

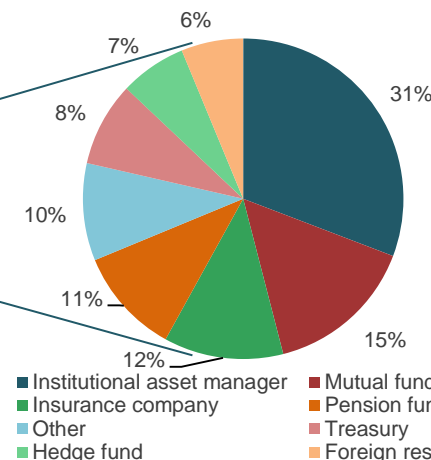
Response by Region



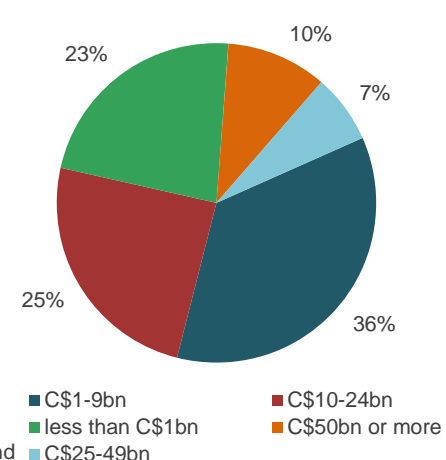
Response by Firm Type



Buy-Side by Type



Buy-Side by Size

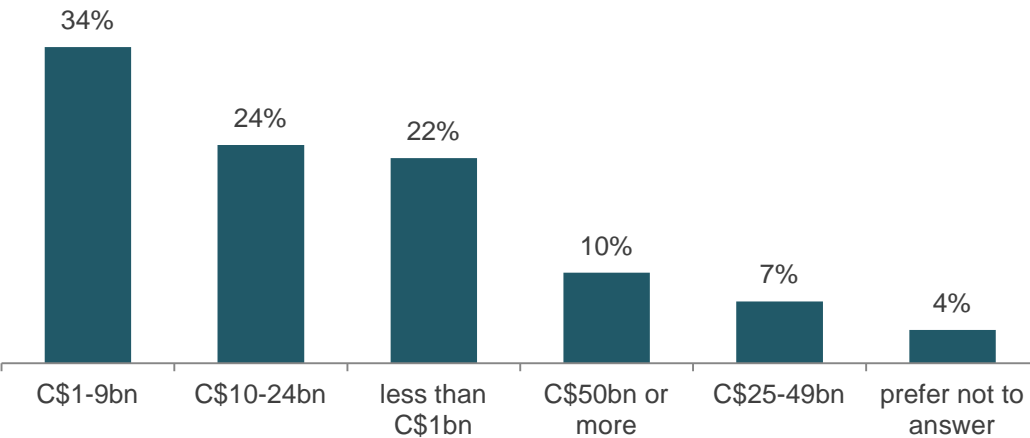


(1) Other includes Australia, Asia, and Africa

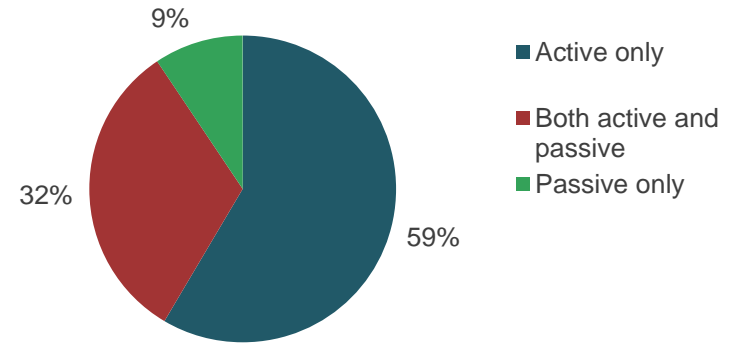
Overview of buy-side respondents

Gross Value of Canadian Dollar Fixed-Income Securities Under Management

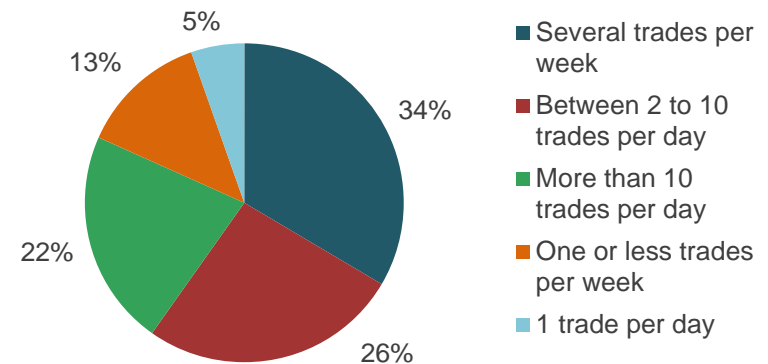
% of buy-side survey participants



Management Style of Canadian Fixed-Income Portfolio



Average Trade Frequency in Canadian Fixed-Income Market





Market Liquidity

Impression of current market liquidity

- ❖ Government of Canada benchmark bonds are generally perceived to be the most liquid (very liquid) asset class by most types of survey participants
- ❖ Perceptions of liquidity across other asset classes are more varied, depending on the type of institution, trading approach and location of the participant

Impression of Current Market Liquidity

Average Rank

	All Participants	Sellside	Buy-side	Buy-side		
				Small	Large	Frequent & Large
Government of Canada securities - Benchmark	3.72	3.44	3.75	3.79	3.86	3.93
Money markets instruments	3.37	3.17	3.35	3.26	3.42	3.27
Repo - General collateral GoC and CMB	3.30	3.55	3.31	2.50	3.43	3.67
Bond/BAX futures	3.16	3.60	3.03	3.20	3.27	3.29
Canada Mortgage bonds (CMB)	3.11	3.11	3.10	3.14	3.00	2.92
Provincial bonds	3.00	3.00	3.02	2.96	3.06	3.00
Government of Canada securities - Off-the-run	2.92	2.48	2.95	3.22	2.86	3.07
Interest rate swaps	2.92	2.69	3.00	3.13	2.79	2.60
Repo - General collateral provincial bonds	2.76	2.60	2.73	N/A	2.92	3.00
Investment grade corporate bonds - Financial	2.68	2.74	2.75	2.60	2.76	2.75
Repo - General collateral NHA MBS	2.37	1.88	2.35	N/A	2.33	2.75
Repo - Non GC (specials)	2.34	2.70	2.33	2.00	2.44	2.80
NHA-MBS	2.26	1.89	2.24	2.75	2.06	1.71
Investment grade corporate bonds - Non-financial	2.13	2.32	2.15	2.28	2.08	2.25
Repo - Non-government	1.82	1.88	1.81	N/A	1.86	2.00

1=very illiquid; 2=illiquid; 3=liquid; 4=very liquid

Please note: small represents buy-side firms with less than C\$1 billion fixed-income securities under management; Large represents buy-side firms with greater than C\$25 billion fixed-income securities under management; and Frequent and Large represents buy-side firms that trade in the Canadian dollar fixed-income market more than 10 times per day and have greater than C\$25 billion fixed-income securities under management.

Slight decline in market liquidity over two years

- ❖ Liquidity was perceived to have declined only slightly for futures and Government of Canada benchmark bonds, while it was seen to have deteriorated most for investment grade corporate bonds
 - Both large sell-side and frequent buy-side traders indicated a slightly more positive view of changes in liquidity
- ❖ Debt issuers and hedge funds indicated more significant declines in liquidity across markets than aggregate buy- and sell-side participants

Change in Liquidity Over the Past Two Years

Average Rank

	All Participants	Sellside	Buyside	Buy-side		
				Small	Large	Frequent & Large
Bond/BAX futures	2.73	3.30	2.63	2.78	2.71	2.71
Government of Canada securities - Benchmark	2.70	2.56	2.71	2.79	2.65	2.80
Money markets instruments	2.66	2.56	2.66	2.85	2.68	2.73
Repo - General collateral GoC and CMB	2.57	3.00	2.60	2.50	2.73	2.83
Repo - General collateral NHA MBS	2.47	3.25	2.63	N/A	2.71	3.00
Repo - General collateral provincial bonds	2.45	3.00	2.33	N/A	2.60	3.00
NHA-MBS	2.45	2.44	2.52	2.75	2.38	2.43
Canada Mortgage bonds (CMB)	2.44	2.39	2.44	2.63	2.19	2.08
Interest rate swaps	2.38	2.23	2.43	2.14	2.46	2.50
Repo - Non GC (specials)	2.32	2.90	2.39	2.00	2.83	3.00
Provincial bonds	2.28	2.35	2.30	2.50	2.13	2.13
Government of Canada securities - Off-the-run	2.24	1.78	2.27	2.54	2.09	2.40
Investment grade corporate bonds - Financial	2.15	2.32	2.15	2.20	2.21	2.17
Repo - Non-government	2.13	2.56	2.21	N/A	2.00	1.00
Investment grade corporate bonds - Non-financial	1.76	2.21	1.68	1.96	1.75	1.92

1=declined significantly; 3= largely unchanged; 5= increased significantly

Please note: small represents buy-side firms with less than C\$1 billion fixed-income securities under management; Large represents buy-side firms with greater than C\$25 billion fixed-income securities under management; and Frequent and Large represents buy-side firms that trade in the Canadian dollar fixed-income market more than 10 times per day and have greater than C\$25 billion fixed-income securities under management.

Key attributes of market liquidity

- ❖ The most important attribute of market liquidity is consistent across all types of market participants
 - However, sell-side participants place somewhat greater emphasis on their ability to execute without moving the market, while buy-side participants are more concerned with the amount of liquidity available on an average day

Most Important Attributes of Market Liquidity

Ranked in order of importance

1. Ability to execute at the most competitive price
2. Ability to execute in large size
3. Ability to execute with immediacy
4. Ability to execute without moving the market

Aspects of Liquidity Most Concerned About

Ranked in order of importance

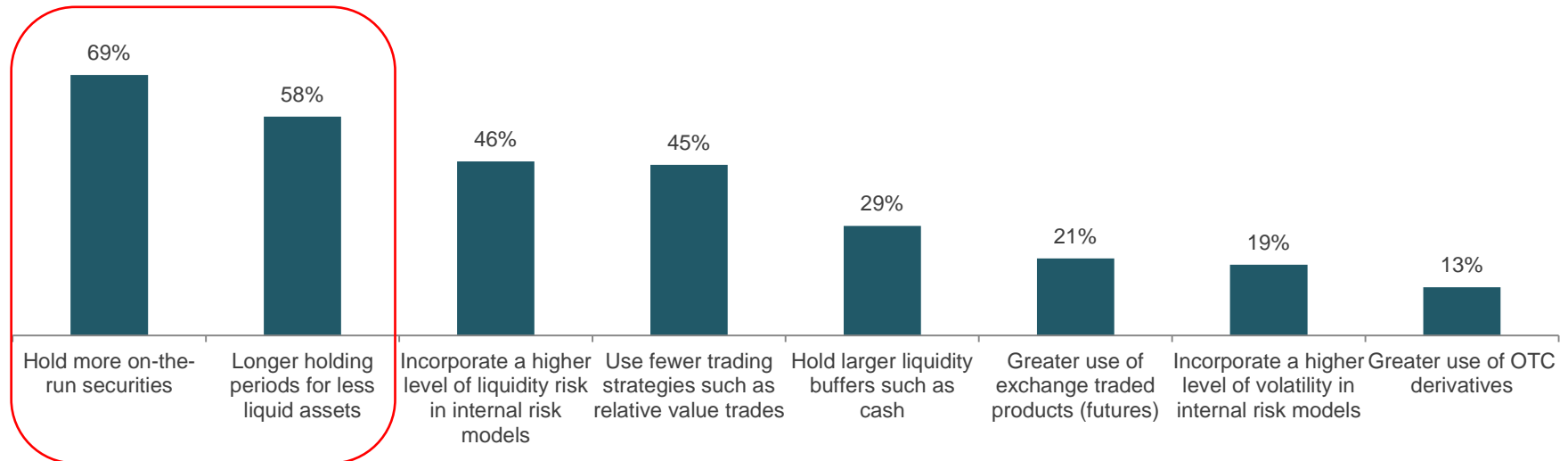
1. Amount of liquidity available during market stress
2. Increasing volatility in the amount of liquidity
3. Amount of liquidity available on an average day
4. Increasing pro-cyclicality of liquidity

Changes in portfolio management activities

- ❖ Over the last two years, over 50% of all buy-side participants noted a change in their Canadian dollar fixed-income portfolio management activities, in response to changes in market liquidity
 - Market participants are predominantly holding more on-the-run securities, and holding less liquid assets for a longer time period
 - Most market participants have altered their corporate bond trading execution strategy
- ❖ Over the same time period, buy-side participants that are small, have passive mandates, or are foreign-based were the least likely to have changed their activities

Changes in Canadian Dollar Fixed-Income Portfolio Management

% of buy-side respondents that reported a change in their portfolio management activities



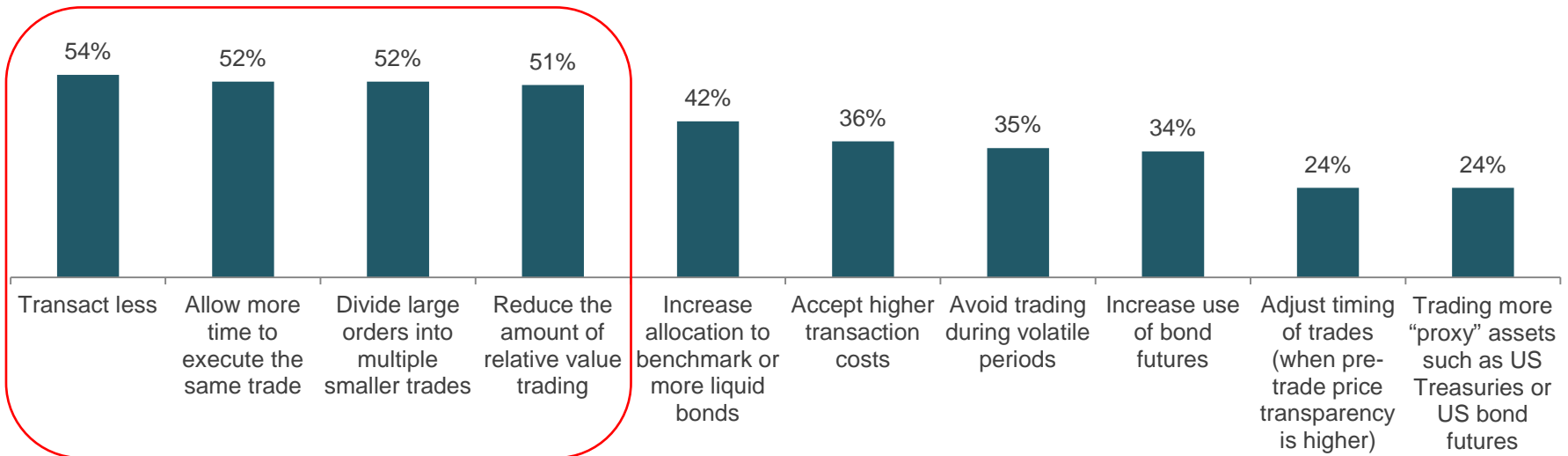
Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

Changes in Government of Canada bond trading

- ❖ Over the last two years, just under 40% of all survey participants noted a change in their Government of Canada bond execution strategy, in response to changes in market liquidity
 - Over the same time period, buy-side participants that are small, have passive mandates, or are foreign-based were the least likely to have changed their activities
- ❖ Close to 80% of sell-side participants noted a change in the Government of Canada bond execution strategy, primarily by increasing their use of bond futures or reducing their amount of relative value trading

Changes in Government of Canada Execution Strategies

% of all survey participants that reported a change in execution strategy



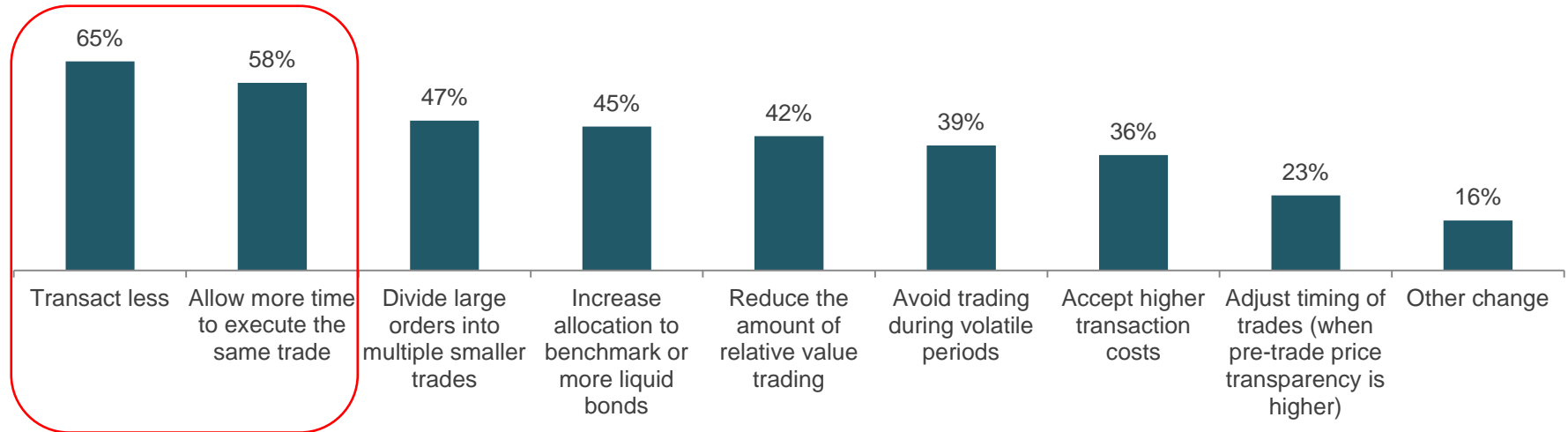
Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

Changes in CMB and provincial bond trading

- ❖ Over the last two years, just over 40% of all survey participants noted a change in their Canada Mortgage Bond and/or provincial bond execution strategy, in response to changes in market liquidity
 - Over the same time period, buy-side participants that are small, have passive mandates, or are foreign-based were the least likely to have changed their activities
- ❖ Almost 70% of sell-side participants noted a change in their execution strategy, over the last two years, which predominately included increasing their allocation to benchmark or more liquid bonds, and reducing the amount of relative value trading

Changes in CMB and/or Provincial Bonds Execution Strategies

% of all survey participants that reported a change in execution strategy



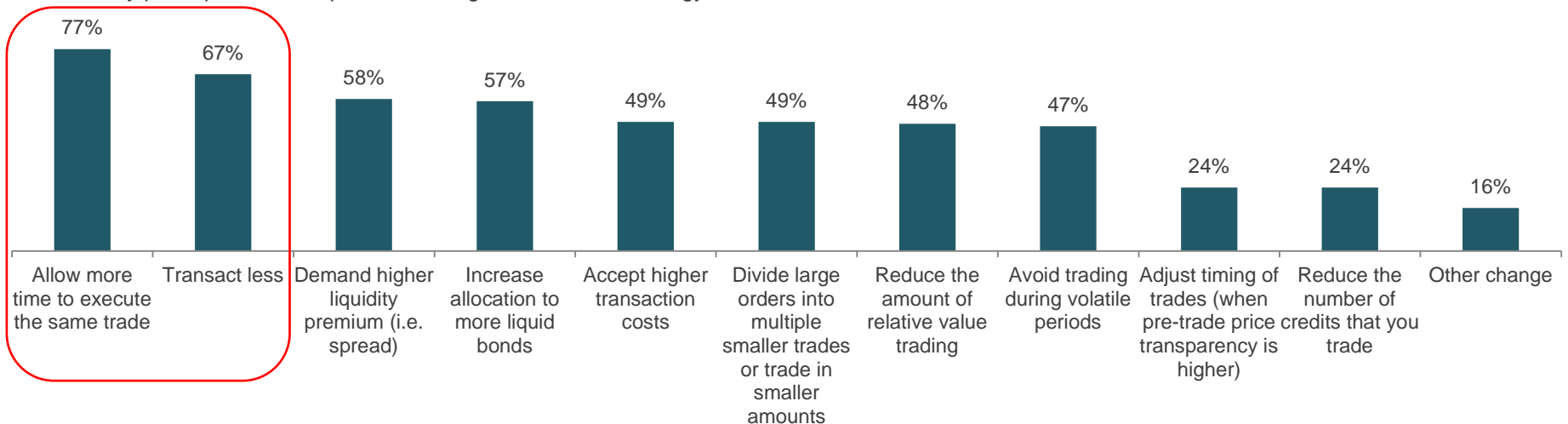
Please note that percentages do not add to 100 as respondents were able to select multiple answers. Therefore, the percentages represent the proportion of unique respondents that selected each answer.

Changes in corporate bond trading

- ❖ Over the last two years, approximately 75% of survey participants changed their Canadian dollar investment grade corporate bond execution strategy, in response to changes in market liquidity
 - In contrast to the prior two asset classes, changes were being made by all types of participants
- ❖ In the past two years, close to 70% of survey participants noted having been unsuccessful in executing a Canadian dollar investment grade corporate bond trade within a reasonable (or expected) period of time
 - 85% of participants described the frequency of this happening as increasing, with close to 90% of participants indicating unattractive market pricing as the main reason for not being able to execute a trade

Change in Canadian Dollar Investment Grade Corporate Bonds Execution Strategy

% of survey participants that reported a change in execution strategy



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.

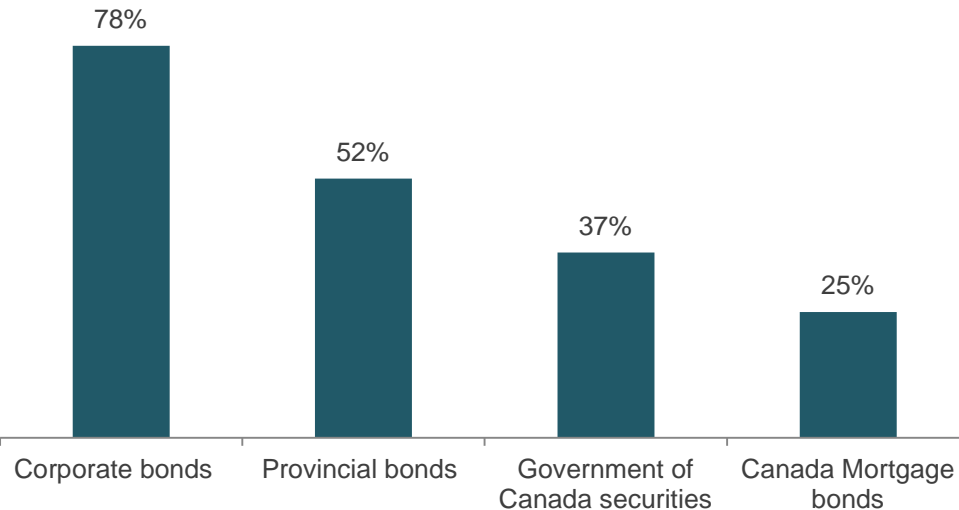


Changes in Market Participant Practices

Buy-side supporting liquidity provision

Top 4 Asset Classes used to help dealers manage their flow and inventory

% of buy-side survey participants that help dealers manage their flow and inventory



Approximately 30% of buy-side survey participants are:

- ❖ doing more short-term tactical trading to take advantage of market dislocations, especially in Government of Canada securities
 - Close to 40% of respondents that are not currently engaging in this activity were noted to be considering it in the future
- ❖ using their portfolio to help dealers better manage their flow and inventory
 - Only a small percentage of respondents that are not currently engaging in this activity were noted to be considering it in the future

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.

Slight decline in sell-side trading inventories concentrated in provincial and corporate bonds

- ❖ Responses from large sell-side firms indicated relatively unchanged inventories across all asset categories; note that these results are only reflective of changes that have occurred over the past two years

Change in Canadian Dollar Trading Inventory Over the Past Two Years

	Declined significantly	Declined meaningfully	Declined slightly	Relatively unchanged	Increased slightly	Increased meaningfully	Increased Significantly
Canadian federal government bonds, including government-guaranteed issuers	8.30%	11.10%	16.70%	44.40%	13.90%	2.80%	2.80%
Provincial government bonds, including provincially-guaranteed issuers	6.50%	16.10%	32.30%	22.60%	22.60%	0.00%	0.00%
Corporate bonds (investment grade and high yield)	0.00%	10.00%	40.00%	30.00%	16.70%	3.30%	0.00%
Repo (bonds)	4.30%	17.40%	4.30%	52.20%	8.70%	13.00%	0.00%
Money markets instruments	0.00%	10.30%	13.80%	48.30%	10.30%	13.80%	3.40%
Interest rate swaps (delta traded)	0.00%	8.30%	8.30%	58.30%	8.30%	8.30%	8.30%

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 more)

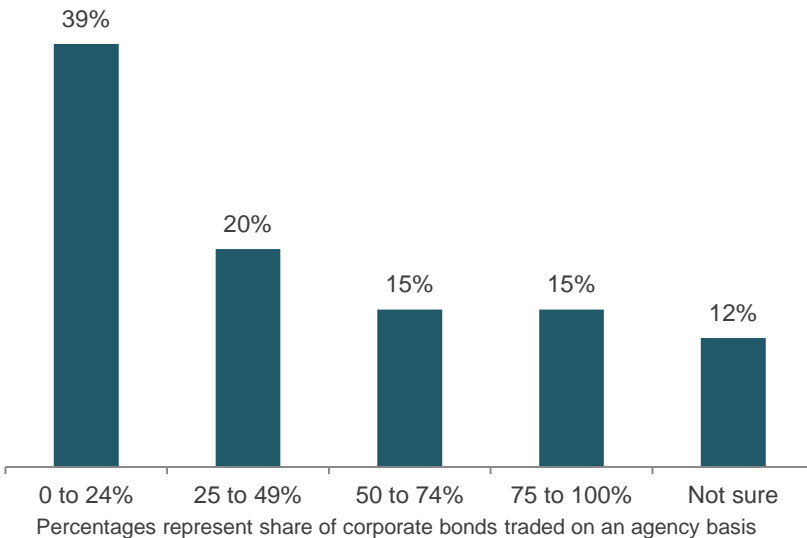
Note: figures represent % of respondents

Increasing share of corporate bond trading done on an agency basis

- ❖ Approximately 60% of survey respondents indicated either a somewhat or significant increase in their share of corporate bond trading done on an agency basis over the past two years

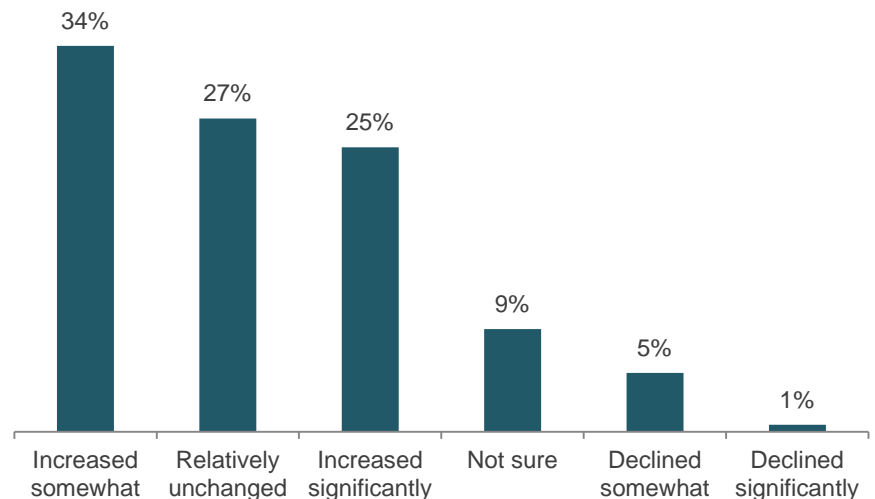
Share of Corporate Bond Trading Done on an Agency Basis

% of survey participants that trade corporate bonds



Change in Share of Corporate Bond Trading Done on an Agency Basis

% of survey participants that trade corporate bonds



Drivers of changes in corporate bond market making capacity

- ❖ Balance sheet and regulatory changes are perceived to be the main drivers of differences in dealers' corporate bond market making capacity

Main Drivers of Differences in Dealers' Corporate Bond Market Making Capacity

	Average Rank
Balance sheet changes	3.69
Regulatory changes	3.66
Internal risk management changes	3.30
Underlying profitability changes	2.99
Increase in market volatility	2.78

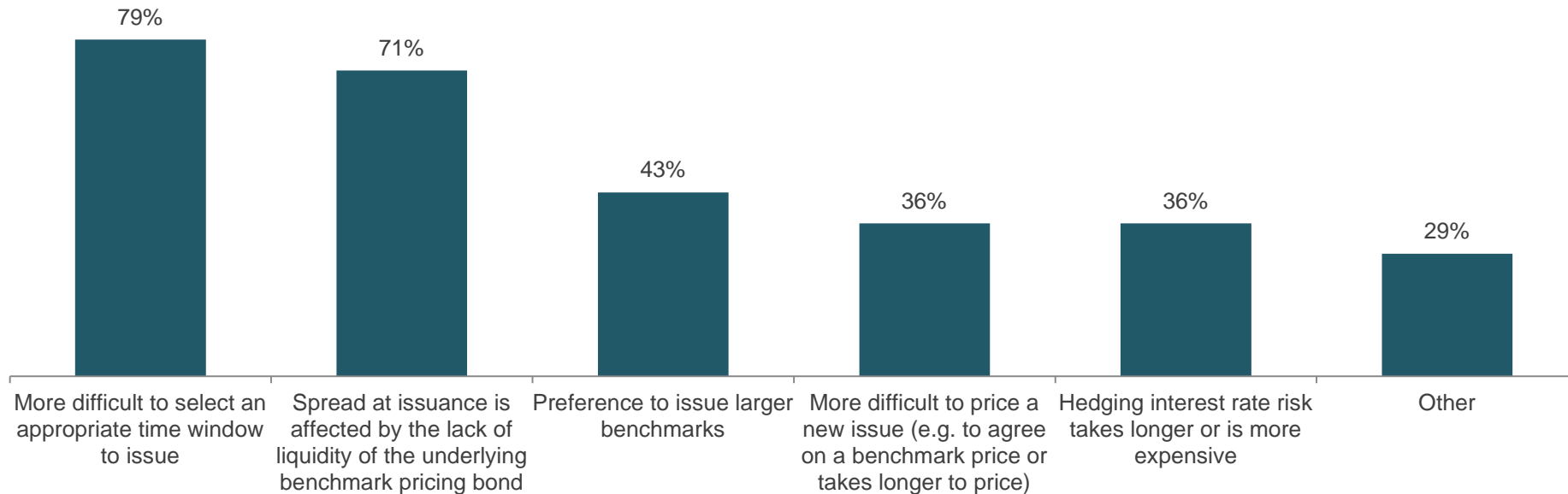
1=not important; 2=somewhat important; 3=important; 4=very important

Debt issuers are changing their issuance process

- ❖ Over 55% of debt-issuers reported a change in their ability to issue fixed income securities due to changes in the underlying liquidity of fixed income securities or changes in market structure

How Changes in Market Liquidity Have Affected the Debt Issuance Process

% of debt-issuers that reported a change in their ability to issue fixed income securities

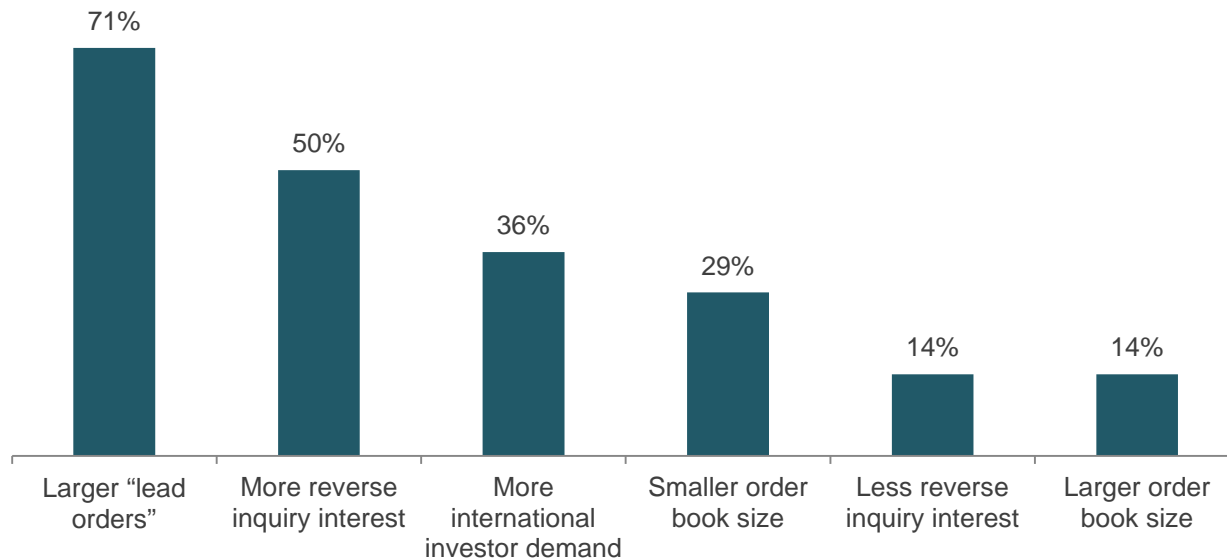


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Issuers have seen changes in demand composition

Changes in Demand Composition of New Debt Issuance

% of debt-issuers that reported a change in their ability to issue fixed income securities



- ❖ Almost 55% of debt-issuers that issue in international fixed-income markets described Canadian market access as more stable relative to that of a foreign market, taking into account difference in market size
- ❖ Debt issuers indicated that investor diversification was the primary reason for issuing in foreign markets

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 Transparency

Rating of currently available pre-trade transparency

- ❖ Level of pre-trade-transparency is perceived to be higher for more liquid asset classes, and is generally rated higher by sell-side participants
 - Larger and more active buy-side respondents rate pre-trade transparency higher than the aggregate buy-side
- ❖ Over 35% of respondents have taken steps to improve pre-trade transparency, mostly by expanding use of electronic trading platforms and subscribing to market data services

Rating of Currently Available Pre-Trade Transparency

Average Rank

	All Participants	Sellside	Buyside	Buy-side		
				Small	Large	Frequent & Large
Bond/BAX futures	4.13	4.59	4.00	4.00	4.00	4.33
Government of Canada securities	3.97	4.06	3.99	3.98	3.94	4.15
Money markets instruments	3.73	4.00	3.71	3.44	3.79	3.80
Canada Mortgage bonds (CMB)	3.67	3.96	3.67	3.68	3.52	3.67
Provincial bonds	3.43	3.71	3.43	3.25	3.43	3.45
Repo markets	3.09	3.85	2.93	2.75	2.82	3.00
Interest rate swaps	2.93	2.93	2.97	3.13	2.31	2.25
NHA-MBS	2.62	2.30	2.73	3.09	2.88	3.20
Corporate bonds	2.55	2.85	2.55	2.65	2.88	3.17

1=very poor; 2=poor; 3=average; 4=good; 5=very good

Please note: small represents buy-side firms with less than C\$1 billion fixed-income securities under management; Large represents buy-side firms with greater than C\$25 billion fixed-income securities under management; and Frequent and Large represents buy-side firms that trade in the Canadian dollar fixed-income market more than 10 times per day and have greater than C\$25 billion fixed-income securities under management.

Pre-trade transparency is relatively unchanged

❖ Overall level of pre-trade transparency has stayed largely unchanged across most asset classes

Change in Quality of Pre-Trade Transparency Over the Past Two Years

Average Rank

	All Participants	Sellside	Buyside	Buy-side		
				Small	Large	Frequent & Large
Bond/BAX futures	2.96	3.18	2.94	3.09	3.00	3.00
Government of Canada securities	2.88	2.97	2.90	3.06	2.84	2.83
Money markets instruments	2.86	2.89	2.87	3.07	2.69	2.75
Repo markets	2.77	3.23	2.65	3.33	2.89	3.00
Canada Mortgage bonds (CMB)	2.75	2.88	2.81	3.05	2.74	2.73
NHA-MBS	2.66	2.64	2.71	3.00	2.93	2.60
Provincial bonds	2.64	2.92	2.64	2.86	2.75	2.64
Interest rate swaps	2.59	2.87	2.60	2.60	2.50	2.25
Corporate bonds	2.29	2.55	2.23	2.46	2.41	2.73

1=declined significantly; 2=declined somewhat; 3=largely unchanged; 4=increased somewhat; 5=increased significantly

Please note: small represents buy-side firms with less than C\$1 billion fixed-income securities under management; Large represents buy-side firms with greater than C\$25 billion fixed-income securities under management; and Frequent and Large represents buy-side firms that trade in the Canadian dollar fixed-income market more than 10 times per day and have greater than C\$25 billion fixed-income securities under management.

Rating of currently available post-trade transparency

- ❖ Current post-trade transparency is rated lower than pre-trade transparency across most asset classes
- ❖ Sell-side survey participants have a slightly more positive perception of current post-trade transparency than other survey respondents

Rating of Currently Available Post-Trade Transparency

Average Rank

	All Participants	Sellside	Buyside	Buy-side		
				Small	Large	Frequent & Large
Bond/BAX futures	3.88	4.59	3.76	3.50	4.08	4.00
Government of Canada securities	3.45	4.06	3.40	3.28	3.44	3.55
Canada Mortgage bonds (CMB)	3.28	3.96	3.22	3.05	3.24	3.45
Money markets instruments	3.20	4.00	3.14	3.00	3.27	2.83
Provincial bonds	3.11	3.71	3.08	2.91	3.00	3.00
Interest rate swaps	2.90	2.93	2.81	2.43	2.56	2.00
Repo markets	2.84	3.85	2.61	2.25	2.50	2.00
NHA-MBS	2.53	2.30	2.48	2.30	2.55	3.00
Corporate bonds	2.50	2.85	2.38	2.41	2.56	2.75

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Post-trade transparency is largely unchanged

- ❖ Overall level of post-trade transparency has stayed largely unchanged for nearly all asset classes
- ❖ Sell-side participants have a slightly more positive view of the change in post-trade transparency than other survey respondents
- ❖ The majority of survey respondents are unsure of whether the Canadian government bond exemption (NI 21-101) for post-trade transparency is needed
 - The exemption expires in January 2018

Change in Quality of Post-Trade Transparency Over the Past Two Years

Average Rank

	All Participants	Sellside	Buyside	Buy-side		
				Small	Large	Frequent & Large
Bond/BAX futures	2.99	3.29	2.95	3.10	3.00	3.00
Government of Canada securities	2.98	3.25	2.94	3.03	3.04	3.00
Money markets instruments	2.90	3.15	2.91	3.17	2.92	2.88
Repo markets	2.90	3.40	2.73	3.25	3.00	3.00
Canada Mortgage bonds (CMB)	2.90	3.17	2.87	3.05	2.96	2.90
Interest rate swaps	2.88	4.00	2.75	3.00	2.67	2.00
Provincial bonds	2.81	3.18	2.78	3.00	2.95	2.75
NHA-MBS	2.77	3.00	2.68	3.00	3.00	2.75
Corporate bonds	2.62	3.20	2.44	2.73	2.88	2.57

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Market Access

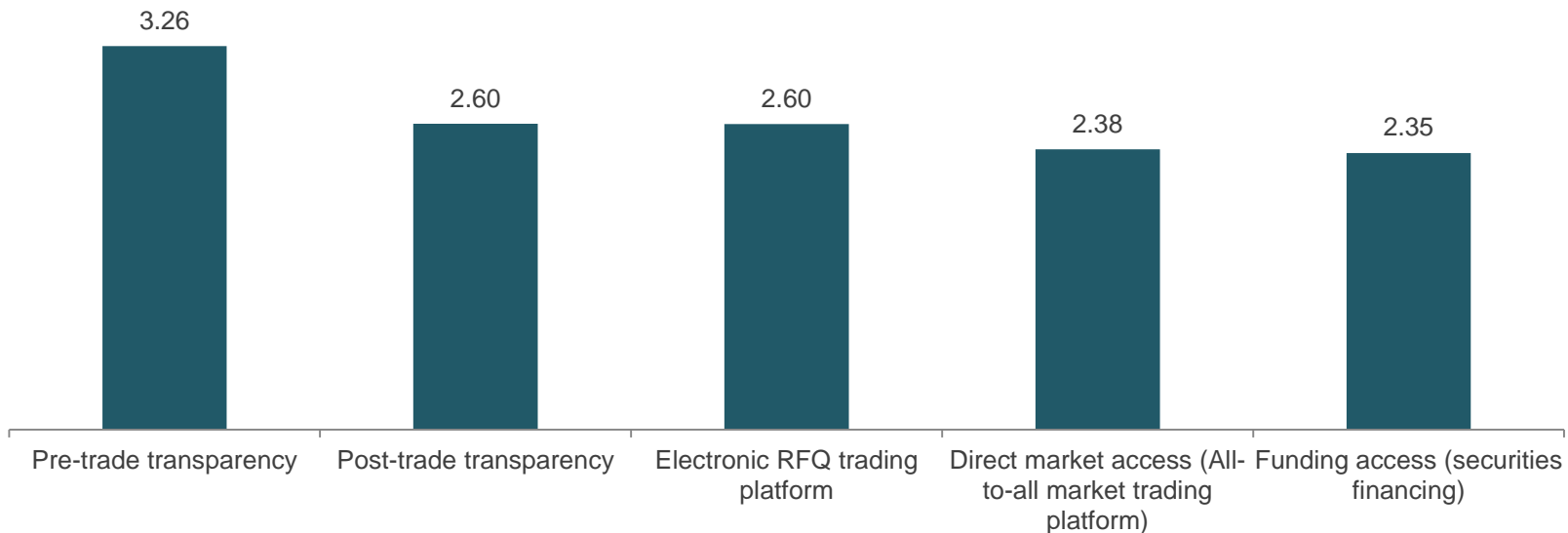
Most important market access parameters for trading

- ❖ Close to 45% of survey respondents believe 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 would improve market liquidity

Average Rank of Parameters Affecting Ability to Trade Canadian Dollar Fixed-Income Products

Average Rank

1=not important; 2=somewhat important; 3=important; 4=very important



Electronic trading is concentrated in GoC, CMB and bond futures markets

Percentage of Canadian Dollar Trading Volume Executed Electronically

	0 to 24%	25 to 49%	50 to 74%	75 to 100%	Not sure
Government of Canada securities	20.00%	13.30%	21.50%	43.10%	2.10%
Canada Mortgage Bonds (CMB)	23.60%	15.80%	14.50%	35.20%	10.90%
Provincial bonds	35.30%	13.30%	17.30%	24.30%	9.80%
Corporate bonds	71.00%	3.40%	1.40%	4.10%	20.00%
Repo markets	48.10%	0.00%	0.00%	0.00%	51.90%
Money markets instruments	29.40%	12.60%	8.40%	21.70%	28.00%
Bond/BAX futures	30.50%	2.30%	4.60%	32.10%	30.50%
Interest rate swaps	54.70%	0.90%	0.90%	5.10%	38.50%

Note: figures represent % of respondents