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Rebooting Reference Rates

Introduction

Thank you and good afternoon.

My topic today is interest-rate benchmarks or reference rates and the work under way here in Canada and globally to strengthen them.

Before I plunge in, let me take you back to the 1980s. Aside from the monstrous shoulder pads in my suit jackets, the decade gave us several important innovations. One of the most widely used was Windows. Not the kind you put in your house, but the operating system for your computer. Microsoft released Windows 1.0 in 1985. Most of us are now using Windows 10. Each new version improved functionality and reliability.

The most widely used benchmark—the London Interbank Offered Rate (LIBOR)—was first published in 1986, a year after Microsoft released Windows. It has undergone only one material change in the past 30 years and was certainly never originally designed to support what has become a US$350 trillion market. Now, it is difficult to imagine modern financial markets without derivatives enabled by benchmarks.[1] However, just as Windows 1.0 isn't versatile enough to support new computer programs that have been introduced over the past 30 years, many benchmarks are no longer suitable for the wide array of derivatives markets they support. In addition, the scandals and mistrust related to the

[1] Originally developed to facilitate cross-border lending between banks, LIBOR and other benchmarks offer measures of prevailing interest rates on which standardized contracts can be based. For example, an individual or firm may borrow money today and pay the lender interest based on market interest rates, as measured by a financial benchmark, over the course of the loan.

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manipulation of benchmark rates for the financial benefit of individuals and institutions have made their future use unpalatable.

Not surprisingly, then, these problems with benchmarks have undermined confidence in their reliability and robustness. In response, global authorities are working closely with the private sector to address them.

For many of you in this room, benchmark reform is probably a familiar topic, and you understand the significant role these rates play in the functioning of markets.

But benchmarks, like Windows, are part of our day-to-day lives in one way or another. How they function and how they may change matters a great deal not just to your industry but also to most Canadians. Our financial wealth is connected to benchmarks. For example, exchange-traded funds and mutual funds may invest in products linked to benchmarks. And mortgage costs are based on bank funding costs, which, in turn, include inputs priced off derivatives contracts using benchmarks.

So, reforming this foundational element of our financial infrastructure is critical to both the financial industry and the broader economy. Indeed, we're long overdue for an upgrade.

In my remarks today, I'm going to discuss the work afoot to either validate, enhance or transform various widely used benchmarks or create new ones. I'll start with an overview of the work under way globally and then focus on what is being done in the United States and Canada.

The current state of play

Aside from our primary role in setting monetary policy to meet our inflation target, our mandate at the Bank of Canada includes fostering the stability and efficiency of the financial system.

Benchmarks contribute to the efficient functioning of markets and the stability of the system. Getting them right matters.

The Bank of Canada is playing a role in these changes through our active membership on the Financial Stability Board (FSB), which is leading the global effort to coordinate benchmark reform. Central banks are trusted by market participants and they keep a watchful eye on risks to financial stability, so it's important that we be involved in this work.

To be effective, a benchmark should be robust, reliable and resilient to any market stress. It also needs to be transparent and consistent with the principles for financial benchmarks set out by the International Organization of Securities Commissions (IOSCO).

These principles cover governance, quality and accountability. They stress that the data used to construct benchmarks "should be based on prices, rates, indices or values that have been formed by the competitive forces of supply and demand and be anchored by observable transactions."

The major upgrades that have taken place since 2014 have been guided by the IOSCO principles as well as by improvements to LIBOR and other benchmarks recommended by the FSB.

The FSB is also urging countries to develop new benchmarks based on short-term, risk-free (or near risk-free) observable rates or, where they already exist, to promote more active use of them. Such benchmarks would be a better fit for many derivatives transactions.

Market participants, together with central banks and other authorities, have been actively pursuing this “twin track” approach of strengthening existing benchmarks and developing alternatives.

A risk-free rate would help accomplish two goals. First, it would reduce the dependence on any individual benchmark. Second, it would allow counterparties to select benchmarks that might more closely match the exposures they want, enabling them to better meet the needs of some derivatives markets.

For example, LIBOR is meant to represent a bank’s cost of funding. It can vary according to a number of factors, such as an increase in underlying rates or a deterioration in the creditworthiness of banks—as we saw during the global financial crisis. Imagine a sovereign issuer wanting to take a fixed-rate bond and swap it to a floating-rate liability. Since such an issuer’s creditworthiness does not fluctuate with that of the banking system, using a benchmark with a short-term rate that is not influenced by the creditworthiness of banks would be more appropriate.

Some of the alternatives that have been identified are new, while others are existing rates that are being, or have been, enhanced. In all cases, they are overnight rates. Now, many jurisdictions are exploring whether they need to develop term risk-free benchmarks, say for one- or three-month maturities, for use in mortgages and cash markets and perhaps also for some derivatives. This might help the transition from LIBOR-type benchmarks, where term rates are more widely used than overnight rates. For this to happen, such benchmarks would have to be consistent with the IOSCO standards.

The pace of all this work accelerated last summer thanks to Andrew Bailey, Chief Executive of the United Kingdom’s Financial Conduct Authority (FCA), which regulates LIBOR. He announced that LIBOR might be sustainable only until the end of 2021. After that date, the FCA will not persuade or compel banks to submit LIBOR rates. This means markets need to be ready to transition to alternative benchmarks.

This announcement came as a surprise to those who had not been closely following benchmark developments. Now, roughly a year later, there appears to

be wider market acceptance of what needs to be done, and progress is continuing despite the significant complexities.[2]

Progress in the United States

I'll focus on recent developments in the United States because the US-dollar LIBOR is one of the most widely used benchmarks, and Canadian investors and issuers have material exposure to it.

Consider the sheer size of the market that references USD LIBOR. In 2016, notional contracts priced off USD LIBOR totalled nearly US$200 trillion. The lion's share of that exposure—95 per cent—was in derivatives, primarily interest rate swaps. Another US$8 trillion in cash products was based on USD LIBOR—everything from floating-rate notes to consumer loans.

The work to develop an alternative to LIBOR in the United States is being led by the Alternative Reference Rate Committee (ARRC), which is composed of dealers, asset managers, issuers, exchanges, regulators and official institutions. In April, the Federal Reserve Bank of New York began publishing the Secured Overnight Financing Rate (SOFR), which it concluded is a reliable benchmark for new US-dollar derivatives.

SOFR is an overnight rate based on the Treasury repo market. It covers multiple segments of this market, including tri-party, dealer-to-dealer and centrally cleared bilateral repos. Based on US$800 billion in daily transactions, SOFR adheres closely to the standards set out by IOSCO.

To establish SOFR as a widely used benchmark, an entire ecosystem of products needs to be built around it to encourage trading and generate liquidity in SOFR-related products. This work has begun. Futures contracts for SOFR started trading in May, with all primary dealers pledging to support that market. Trading has been light so far but is expected to increase as more market participants revamp their systems. Some time this summer, overnight index swaps referencing SOFR will begin trading, and they will be accepted for clearing through central counterparties later this year. Of course, greater market adoption will require buy-side involvement—the engagement of asset managers and issuers is critical. The next step may be the identification of a term rate based on SOFR. It is possible that this could be developed through the futures market.

Many trade groups are collaborating in this work, which goes beyond just selecting a new benchmark and developing markets that reference it. For example, fallback provisions are an important transition element. These provisions are a contingency written into financial contracts in case the current benchmark is no longer viable. Fallbacks, or contingency plans, are a feature of many things we consume in everyday life—everything from backup electrical generators in case the power goes out to a guaranteed rental from your

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[2] Industry groups in the United Kingdom, the United States, Switzerland, Japan and the euro area are leading the work.

dealership if your new vehicle needs repairs. Given the uncertainty that LIBOR will continue to exist beyond 2021, it just makes sense to have appropriate fallback provisions written into financial market contracts to allow these products to transition smoothly to new benchmarks.

The International Swaps and Derivatives Association is working on fallback language for derivatives contracts, while ARRC is helping to draft appropriate language for cash products.

Although considerable progress has been made, reform still has a long way to go. And as William Dudley, President of the Federal Reserve Bank of New York, emphasized in a recent speech, we have a compressed time frame to get the work done, so "we need aggressive action to move to a more durable and resilient benchmark regime."

Canada's benchmarks

What about Canada's benchmarks?

In 2014 my colleague Timothy Lane gave a speech on benchmark reform that highlighted the work being done in Canada and the rationale for it proceeding at a different pace from that of our global peers. This is partially due to differences between our main benchmark, the Canadian Dollar Offered Rate (CDOR), and LIBOR.

CDOR is used for derivatives, floating-rate notes and loans. At the end of 2017, it was referenced by more than $13 trillion in financial instruments.

Like LIBOR, CDOR is based on submissions from a panel of banks, but there are major differences between the two.

Just to remind you, LIBOR is a *borrowing* rate based on estimates of the cost of unsecured borrowing transactions between banks. The volume of this borrowing has been declining, which means that LIBOR has become more reliant on the judgment of experts rather than actual transactions.

In contrast, CDOR is a bank *lending* rate and was originally developed by the banks themselves to facilitate the calculation of a benchmark rate for the Banker's Acceptance (BA) market.

CDOR is the rate at which submitters are willing to lend their balance sheet to corporate clients with existing BA lines of credit. These BA lines are being drawn down daily, and BA volumes have been continuously growing.

BAs were first developed in 1962 as an alternative source of short-term funding for corporate borrowers. They are an unconditional order from a corporate client to draw funds against their established line of credit at a Canadian bank to be paid back in full at a fixed date in the future. Now, BAs make up the largest portion of money market instruments issued by non-government entities, accounting for around 25 per cent of the total money market. In 2017, an average of about $76 billion in BAs was outstanding.

A paper we published today on our website reviews the evolution of the BA market.

Since 2014, and in keeping with the IOSCO principles, CDOR has been strengthened in a number of ways. Thomson Reuters has been appointed the administrator and is responsible for the calculation and distribution of the rate. Thomson Reuters has also formed an oversight committee for CDOR to regularly review its definition, scope and methodology. And the Office of the Superintendent of Financial Institutions is now supervising the governance and risk controls surrounding the submission processes at the panel banks.

Although CDOR does not have the same vulnerabilities as LIBOR, it is being used in derivatives markets where the notional value of contracts is a multiple of volumes in the underlying BA markets and where a risk-free rate may better suit the needs of many users.

Fortunately, we already have a risk-free overnight rate. Let me introduce you to CORRA, the Canadian Overnight Repo Rate Average, which has been in place since 1997. It measures the average cost of overnight collateralized funding and is an important reference rate for overnight index swaps, which investors use if they want, for example, to hedge interest rate risk related to Bank of Canada rate decisions.

CORRA is based on actual transactions and is calculated from on-screen trades through interdealer brokers. As with CDOR, CORRA is now administered by Thomson Reuters.

So, in Canada, we have a different starting point and have made further enhancements to comply with the IOSCO principles.

Canadian alternative

Should we be satisfied that this is enough? We don't know the answer to this question yet, but to help work through the issues we recently set up the Canadian Alternative Reference Rate Working Group (CARR).[3]

We know a risk-free rate is a better fit for most derivative-related exposures. Recall the example I mentioned earlier of issuers who want to hedge their interest-rate liabilities from a fixed to a floating rate. If other currencies move primarily to using risk-free rates as their benchmark, specifically term risk-free rates, market participants may want to have the same option in Canadian dollars.

CARR is co-chaired by the Bank and a private sector participant. The group will look at potential enhancements to CORRA, such as whether the rate could be calculated using a wider range of transactions, instead of just those occurring on interdealer broker screens. These enhancements might include dealer-to-client

[3] This initiative came out of our work on the Canadian Fixed-Income Forum, an industry group that the Bank of Canada launched in 2015.

trades. We expect that CARR will have a recommendation to bring forward on enhancements to CORRA by the end of the year.

From the outset, we wanted a diverse group to participate in CARR, people active in the marketplace, with deep expertise. We now have 21 members, some of whom are from banks, pension funds and investment firms. Because of the importance of ancillary products and exchanges where transactions are cleared, the Canadian Derivatives Clearing Corporation, the London Clearing House[4] and the Montréal Exchange are observers. We feel this provides a full perspective on the market. The working group is currently meeting monthly.

In addition, we want and need feedback from a wide range of stakeholders, including various Canadian regulatory authorities. We will likely set up targeted round-table discussions and other subgroups to solicit broader input. We will be exploring a range of topics, from the type of products that use interest-rate benchmarks to the wording of the fallback provisions in Canadian cash products referencing CDOR. All of this will give us a greater appreciation of the impact these changes will have on multiple stakeholders. The demands will be high over the balance of this year and next as we assess appropriate options for Canada while keeping informed of international developments. We will share our findings widely.

If a new risk-free term benchmark is developed, market adoption will be critical. For that to happen, we need pension funds, asset managers, banks and infrastructure providers to use it. Just as new functionality in each Windows upgrade prompts the development of new computer programs, a new benchmark will gain broader acceptance with the development of other ancillary products, such as futures.

Challenges ahead

Let me turn now to the challenges that lie ahead, some of which are related to the global interconnectedness of markets.

Like our economy, where cross-border trade plays an important role, there is a large volume of cross-border financial flows, which are critical to our financial system. So we have to work in lockstep with authorities elsewhere. Many cross-currency products reference benchmarks like LIBOR and CDOR. How quickly can markets for them adapt to using these new benchmarks or curves based on them? And if some benchmarks survive and others don’t, will there need to be common approaches governing the use of interest rate benchmarks in foreign exchange markets?

There are also major issues around transition. Many contracts using benchmarks expire relatively quickly. But some have much longer maturities. For those, the

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[4] The London Clearing House (LCH) operates SwapClear, the dominant global system for centrally clearing over-the-counter interest rate swaps, including many Canadian-dollar interest rate swaps.

transition could be much more complicated because the nature of their exposures might change.

Then there are the challenges we all face within our organizations. Transitioning to new benchmarks means adapting our trading and risk systems and back-office processes. We all know how long systems changes can take. That means starting work relatively soon, or as soon as we know what reference rates we will be using in the future. As we begin to trade in these products, we will need to be patient—liquidity may take some time to build.

Conclusion

The work under way on benchmarks is complex and requires a great deal of coordination among countries, central banks and market participants. The Bank of Canada is committing significant resources to this effort, as are private-sector market participants. The stability of financial markets is an important part of our mandate, and benchmarks play a key role in the efficient functioning of markets.

My goal today is to ensure we're all on the same page in terms of the work on benchmarks here and globally. The Bank of Canada's website has a page where you can follow our work as we post key findings and updates from our meetings. I hope that those of you who are not already involved will participate in some of our subgroups and comment on our work.

You will also want to think about the readiness of your own organizations. The 2021 LIBOR deadline isn't that far away. I realize I am giving you more work to do, but it is important that you keep up with these developments and ensure you are operationally prepared.

Reference rate reform is a necessary and huge global undertaking. Getting this right is critical for maintaining trust in the financial system. While we certainly don't anticipate the need to reform benchmarks as frequently as Windows is updated, we are clearly in need of new versions. Ongoing monitoring by regulators, central banks and market participants alike will ensure that this cornerstone of our financial market infrastructure remains robust and resilient for years to come.