Reforming Financial Benchmarks: An International Perspective

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- Robust benchmarks are of fundamental importance to financial markets, providing objective measures of prevailing market prices on which standardized contracts can be based. They are especially important to derivatives markets, since derivatives are an essential hedging tool for financial institutions and other market participants; the notional value of these instruments amounts to hundreds of trillions of dollars worldwide, including over $10 trillion in Canada.
- Allegations of the manipulation of some global financial benchmarks and, in some cases, admissions of wrongdoing have captured the attention of the world's financial press, clearly highlighting the need to address the incentive problems and weak governance affecting some benchmarks.
- Central banks and other public authorities around the world, including those in Canada, are working together to improve financial benchmarks by ensuring that they meet robust international standards. However, given the central role that these benchmarks play in today's financial system, any substantive changes to them need to be globally coordinated and their broader financial stability implications carefully considered.

Introduction

Allegations of manipulation have propelled financial benchmarks from the back pages of financial contracts to the front pages of the financial press. This has not only demonstrated a clear need for reform, it has highlighted the importance of such benchmarks within the financial system. Indeed, it is difficult to imagine modern financial markets without derivatives, floating-rate loans and notes, and financial indexes—all enabled by financial benchmarks. At their core, financial benchmarks are rates or prices that are referenced or used in a variety of financial contracts to determine a value or payment, based on the prices prevailing in the underlying market, at a specific time in the future. For example, an individual or firm may borrow money today and pay the lender interest based on the market interest rates, as measured by a financial benchmark, over the course of the loan.

Benchmarks have facilitated the standardization of financial products through more stable and transparent pricing, which has also stimulated the rise in derivative instruments to help firms better manage their underlying risk exposures. The rapid development of derivatives markets since the 1980s, and their reliance on underlying financial assets or benchmarks to determine value, has led to the degree of dependence on benchmarks that is observed today. In many cases, the size of the markets referencing financial benchmarks overshadows the market on which the rates are based, increasing the economic incentive to influence rates.[1] While this incentive has been kept in check to some degree by existing rules against market manipulation, recent events have demonstrated that more steps need to be taken to enhance the governance of financial benchmarks and ensure that they continue to be representative of the prices in their underlying markets.

Robust benchmarks are essential to promoting the safety and stability of the global financial system. Therefore, public authorities and the financial industry are now collaborating globally to improve the reliability, resilience and governance of financial benchmarks to restore the confidence of both markets and the public in these rates.

1 For example, over US$500 trillion in financial contracts and instruments reference the key global interbank interest rate benchmarks.

This report provides background on the recent policy developments related to financial benchmarks, focusing primarily on the global interbank interest rate benchmarks that were at the centre of the manipulation that motivated the recent reviews. The report begins with a discussion of the role of financial benchmarks and then examines global reform efforts and the issues faced by policy-makers. It concludes with a review of the recent developments in domestic policy with respect to the principal Canadian interest rate benchmark, the Canadian Dollar Offered Rate (CDOR).

The Role of Financial Benchmarks

Financial benchmarks allow market participants to anchor the payment or valuation of financial contracts to an agreed-upon rate or price. **Box 1** presents a generic framework for the governance and submission of financial benchmarks.

Benchmarks, particularly interbank interest rate benchmarks, have facilitated the standardization of financial contracts, leading to lower transaction costs and enhanced market liquidity, and have allowed for the efficient redistribution of risks in the financial system (see **Box 2** for more on interbank interest rate benchmarks).

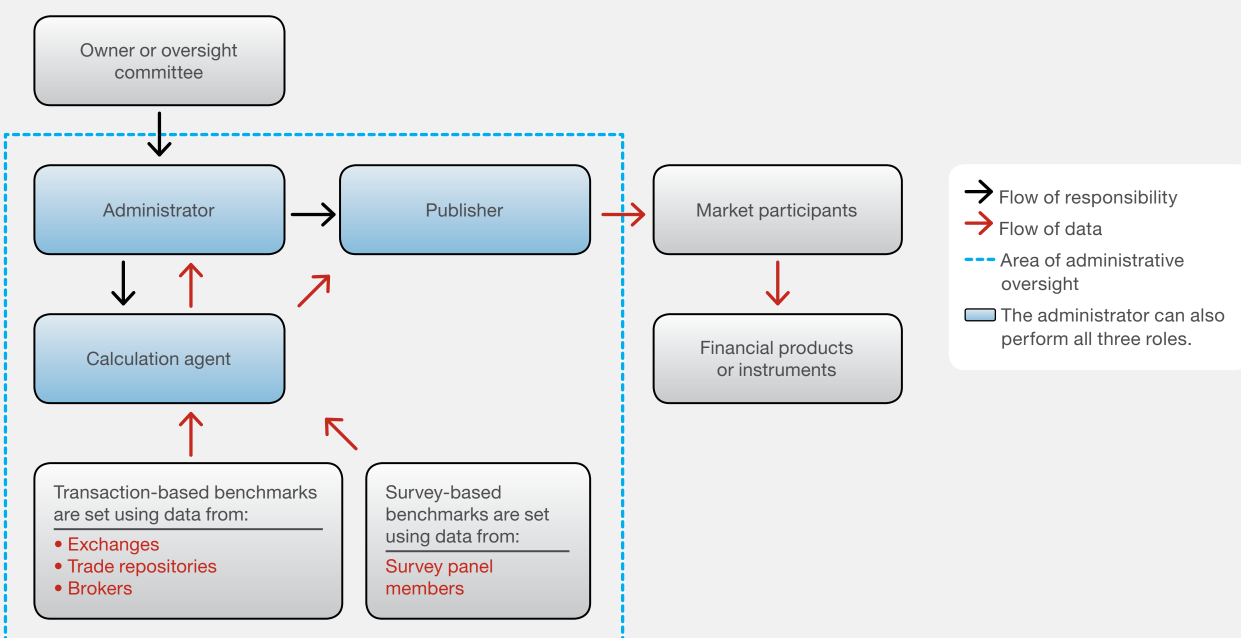
Box 1

General Framework for Financial Benchmarks

In general, benchmarks are established by the owner of the benchmark or the committee that oversees it (**Figure 1-A**). The owner or oversight committee either becomes or appoints the benchmark administrator, the entity responsible for all aspects of the benchmarking process, including setting rules and standards for the benchmark and ensuring that submitters comply with them. The administrator can also be charged with calculating and publishing the benchmark, except when these functions are delegated to other entities. In those cases, it is the administrator's role to monitor the contractor's performance.

Broadly, benchmarks can be based entirely on market data (i.e., transaction-based benchmarks) or on the opinions of a number of market participants (i.e., survey-based benchmarks). However, even in the latter case, the submissions should typically be related directly or indirectly to transactions in the underlying markets. In both cases, the calculation agent receives raw data that are potentially subject to certain screening parameters and calculates the rate according to predefined rules. These rules stipulate, for example, whether any input data are to be excluded, so as to eliminate potential outliers, and specify the calculation methodology to be applied. The publishing agent, in turn, provides the benchmark rates (and possibly the original individual submissions) to its subscribers or to the public.

Figure 1-A: Governance and submissions framework for financial benchmarks



Source: Bank of Canada

Box 2

A History of Interbank Benchmarks

Interbank interest rate benchmarks emerged in the late 1960s and 1970s to facilitate bank lending as cross-border bank funding markets, which had been shuttered since the Great Depression, began to reopen. Regulatory changes, later followed by an influx of petrodollars, had fuelled rapid growth in the market for U.S.-dollar-denominated deposits outside the United States (i.e., eurodollars), leaving banks, primarily those in London, flush with deposits. To put these deposits to work, banks increased their interbank lending and issuance of syndicated loans (loans offered to a single borrower by a group of banks). Syndicating such loans allowed banks to reduce their credit exposure to a single borrower. To better facilitate this syndication process, some banks in London began to offer loans based on the weighted average rate at which the syndicate banks were willing to lend funds to one another plus a spread based on the borrower's credit standing, an idea that proved immensely popular and helped the syndicated loan market to grow even larger.

The reopening of interbank lending markets and the growth in syndicated loan markets contributed to the creation of interest rate derivatives to manage the risk exposures arising from this type of banking activity, including products such as interest rate swaps and eurodollar futures contracts. However, to commoditize these products, a common, transparent benchmark against which to price them became necessary, since these products would otherwise require far more effort to price. The British Bankers' Association (BBA) and the Bank of England, together with other entities, began working to address this issue in 1984. The result was a set of recommended terms and conditions for interest rate swaps, including the fixing of BBA interest settlement rates, which were the predecessor of the London Interbank Offered Rate (LIBOR). LIBOR was officially published for the first time about two years later, on New Year's Day in 1986, initially for three currencies (the U.S. dollar, the Japanese yen and the pound sterling). Other major jurisdictions quickly established their own benchmarks for interbank interest rates, including the Tokyo Interbank Offered Rate (TIBOR) and, most recently, the Euro Interbank Offered Rate (EURIBOR), which was developed with the introduction of the euro.

Canadian banks fashioned a somewhat similar rate to use in pricing (often syndicated) loans backed by bankers' acceptances (BAs), the Canadian Dollar Offered Rate (CDOR). CDOR and LIBOR began to diverge in 1998, however, when the administrator of LIBOR, the BBA, asked submitting banks to base their submissions on the rate at which they were able to borrow funds in the unsecured interbank market. In contrast, CDOR remains the average rate at which banks are willing to lend funds against issuances of BAs, and CDOR submitters continue to be directly involved in the BA issuance process.

A loss of confidence or credibility in some of these benchmarks could therefore have a profound impact on the liquidity of the markets referencing them, potentially giving these benchmarks systemic importance. Recent headlines may have shaken that confidence, but confounding expectations that there could be reduced use of these rates, the aggregate net open interest in eurodollar and EURIBOR futures contracts[2]—some of the most liquid contracts in the world—has returned to the record-high levels it reached before the 2007–09 financial crisis.

Weaknesses Exposed in Survey-Based Benchmarks by the Financial Crisis

A weak governance framework, especially regarding submissions, can leave a benchmark vulnerable to manipulation. The most obvious example of this is the possibility that panel members on survey-based benchmarks[3] will skew their submissions to influence the value of a benchmark setting to maximize the profit from positions referencing the rate. In fact, shortly after the financial crisis, allegations emerged that some key global interbank interest rate benchmarks had been manipulated through skewed submissions by their survey members (Vaughan, Finch and Ivry 2013). This occurred during the turmoil in interbank lending markets precipitated by the crisis, which resulted in fewer transactions against which the submissions could be verified. While this manipulation primarily touched the survey-based interbank benchmarks—LIBOR, EURIBOR and TIBOR[4]—allegations of the manipulation of liquid transaction-based foreign exchange benchmarks have recently come to light as well.

2 EURIBOR is the Euro Interbank Offered Rate.

3 Panel members are market participants that contribute quotes to a survey-based benchmark. These firms are selected by the administrator to ensure that a representative sample of the market is captured by the benchmark rate.

4 These are the most important international survey-based interbank interest rate benchmarks. LIBOR is the London Interbank Offered Rate and TIBOR is the Tokyo Interbank Offered Rate.

For most survey-based interbank benchmarks, the submissions of individual banks are made public and are viewed by market participants as a direct reflection of the submitters' credit risk. Submitters therefore have an incentive, which was particularly evident during the crisis, to understate their borrowing rates in order to influence the market perception of their creditworthiness. To the extent that submissions were biased, the impact would differ across market participants depending on whether they were a borrower or a lender.

Wheatley Review of LIBOR

In 2012, allegations of manipulation in some LIBOR rates led the U.K. Financial Services Authority to appoint Martin Wheatley to review the benchmark.[5] The goal of the review was to investigate various aspects of LIBOR and to provide recommendations on how to make it less susceptible to manipulation.[6]

The Wheatley Review concluded "that the issues identified with LIBOR, while serious, can be rectified through a comprehensive and far-reaching programme of reform; and that a transition to a new benchmark or benchmarks would pose an unacceptably high risk of significant financial instability, and risk large-scale litigation between parties holding contracts that reference LIBOR" (HM Treasury 2012). Among the results of the review were:

- Several LIBOR maturities and currencies were eliminated, since there were very few transactions underpinning them.[7] This included the elimination of the Canadian-dollar LIBOR rates. Since they were not widely used, their elimination had no market impact.[8]
- The publication of individual submissions was delayed by three months to reduce the incentive for submitters to understate their funding costs, particularly during times of stress.[9]
- A code of conduct was implemented for submitters that requires panel banks to tie their submissions to transactions, where possible, and provides guidelines for internal controls, records retention and external auditing.

Finally, in response to one of the suggestions by the Wheatley Review for strengthening the governance framework for LIBOR, the British Bankers' Association ceded its role in administering LIBOR to the IntercontinentalExchange Group (ICE) through a public tender process.[10]

One of the broader impacts of the Wheatley Review was the attention it drew to the potential effects on financial markets of the elimination of a benchmark through the sudden disappearance of the underlying market on which the rate is based. Contracts referencing benchmarks typically have "contingency clauses," which provide alternative means of valuing the contract if the normal benchmark is unavailable. In most cases, the contingency clauses are written to address the short-term unavailability of a benchmark rate (e.g., owing to some operational interruptions), but not the total disappearance of the benchmark.[11] The Wheatley Review's final report suggested that market participants review their standard contracts to ensure that they contain adequate contingency provisions in case LIBOR is no longer available—a prudent recommendation for any contract referencing a benchmark.

Global Policy Response

As concern about financial benchmarks grew, public sector authorities around the world began working together to determine the best way to make these benchmarks less susceptible to manipulation without harming the markets referencing them (**Table 1**). This has been a formidable task, since many of the benchmarks are integral to the functioning of the financial system.[12] Modifying or replacing these rates is not a straightforward task, especially given the large number of long-maturity legacy contracts referencing them. Changing the underlying economic characteristics of a benchmark by, for example, moving from an unsecured interbank rate to one secured by government collateral requires a complete and thorough analysis of the impact that such a step would have on the financial system as a whole. And while transaction-based benchmarks are often viewed as less susceptible to manipulation because they are based on actual transactions rather than on survey results, there may not always be a sufficiently liquid market available to support a purely transaction-based interbank interest rate benchmark. Transaction-based rates could also face problems during periods of stress, when transaction volumes tend to be lower.

5 A number of other jurisdictions, including Canada and the European Union, have launched reviews of their interbank benchmarks, with recommendations similar to the Wheatley Review.

6 The Wheatley Review was not intended to investigate claims of manipulation or fraud, a job that was left to the appropriate regulatory authorities.

7 The number of LIBOR currencies was reduced to 5 from 10, and the number of reported tenors was reduced to 7 from 15.

8 See the June 2013 announcement of changes to LIBOR at http://www.bbalibor.com/news/announcement-of-Libor-changes.

9 It also removed the ability of submitters to rely on or reference rates from other banks from the previous day when calculating their rate submission.

10 ICE purchased NYSE Euronext, the firm that was originally selected to take over as the administrator of LIBOR. The announcement of the purchase is available at http://ir.theice.com/investors-and-media/press/press-releases/press-release-details/2013/IntercontinentalExchange-Completes-Acquisition-of-NYSE-Euronext/default.aspx.

11 In most cases, these clauses refer to ways to replicate the calculation of the benchmark on a bilateral basis by polling a more limited set of banks.

12 For example, they act as the internal transfer rate used by many banks to distribute funds.

Reflecting these concerns, two main global initiatives have been launched to address the underlying issues associated with financial benchmarks: the IOSCO Principles for Financial Benchmarks and the Official Sector Steering Group created by the Financial Stability Board (FSB).

IOSCO Principles

In July 2013, the International Organization of Securities Commissions (IOSCO), a global group of regulators that includes the Ontario Securities Commission and Quebec's Autorité des marchés financiers, published its Principles for Financial Benchmarks, a set of global best practices for these instruments. These Principles have been endorsed by the Group of Twenty (G-20) and the FSB. IOSCO members are expected to review the processes for the major financial benchmarks established in their jurisdictions against the Principles by January 2015.[13]

Developed in consultation with the industry, the IOSCO Principles strongly favour the use of transactional data or executable quotes—inputs that come from actual market transactions rather than from opinions. For survey-based benchmarks, the Principles require that contributors establish a hierarchy of the different types of data they use when constructing their submissions. For example, a firm determining its contribution to an interbank benchmark might first take into account the previous day's interbank transactions, followed by other relevant transactions, and finally, other relevant economic factors, based on the submitter's expert judgment.

The Principles also outline a number of key roles related to financial benchmarks: benchmark administrator, submitters, calculation agent and publisher (Table 2), and specify the key responsibilities for the entities tasked with these roles (IOSCO 2013). IOSCO's governance framework is designed to address the conflicts of interest faced by firms in the benchmarking process, and to increase the transparency around the determination of the benchmark. Since a "one-size-fits-all" approach would not be appropriate in light of the heterogeneity of financial benchmarks, IOSCO encourages regulators and market participants to take into account the economic characteristics of the underlying benchmarks when applying the Principles.

As a set of minimum global standards, the IOSCO Principles are not legally binding, but IOSCO nonetheless encourages countries to legally require compliance with the Principles where it is deemed necessary. However, even if a jurisdiction chooses not to use the law to enforce the Principles, its domestic markets may be affected if other jurisdictions decide to do so. For example, the European Commission is currently

13 The FSB's Official Sector Steering Group has commissioned IOSCO to conduct an early review of the most widely used financial benchmarks against the IOSCO Principles by June 2014 (FSB 2013).

Table 1: Reforming financial benchmarks: Global policy response

2012	
2 July	Wheatley Review of London Interbank Offered Rate (LIBOR) begins
1 Aug	Investment Industry Regulatory Organization of Canada (IIROC) begins review of Canadian Dollar Offered Rate (CDOR)
28 Sept	Wheatley Review of LIBOR published
01 Oct	European Securities and Markets Authority (ESMA) and European Banking Authority (EBA) begin review of the Euro Interbank Offered Rate (EURIBOR)
2013	
10 Jan	IIROC review of CDOR supervisory practices published
11 Jan	ESMA and EBA publish EURIBOR report
18 Mar	Bank for International Settlements releases report on reference-rate practices (BIS 2013)
17 July	International Organization of Securities Commissions (IOSCO) publishes Principles for Financial Benchmarks
29 Aug	Financial Stability Board (FSB) announces creation of the Official Sector Steering Group (OSSG) and the Market Participants Group
18 Sept	European Commission publishes final proposal for benchmark rules
2014	
13 Jan	Office of the Superintendent of Financial Institutions (OSFI) announces regulatory role for CDOR
June	OSSG to report to FSB
2015	
Jan	IOSCO assessments due

Source: Bank of Canada

Table 2: IOSCO-defined roles in the benchmark-setting process

Entity	Role
Owner and/or oversight committee	▪ appoints administrator, calculation agent and publisher ▪ ensures that the administrator meets internationally accepted requirements
Administrator	Responsible for all aspects of the benchmark-determination process, including: ▪ developing and determining the benchmark ▪ establishing credible and transparent governance, oversight and accountability procedures ▪ monitoring the compliance of submitters and other parties (i.e., calculation agent and publisher, if the administrator does not take on these roles)
Calculation agent	▪ checks for errors in submissions ▪ calculates benchmark setting based on submissions according to a specified methodology
Publisher	▪ makes benchmark settings available to subscribers or to the public
Submitters	▪ determine submissions and transmit them to the calculation agent ▪ abide by the code of conduct set by the administrator (for survey-based benchmarks)

Source: Adapted from the IOSCO Principles for Financial Benchmarks (IOSCO 2013).

considering a proposed law that would prohibit entities in the European Union from trading products that reference benchmarks that do not meet the IOSCO Principles (EC 2013). This could potentially affect the liquidity of any products referencing such benchmarks and directly influence the trading activity of financial firms with operations located in the European Union.

FSB Official Sector Steering Group

Given the systemic importance of the key interbank benchmarks and the potential for cross-border issues to develop, the G-20 asked the FSB to ensure that benchmarks are assessed consistently across jurisdictions and to foster coordination on benchmark reform between authorities (FSB 2013). To achieve these goals, the FSB created an Official Sector Steering Group (OSSG) of regulators and central banks from the countries with the most widely used interbank reference rates. The OSSG's work includes an assessment of three major global financial benchmarks—LIBOR, EURIBOR and TIBOR—against the IOSCO Principles, focusing on governance and the processes for determining the benchmarks. The OSSG will present its findings to the FSB by June 2014.

The FSB also asked the OSSG to establish and guide the work of a Market Participants Group (MPG) of industry representatives.[14] The MPG was charged with exploring options for robust, IOSCO-compliant alternatives for the most widely used interest rate benchmarks. In addition, the MPG investigated issues associated with transitioning trillions of dollars in legacy contracts to these new alternative benchmarks, including the legal and accounting implications of doing so.

Canadian Policy Response

Even though there have been no reports that Canadian financial benchmarks have been manipulated, Canadian authorities, together with the financial industry in Canada, are taking steps toward improving the governance framework for domestic benchmarks.

One such step is the ongoing effort to reform CDOR to ensure that it is compliant with the IOSCO Principles. Unlike many global interbank benchmarks, CDOR is a committed (i.e., executable) lending rate that is actively referenced by the major Canadian banks in their lending facilities for bankers' acceptances (BAs). After treasury bills, BAs account for the second-largest segment of the Canadian money market, with approximately Can$66 billion outstanding. Having a committed rate reduces some of the incentives to manipulate rates that have been present in other global benchmarks, especially since borrowers can choose when, and at what maturity, to borrow.

Nonetheless, given that over Can$10 trillion worth of financial products reference CDOR, there could exist some incentive to influence the submitted rate. Hence, there should be strong internal controls in place for CDOR submissions.

The Investment Industry Regulatory Organization of Canada (IIROC) reviewed CDOR's supervisory practices in 2012.[15] In contrast to the Wheatley Review of LIBOR, the focus was primarily on the governance of supervisory practices around the submission, rather than a broader review of the underlying BA market (IIROC 2013). The review found that while submitters had the same basic understanding of CDOR, they each made slightly different assumptions in determining their submissions.[16] While IIROC found the supervisory practices for CDOR submitters adequate overall, they recommended some improvements, including more explicit documentation related to CDOR's calculation methodology, definition and transparency. Further internal controls to prevent potential manipulation, as well as documented criteria for being a CDOR submitter, were also proposed. Since the publication of this report, Canadian authorities have been working with IIROC and the CDOR panel member banks to address IIROC's concerns and to ensure that CDOR is compliant with the IOSCO Principles.[17]

Reflecting the fact that BA-based lending is a banking activity, all CDOR submissions now originate from the bank side, rather than from the dealer side, of the submitter's institution. Consistent with this move, the Office of the Superintendent of Financial Institutions assumed the responsibility for supervising the effectiveness of the governance and risk controls associated with banks' CDOR submission processes (OSFI 2014). Subsequently, in its recent budget, the federal government announced its intention to amend the Bank Act to include a regulation-making authority covering bank submissions to financial benchmarks. The number of submitters has also been reduced to seven banks, with all remaining panel members now operating as both active issuers and market-makers in Canadian-dollar BAs. While the size of the panel is small relative to other international interbank interest rate benchmarks, the seven CDOR panel members issue BAs daily and account for close to 99 per cent of the outstanding BAs (**Chart 1**).

14 The Bank of Canada is represented on the OSSG, and Canada is also represented on the MPG.

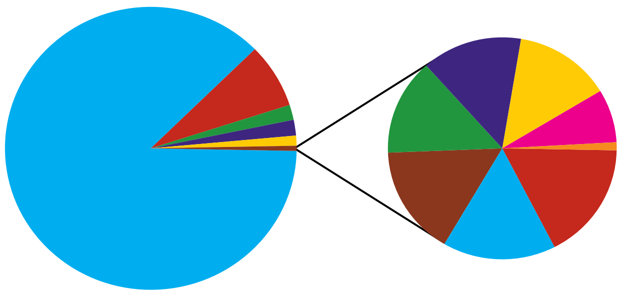
15 The Bank of Canada participated as an observer.

16 This arises because each bank's submission is a function of the way it funds itself and therefore takes into account specific factors relevant to its funding strategy.

17 This work is being done through the Head of Agencies, a public sector coordination group that discusses issues related to Canadian capital markets. It includes the Alberta Securities Commission, Autorité des marchés financiers, the Bank of Canada, the British Columbia Securities Commission, the Department of Finance, the Office of the Superintendent of Financial Institutions and the Ontario Securities Commission.

The CDOR panel members also worked in consultation with IIROC and the Bank of Canada to develop and publish an industry code of conduct for CDOR, outlining the responsibilities of the submitting banks and minimum standards for internal controls, as well as the methodology for determining CDOR submissions.[18] The CDOR panel member banks have also begun the process of establishing an IOSCO-compliant administrator.[19] An administrator is expected to be formally appointed by the end of 2014. OSFI has also recently released a draft guideline on governance and internal controls surrounding the CDOR rate submission process.[20] While not yet completely implemented, these actions represent significant steps toward making the CDOR benchmark IOSCO-compliant and addressing the weaknesses described in the IIROC review.

Chart 1: Instruments referencing CDOR



Products referencing CDOR[a] (Can$ billions)
- Interest rate swaps, $9,798
- BAX futures, $830
- FRAs, $202
- Basis swaps, $193
- FRNs, $129
- BAs, $66

Distribution of BA issuance[b]
- BNS, 17%
- RBC, 16%
- CIBC, 16%
- BMO, 14%
- NBC, 14%
- TD, 14%
- HSBC, 8%
- Other, 1%

a. Bankers' acceptances futures (BAX) outstanding are from the Montréal Exchange on 20 March 2014; basis swaps outstanding are from the Depository Trust and Clearing Corporation on 7 April 2014; forward rate agreements (FRAs) outstanding are from the Bank for International Settlements (BIS) on 30 June 2013; floating rate notes (FRNs) outstanding are from Bloomberg on 20 March 2014; and interest rate swaps outstanding are from the BIS on 30 June 2013. No adjustments have been made for double counting.
b. BA issuance numbers for the Bank of Montreal (BMO), Bank of Nova Scotia (BNS), Canadian Imperial Bank of Commerce (CIBC), HSBC Bank Canada (HSBC), National Bank of Canada (NBC), Royal Bank of Canada (RBC), and the Toronto-Dominion Bank (TD) are from OSFI on 31 January 2014.

Source: Bank of Canada

Conclusion

Public sector authorities around the world are developing and implementing their responses to the allegations of manipulation that have emerged for many financial benchmarks. These efforts seek to ensure that benchmarks are robust without compromising their intended economic role, while also taking into account the complex issues that can arise in transitioning to alternative benchmarks. Canada is no exception: our public sector authorities are working closely with the industry to ensure that our financial benchmarks are robust and meet international standards.

18 The code of conduct is available at http://docs.iiroc.ca/DisplayDocument.aspx?DocumentID=D2D9A8334FA6414AA79CD1FC3C252966&Language=en.

19 The Canadian Bankers Association has released a tender notice for selecting an administrator for CDOR and CORRA, available at http://www.cba.ca/en/component/content/category/93-cdor-corra-administrator-tender-notice.

20 OSFI's draft guideline is available at http://www.osfi-bsif.gc.ca/Eng/fi-if/rg-ro/gdn-ort/gl-ld/Pages/e20_let.aspx.

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