IIACACCVM
INVESTMENT INDUSTRY ASSOCIATION OF CANADA
ASSOCIATION CANADIENNE DU COMMERCE DES VALEURS MOBILIÈRES

Liquidity and Current Dynamics in the Canadian Fixed Income Markets

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INTRODUCTION

The purpose of this paper is to provide a quantitative assessment of liquidity in 5-year on- and off-the-run Canadian Government bonds and 5 year on-the-run Canadian provincial bonds and identify meaningful changes and trends in trading activity. Note: Subsequent updates to the paper will look to add additional data sources to broaden the study to the marketplace as a whole and examine other less liquid fixed income instruments to enhance the liquidity analysis, including thinly-traded fixed income products, such as high yield bonds. It should also be noted that the conclusions made are those of the IIAC.

While there is no single accepted definition of liquidity, liquidity is most commonly referred to as the ability of market participants to buy and sell quickly and efficiently without causing a material change in the price of the fixed income instrument in question.

There is a general perception that liquidity in the secondary fixed income market in Canada has decreased in certain sectors of the market since the financial crisis in 2008 and 2009. As mentioned, this initial paper evaluates 5-year issues in the Government of Canada and Provincial markets through electronic trading only, and it is of note that these products are among the most liquid fixed income products traded in Canada.

Most market participants will agree that ready and reasonable liquidity is necessary for a well-functioning market. While the jury is out on whether liquidity in the secondary bond market in off-the-run Canadian government and provincial bond trading has deteriorated, there is some evidence gleaned on a qualitative basis through market surveys, that liquidity in certain off-the-run sectors of the bond market and specifically smaller orphan issues has at times been noticeably less liquid than benchmark government issues, which is not all that surprising.

Another factor that must be considered is the effect of past and future regulatory changes. While these changes have, in many cases, added to the costs bond dealers bear when holding fixed income product in inventory. There is a risk that, as some liquidity providers in the Canadian marketplace react to increased cost and balance sheet pressures, they may have to exit or limit trading in certain less profitable sectors of the fixed income market.

STATISTICAL SOURCE

The charts presented in this paper were created using data provided by CanDeal. CanDeal is the leading provider of electronic markets for Canadian fixed income securities and interest rate swaps, providing institutional investors with direct access to liquidity provided by Canadian broker-dealers. The paper only uses data for the old and current Government of Canada 5-year benchmark and the 5-year Province of Ontario benchmark. As mentioned, in future updates we will endeavor to expand the set and the sources of data beyond the data set analyzed in this introductory paper.

The CanDeal data utilized represents all trades for a 5-year period from November 1, 2013 to June 30, 2019 where the buy side participants request for quotes (RFQs) resulted in executed trades. The CanDeal data presented below represents trades originating from the electronic space and represent a material portion of total trades in the identified benchmarks. The sample used in this analysis has been used to draw conclusions by the IIAC, but readers are encouraged to make their own deductions. The IIAC stresses that the presented statistics are by no means an absolute reflection of market activity and as mentioned above, in subsequent analysis the IIAC will endeavor to add additional data sources to broaden the study to the marketplace as a whole.

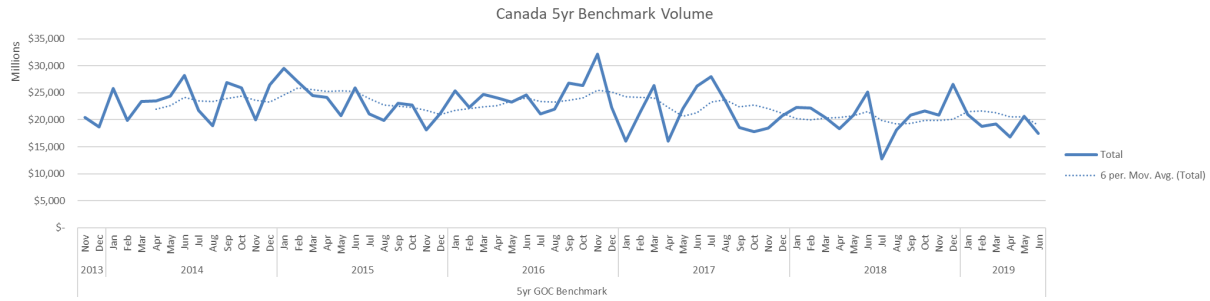
HISTORICAL REVIEW OF MARKET LIQUIDITY

TOTAL VOLUME

Charts 1, 2 and 3 display the total monthly CanDeal volume for the three identified fixed income securities - the Government of Canada 5-Year Benchmark, the Government of Canada 5-Year (Old Benchmark), and the Ontario Provincial 5 Year Bond where RFQs were received. As is outlined in Appendix 2 in greater detail, it is generally agreed that markets with high levels of trading activity are the most liquid, with sizable transactions easily entered and exited at relatively low cost.

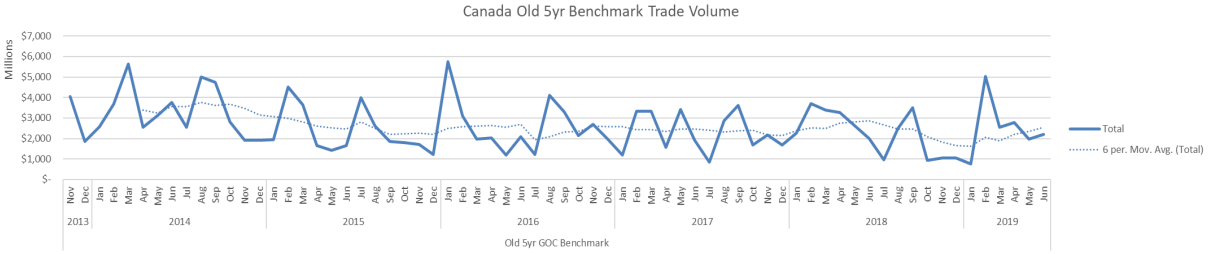
In the sample studied, overall, the average trading volume for the Government of Canada 5-Year Benchmark has declined slightly over the last five years, but trading in the less liquid Government of Canada 5-Year (Old Benchmark) and 5-Year Ontario Provincial Bond actually rose slightly. Because trading in Government of Canada benchmarks is normally significantly higher than trading in off-the-run Government of Canada and Provincial Benchmarks, the decline in trading from a monthly average of $25 billion to approximately $20 billion should be monitored to see if it reverses.

CHART 1: TOTAL VOLUME - GOVERNMENT OF CANADA 5-YEAR (BENCHMARK)



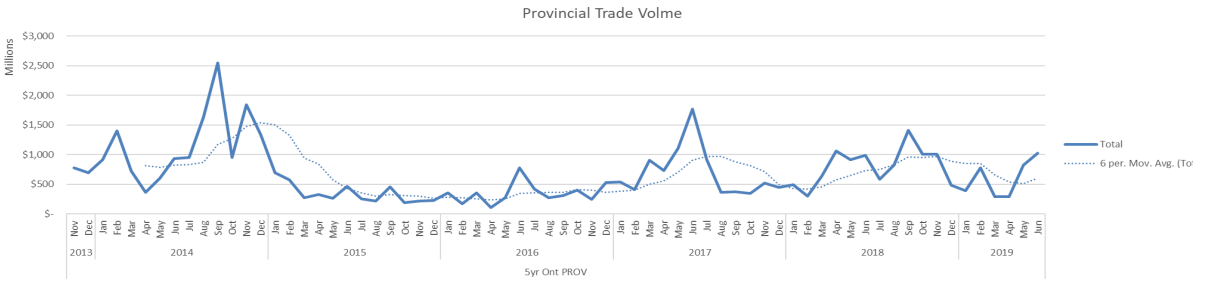
Source: CanDeal

CHART 2: TOTAL VOLUME - GOVERNMENT OF CANADA 5-YEAR (OLD BENCHMARK)



Source: CanDeal

CHART 3: TOTAL VOLUME – 5-YEAR ONTARIO PROVINCIAL BOND



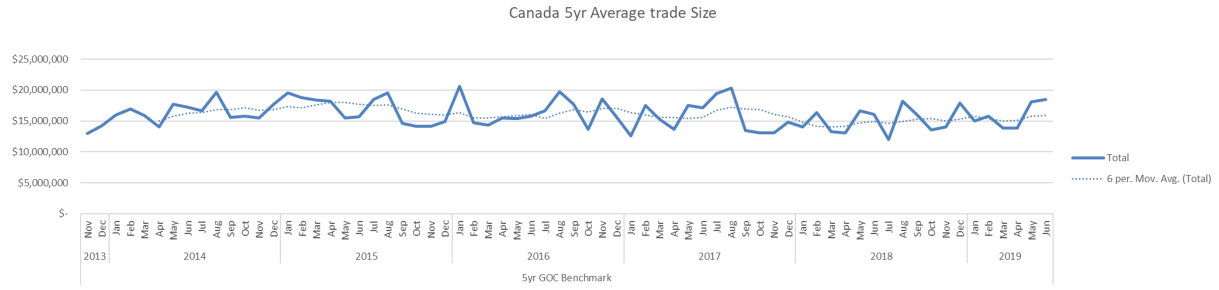
Source: CanDeal

AVERAGE TRADE SIZE

Average trade size can be used as a measure of market depth. Charts 4, 5 and 6 display the average trade size for the three identified fixed income securities. Overall, average trade size trended slightly lower, but not materially for all three securities that were evaluated during the period reviewed, which would seem to indicate that liquidity was not significantly changed for the issues analyzed.

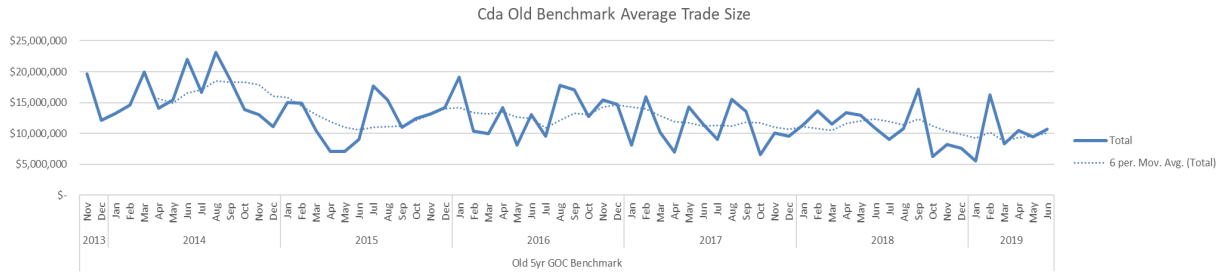
Of note is the fact that average trade size in the 5-Year Ontario Provincial Bond Benchmark fell significantly in late 2014 and never rebounded over the rest of the review period. As is the case for other measures of liquidity average, trade size should be monitored to see if it reverses for the 5-Year Ontario Benchmark or other new trends emerge.

CHART 4: AVERAGE TRADE SIZE - GOVERNMENT OF CANADA 5-YEAR (BENCHMARK)



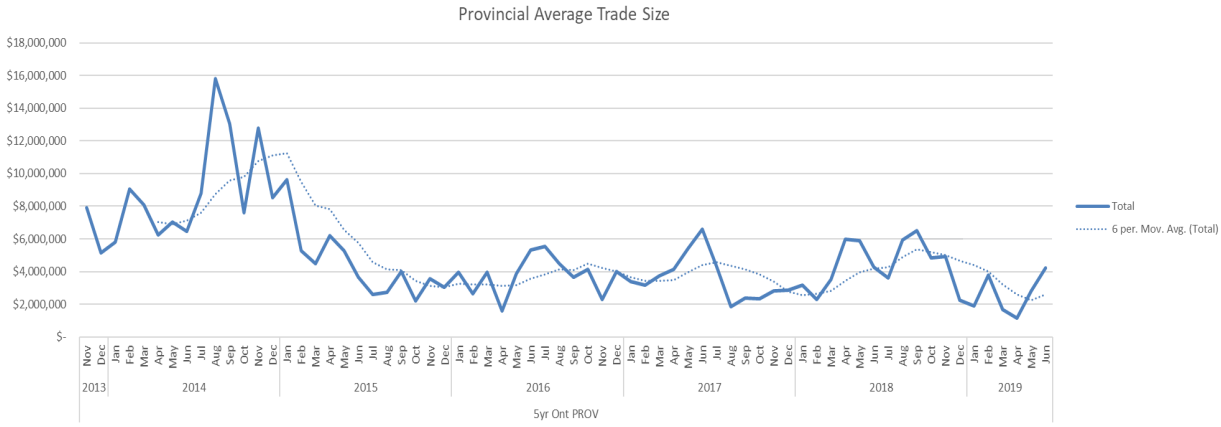
Source: CanDeal

CHART 5: AVERAGE TRADE SIZE - GOVERNMENT OF CANADA 5-YEAR (OLD BENCHMARK)



Source: CanDeal

CHART 6: AVERAGE TRADE SIZE – 5-YEAR ONTARIO PROVINCIAL BOND



Source: CanDeal

CONCLUSION

Overall, liquidity displayed by the fixed income securities studied seems to be somewhat consistent over the period examined. For the sample analyzed, by some measures, there appears to be some evidence of a very slight deterioration in liquidity over the past five years, but this deterioration does not appear to be a real trend or significant enough to materially impact market participants' ability to transact in an efficient and timely manner. A larger sample size will need to be analyzed to verify if this is the case.

It should be noted that corporate and high-yield debt was not studied due to the lack of available data for these products and would be useful, to get a broader picture of liquidity in the Canadian fixed income market. The IIAC will update the liquidity analysis on a quarterly or semi-annual basis and add data sources covering a broader sample of the overall market in an effort to identify trends in liquidity as they occur.

As well, any material regulatory changes that potentially would have an impact on market liquidity will be documented in the regular updates. As mentioned, in future updates we will endeavor to expand the fixed income securities evaluated beyond the data set analyzed in this paper, in addition to adding additional metrics and statistical analysis.

NEXT STEPS

- Expand the analysis to include additional data sources and corporate and high-yield fixed income products.
- Expand the use of additional quantitative metrics and explore the development of a qualitative survey of sell-side market participants.

APPENDIX 1 - CANADIAN FIXED INCOME MARKET REGULATORY ISSUES

FUNDAMENTAL REVIEW OF THE TRADING BOOK (FRTB)

FRTB will take effect January 2022 and will address many new elements of Basel 2.5. Of note, however, regulated firms implementing an Internal Models Approach (IMA) have to start running their models a year in advance of 2022 and receive regulatory approval. This results in a mid-2020 deadline for such regulated financial firms to begin their implementation of these models.

The result will be a required revamping of infrastructure that monitors trading risk.

NET STABLE FUNDING RATIO (NSFR)

Though not being adopted in Canada before January 2020, many market participants have been vocal on NSFR's potential impact on the ability of dealers to act as intermediaries in the collateral and cash markets. Specifically, the NSFR framework requires banks to fund a substantial portion of short-term assets at long-term rates. This will require banks to potentially hold billions of longer-term funding in relation to positions taken in the repo market, resulting in increased costs of repo financing.

The implications could be widespread given the ways in which repo and collateral markets underlie activities in financial markets. Once NSFR is fully implemented, dealers may be less willing to aggressively price certain client trades and hold meaningful inventories to readily facilitate client activity.

APPENDIX 2 – LIQUIDITY METRICS

BID-OFFER SPREAD

The bid-offer spread is the difference between the best bid and offer prices, a commonly-used measure for market liquidity. One-half of the bid-offer spread or the midpoint of the two prices can be used to estimate the cost of the transaction. The lower the transaction cost, the more liquid the market is assumed to be.

Shortcomings:

- When bid-offer varies over time for different securities, the resulting bid-offer spreads are not very comparable.
- The over-the-counter (OTC) debt markets do not have firm rules, and there is no requirement to maintain a tight, two-sided price for a given security. Market makers can post or remove prices as they wish, allowing spreads to move, depending on market conditions.

Despite these shortcomings, bid-offer spreads are one of the most commonly used measures to determine the liquidity in fixed income markets. Empirical evidence has shown that bid-offer spreads are highly correlated with other liquidity measures.

PRICE IMPACT

Informed traders in the marketplace can be thought of as parties having non-public information and are acting to take advantage of this non-public information. The movement of the prices reflects how much the market adjusts to incorporate the information contained in each trade. The change in prices that typically occurs with a buyer-initiated purchase (seller-initiated sale) trade is calculated. It is normally concluded that liquid markets are the ones where trades have the least impact on prices. It is believed that directional trades will be associated with a larger movement in prices when markets are less illiquid.

TRADE SIZE

Trade size can be used as a measure of market depth. Trade size reflects the amount that was transacted in a single trade. On some platforms, the trade size includes any work-up in size over the size that was initially posted in the marketplace. It seems likely that there would be greater use of trade size expansion in illiquid market conditions when dealers are concerned about information leakage.

As is the case for total trading volume, empirical evidence suggests that there is a positive correlation between trade size, and that larger average trade size is associated with increased liquidity in a given marketplace.

TRADING VOLUME

Trading volume is the total value of securities traded in a discrete period and is a straightforward and commonly used measure depicting market liquidity. It is generally agreed that markets with high levels of trading activity are the most liquid, with transactions easily entered and exited at relatively low cost. This seems to correspond quite well with observations regarding the relative liquidity found in various markets, for example, benchmark vs. non-benchmark bonds and listed versus unlisted stocks. Empirical evidence suggests that there is a positive correlation between trading volume and liquidity, meaning that higher trading volume is associated with increased liquidity in a given marketplace. One non-supporting feature of trading volume as a liquidity indicator is that at times, it may also be associated with price volatility, which is a feature of episodes of market illiquidity.

TRADE FREQUENCY

Trade frequency is closely related to trading volume and refers to the number of trades in a discrete period. High trading frequency is likely reflective of a more liquid market, but as is the case for trading volume, at times it may also be associated with price volatility, which is a feature of episodes of market illiquidity. Since it does not include any effects from changes in trade size, however, we might think of trade frequency as an unadjusted measure of market activity versus trading volume.