Canadian Alternative Reference Rate Working Group

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Overview of CDOR and the underlying bankers' acceptance market

Presentation to the Canadian Alternative Reference Rate Working Group

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Confidential – for CARR discussion only

The views expressed in this presentation are those of the presenters and do not necessarily reflect the views of the Bank of Canada.

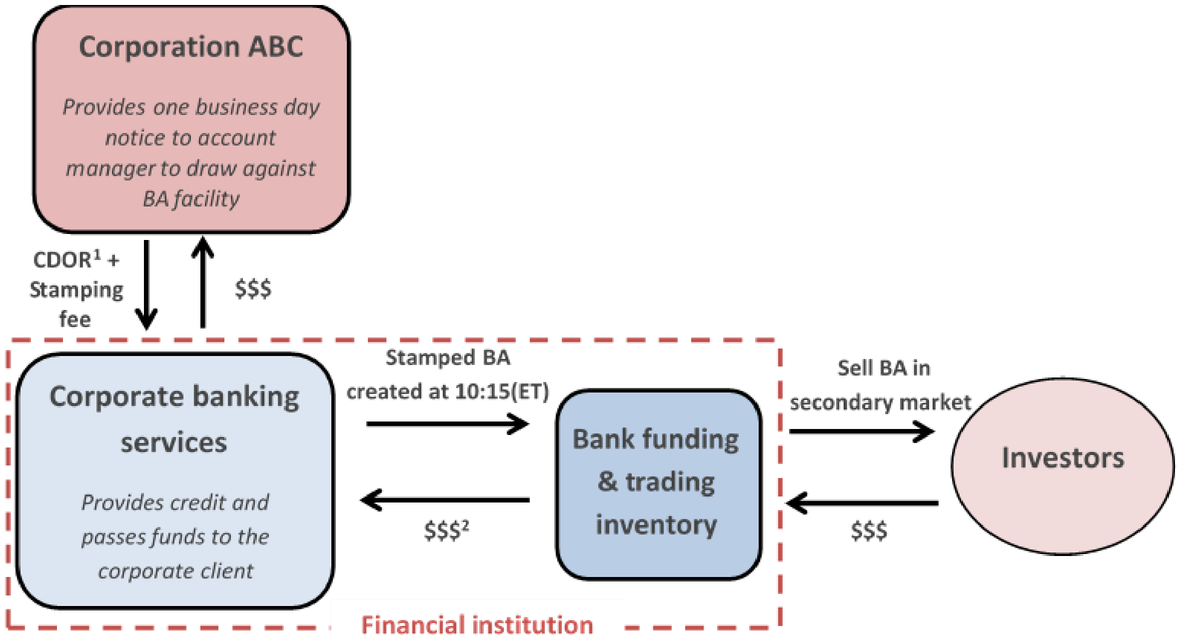
Quick refresher on recent CARR mandate changes

- On October 19, the mandate of the Canadian Alternative Reference Rate working group (CARR) was expanded to include analysis on the Canadian Dollar Offered Rate (CDOR).
- The purpose of the **Credit Benchmark Subgroup** is to analyse the current status of CDOR:
  - Regulatory changes have impacted the effectiveness of banker's acceptances (BAs) as a short-term funding product for banks.
  - Post-Crisis CDOR reforms have focused on submission process, not the efficacy of CDOR as a credit-sensitive benchmark.
- This presentation will provide an **overview of CDOR and the underlying BA market, as well as will highlight previous work undertaken and next steps for the Subgroup.**

What is a Bankers' Acceptance and how do the lending mechanics work?*

- A BA is a **direct and unconditional order from a corporate borrower to draw down against its established line of credit** ("BA facility") at a Canadian bank.
- **Most BA facilities reference CDOR as the interest rate benchmark** for establishing the base borrowing rate.
- Clients can borrow cash for a set term, ranging **anywhere from 1 to 365 days** depending on loan agreement.
- In terms of mechanics:
  - A corporate provides notice to their account manager to draw against their BA facility.
  - The **prevailing CDOR rate set at 10:15 ET plus the stamping fee is paid by the corporate** in exchange for funds.
  - After 10:15 ET, the draw is approved, and the stamped BA ("BA liability") is transferred to the investment bank/dealer's trading book.
  - The bank/dealer may sell the BA to investors in the secondary market (offer side) or hold it on their balance sheet ("BA asset"). Bank/dealers may also hold other bank's BAs.

Figure 1: How BAs are created and sold to investors



[1] CDOR is set daily at 10:15(ET).
[2] This transfer can take place at CDOR set at 10:15(ET).

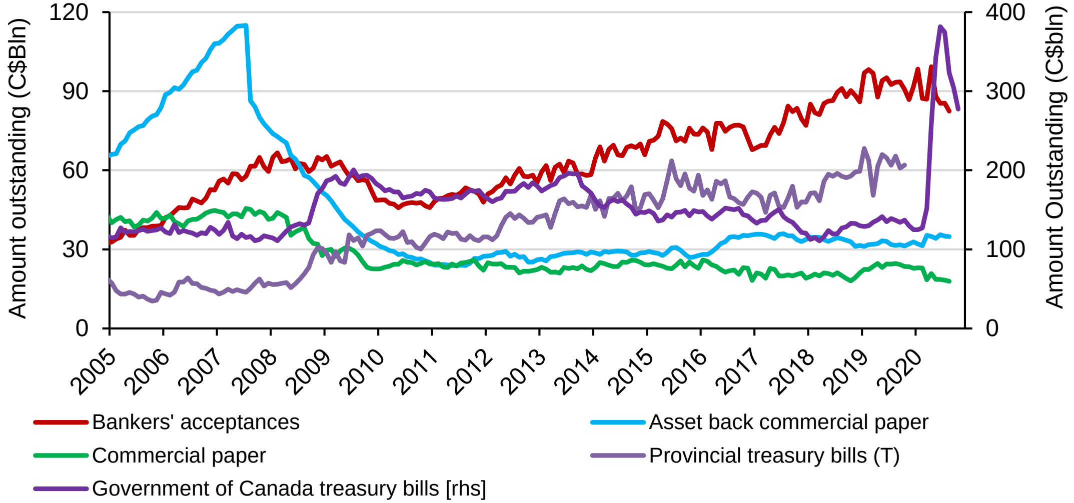
BA facilities are primarily used by small and medium-sized corporate borrowers that may not otherwise have direct access to the primary funding market because of their size and credit ratings.

*For additional information on CDOR and the underlying BA market, see "A Primer on the Canadian Bankers' Acceptance Market."

The underlying BA market remains robust...

- **BAs outstanding have averaged around $90bln year-to-date** while average annual BAs outstanding have increased by around 20% since 2015 (**Chart 1**).
- Average daily BA trading volumes have increased since 2012 and have ranged between $7.5bln and $9bln since 2015 (**Chart 2**).

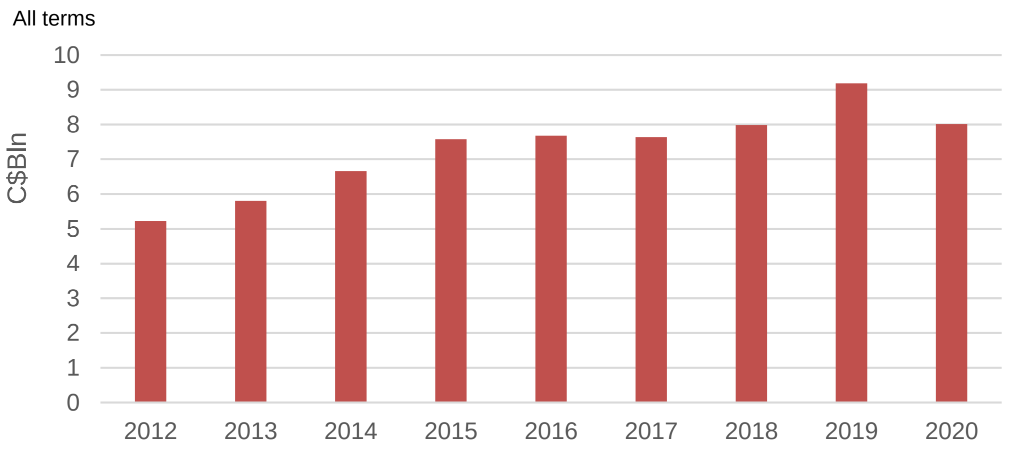
Chart 1: BAs outstanding have continued to grow since 2010



Source: Bank of Canada Banking and Financial Statistics, Statistics Canada, and Bank of Canada staff calculations

Last observation: October 2020

Chart 2: Average daily BA trading volume has increased since 2012



Source: CDS; 2020 (YTD) volumes include BoC purchases

Last observation: October 2020

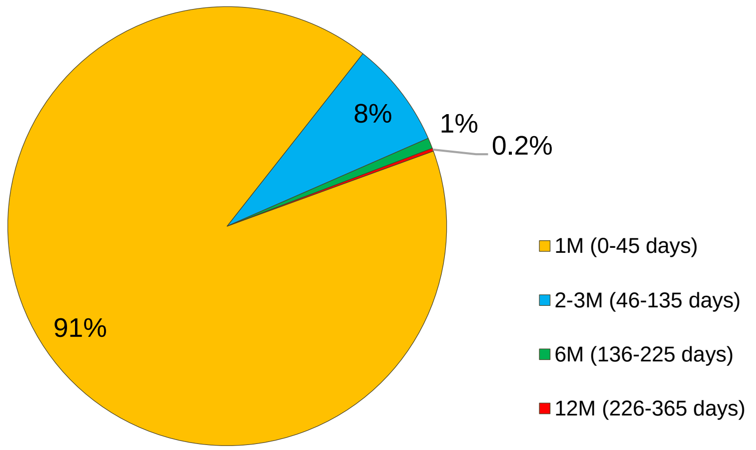
BAs outstanding and average daily trading volumes have remained stable over the past several years.

…while 1-month BAs make up the majority of trade volume

- The term of the borrowing requested by the corporate depends on the their cash flow requirements, interest rate expectations and shape of the CDOR curve.
- In general, **clients tend to borrow for 1 month**, owing to the short-term nature of their cash flow requirements and the desire to minimize reinvestment risk.

Chart 3: BAs 3M and under represent the majority of average daily trading volume

Average daily BA trading volume since 2015 by term as a percentage of total daily trading volume



Source: CDS

Last observation: 03/11/2020

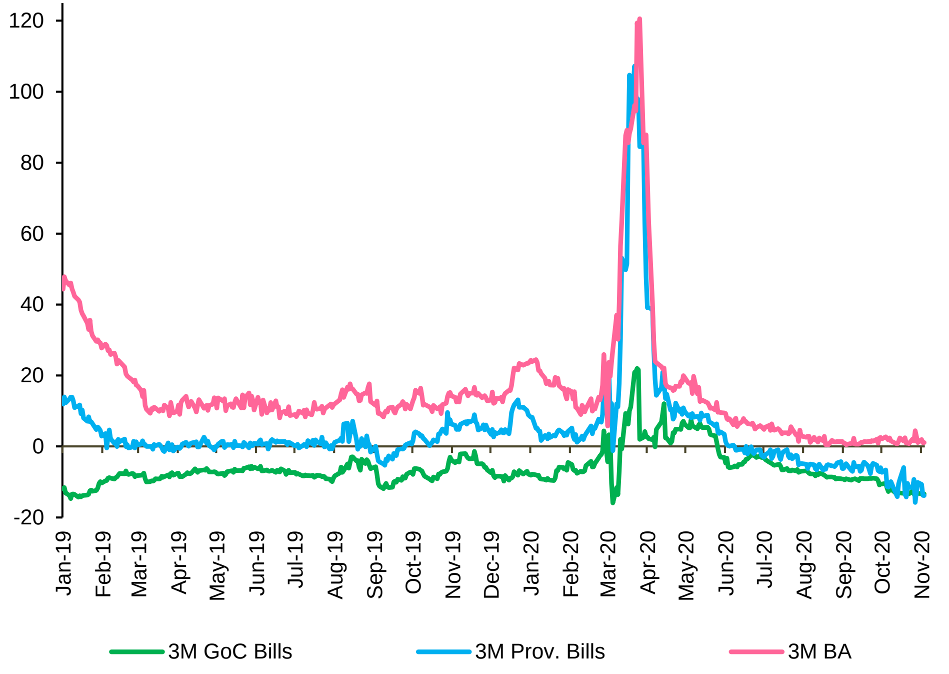
- As such, **issuance volume (and thus stamped BAs) is primarily in the 1M tenor**, with a lesser amount in the 3M term.
- **1M BAs make up around 90% of average daily trading volume since 2015,** while 99% of this volume consists of BAs 3M and under (**Chart 3**).
- BA draws are typically used to meet funding requirements (e.g., accounts payable and payroll), with the **largest drawdowns occurring around the 1st, 15th and last day of the month**. Most corporates roll their draws at maturity.

Who are the investors in this space?

- Given their short-term nature, BAs are **generally bought and held to maturity,** but can be traded for cash-management needs, term extension and credit constraints.
- Investors typically include insurance companies, pension funds, money market mutual funds, corporations, bank treasuries, government agencies and asset managers.
- BAs offer a **relatively attractive yield pickup in the secondary market** over GoC and provincial treasury bills while still being highly liquid and well rated.
- For example, since 2019, the **average pickup has been around 20bps to GoC treasury bills** and 10bps to provincial bills (Chart 4).
- As BAs receive the **same short-term credit rating as the accepting bank,** most receive the highest DBRS credit rating of R-1 (high).

Chart 4: BAs offer a yield pickup in the secondary market to other MM products

Spread to 3-month Overnight Index Swaps (OIS); secondary market traded rates



Source: Bloomberg, IIROC, CDS.

Last observation: 04/11/2020

Regulations have impacted BAs and the way they are funded

- Historically, draws against BA facilities were funded by the sale of the BA in the secondary market. However, **BAs are no longer used to fund facility draws**.
- **Banking regulations**, such as the LCR, NCCF and NSFR **have also made BAs more capital- and liquidity-intensive**.

Table 1: Summary of key banking regulations

	Regulation	Formula
LCR – Liquidity Coverage Ratio	LCR aims to ensure that institutions have an adequate stock of unencumbered high-quality liquid assets (HQLA) to meet their liquidity needs for a liquidity stress event that lasts 30 calendar days.	$\frac{Stock\ of\ HQLA}{Total\ net\ cash\ outflows\ over\ the\ next\ 30\ cal\ days} \geq 100\%$
NCCF - Net Cumulative Cash Flow	NCCF is a liquidity-horizon metric that measures an institution's net cumulative cash flow to capture the risk posed by funding mismatches between assets and liabilities over 12 months.	$NCCF(weeks) = \sum (Inflows - Outflows), Cumulative$
NSFR - Net Stable Funding Ratio	The intent of the NSFR is to enhance the stability of the bank's funding profile by limiting its over-reliance on short-term wholesale funding.	$\frac{Available\ amount\ of\ stable\ funding\ (ASF)}{Required\ amount\ of\ stable\ funding\ (RSF)} \geq 100\%$

Each component of the BA structure has a different regulatory treatment

- In general, **draws on BA facilities today require a higher percentage of term funding** to satisfy NSFR and LCR requirements and the sale of BAs creates a cash outflow that must be funded once the BA's term falls below the LCR's 30 day horizon.

Table 2: Summary of the regulatory treatment of BAs

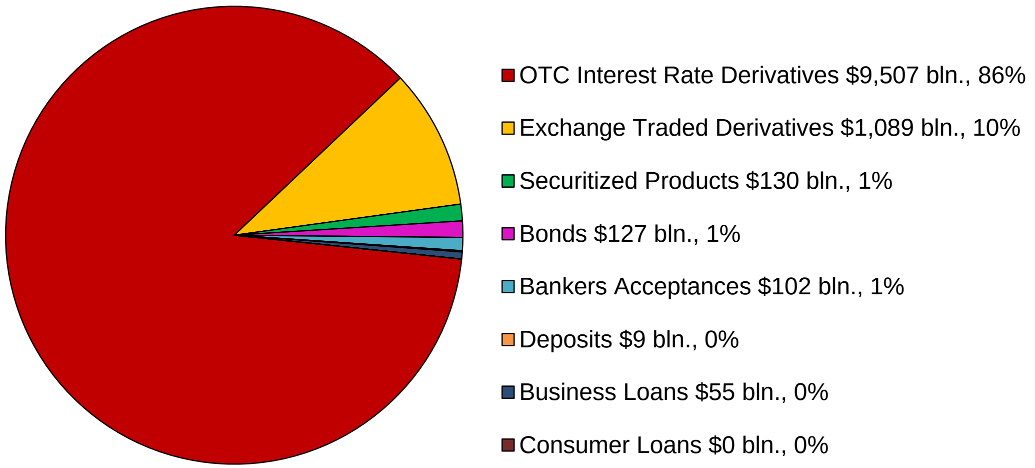
	BA Facility*	BA Liability**	BA Asset***
LCR – Liquidity Coverage Ratio	50% inflow on contractual maturity of facility	100% outflow of amount maturing inside LCR 30 day window	100% inflow on contractual maturity
NCCF - Net Cumulative Cash Flow	100% inflow on latest contractual maturity of the underlying facility	75% outflow on contractual maturity date (25% assumed to rollover)	100% inflow on contractual maturity
NSFR - Net Stable Funding Ratio	85% RSF, 50% if facility matures within a year	35% ASF for stamped BA liabilities with a residual maturity of <6M, irrespective of the counterparty holding the BA	50% RSF if maturing in less than one year or 85% RSF if maturing in one year or more

* **BA facility** refers to the established facility that allows corporate borrowers to receive BA funding. The term of these committed facilities are typically 2-5 years.
** **BA liability** refers to the stamped BA that can be sold in the secondary market to investors. The stamped BA is created when a corporate borrower draws against their BA facility.
*** **BA asset** refers to a BA that is being held on a bank's balance sheet.

What is the relationship between BAs and CDOR?

- CDOR was **originally developed to establish a daily benchmark reference rate for BA borrowings**.
- It is a **committed lending rate** at which banks are **contractually willing to lend cash (offer their balance sheet) to corporate borrowers with existing BA facilities for set terms**.
- The submitted CDOR rate is **not specific to a type of borrower or amount**, but is a benchmark rate for each respective tenor.

Chart 5: **Total outstandings of securities referencing CDOR**



Source: OSC, CARR Survey Data, CMHC, TMX, Bloomberg

Last observation: January 31, 2018

- In today's market, CDOR is also used as the **main interest rate benchmark to price a variety of CAD instruments,** including interest-rate swaps (IRS), futures contracts on BAs, forward-rate agreements (FRAs) and floating-rate notes (FRNs).
- Most financial products that reference CDOR (e.g., IRS, BAX contracts and most FRNs) reference the 3M rate.
- As of January 2018, CDOR was used as the reference rate on financial instruments valued at about C$11 trillion (**Chart 5**).

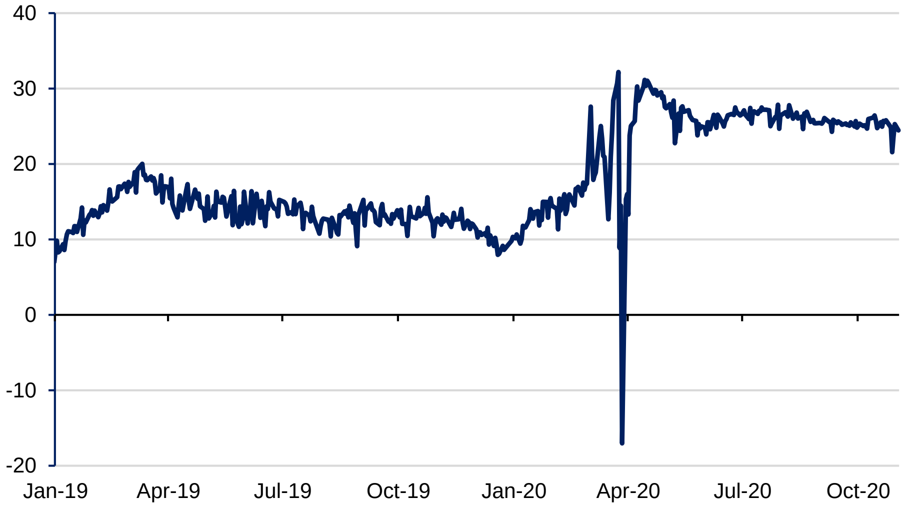
How is CDOR calculated?

- Prior to 10:15 ET, submitting banks provide Refinitiv with the **rate they are willing to lend their balance sheet to corporate borrowers with existing BA facilities** that reference CDOR for 1-, 2-, 3-, 6- and 12-month terms.
  - **Note: Calculation and publication of 6M and 12M CDOR tenors will cease from May 17, 2021 onwards**.
- The highest and lowest quotes are dropped, and a simple arithmetic average of the remaining quotes is calculated to set the daily CDOR benchmark.
- CDOR and submitted quotes are published at 10:15ET by Refinitiv.
- The **6 submitting banks originate over 90% of BAs** outstanding.
  - The submitting banks are BMO, BNS, NBC, TD, RBC, CIBC.
- **CDOR is closely tied to overall money market conditions** and may be influenced by other factors such as regulatory costs; credit market conditions; seasonal funding pressures and the supply-demand dynamics for BAs.

What does the CDOR-BA spread represent?

- The **CDOR-BA spread** is the difference between:
  1. The **rate at which banks are willing to lend (offer) their balance sheet to corporate borrowers with existing BA facilities** for specific terms (CDOR); and
  2. The **rate at which dealers offer stamped BAs from inventory to investors in the secondary market**.
- As such, the CDOR-BA spread is essentially the **difference between the primary bid-side quote and the secondary market offer for BAs**.

Chart 6: 3M CDOR-BA spread has remained wide since March



Note: Spread volatility at the end of March was due to a decline CDOR while secondary market 3M BA rates were unchanged (as per IIROC's calculation methodology when insufficient trade volume exists).

Source: IIROC, Bloomberg

Last observation: 02/11/2020

- The CDOR-BA **spread can be volatile** and is influenced by a number of factors.
  - Seasonality and client demand (short-term influences);
  - Regulatory requirements and the ability to warehouse inventory over month- and quarter-ends (structural influences).
- This **spread has widened post-GFC**, largely due to higher regulatory costs.
- In 2019, the 1M and 3M CDOR-BA spread averaged just under 15bps. However, since **March, this spread has widened further, averaged closer to 25bps** (Chart 6).

Since the GFC, CDOR reforms have focused on submission process…

- IIROC began a **review of CDOR in August 2012**.
  - This timing coincided with the Wheatley Review of LIBOR, published in September 2012.
- This review focused on the **governance of supervisory practices around the CDOR submission process.**
- The report, published in January 2013, **found supervisory practices related to CDOR submissions were adequate overall.**
- Although did **recommend several improvements**, including:
  - Specific documented criteria for participation in the rate-setting process;
  - More explicit documentation related to CDOR's calculation methodology, definition and transparency; and
  - Documented criteria for the participation in and supervision of the CDOR-setting process and controls to prevent potential manipulation.

Additional CDOR reforms have included…

- In June 2014, IIROC published a **voluntary code of conduct** developed by an industry panel of CDOR-submitting banks in consultation with IIROC and the BoC.
  - The code was later adopted by Thomson Reuters (Refinitiv) when it became the administrator at the end of 2014
- The **responsibility for CDOR submissions moved from the dealer to the bank for all submitters** to better reflect the BA-lending business.
  - OSFI assumed a supervisory role of the effectiveness of governance and risk controls surrounding banks' CDOR-submission process.
  - OSFI also set out final guidelines (E-20) for CDOR benchmark-setting submission.
- **Thomson Reuters (Refinitiv) was appointed the IOSCO-compliant administrator for CDOR on December 31, 2014**.
- As administrator, Refinitiv is responsible for calculating, administering, distributing and commercializing the rate.

More recently, Refinitiv consulted on CDOR terms

- In order to align with established principles and ensure ongoing compliance with existing and anticipated regulations, **Refinitiv evaluated the viability of 6M and 12M CDOR tenors**.
- On September 4, Refinitiv requested feedback from CDOR stakeholders on the potential impact of:

1. The **cessation of 6M and 12M CDOR tenors**; and
2. If there was a 3 month delay in the publication of individual contributions used in the determination of CDOR.

- Refinitiv found that **activity in the BA maturities that underly the 6M and 12M CDOR tenors is very minimal:**
  - From November 2016-2019, daily average dollar value of BAs created in the primary market has been 0.3% and 0.1% of overall BA dollar issuance for 6M and 12M BAs, respectively.
  - Unique BAs created in the primary market over the same period are 0.4% and 0.1%, respectively.
- Based on the feedback received, on November 12, Refinitiv announced:
  - **Calculation and publication of the 6M and 12M CDOR tenors will cease from Monday, May 17, 2021 onwards**. The last day of publication for the 6M and 12M CDOR tenors will be Friday May 14, 2021. **The 1M, 2M and 3M tenors will not be affected by this action.**
  - No decision will be taken at this stage regarding the introduction of a delay in the publication of individual contributions to CDOR. Refinitiv will continue to consider this possible change in further detail.

Next steps and timelines

- ➢ Establish the Credit Benchmark Subgroup, including assigning co-chairs and membership.
- ➢ Define the Credit Benchmark Subgroup's mandate and develop the workplan

Table 3: **Tentative timelines and key deliverables**

Due date	Item
December 2020	• Credit Benchmark Subgroup co-chairs, membership and mandate (scope) finalized
January 2021	• Credit Benchmark Subgroup workplan finalized
April 2021	• Credit Benchmark Subgroup to provide a draft report and recommendations to CARR
May 2021	• CARR to table final recommendation to CFIF for review and approval
Summer 2021	• CARR to publish white paper/consultation on recommended path forward

Questions?