

Regulatory Reporting and Public Transparency in the Secondary Corporate Bond Markets

Final Report



IOSCO

**The Board
OF THE
INTERNATIONAL ORGANIZATION OF SECURITIES COMMISSIONS**

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Foreword

On 14 August 2017, the Board of the International Organization of Securities Commissions (IOSCO) published a Consultation Report, *Regulatory Reporting and Public Transparency in the Secondary Corporate Bond Markets*, with a view to encouraging the public to comment on its analysis and recommendations (Consultation Report). Comments were requested by 16 October 2017.

Sixteen comment letters were received and considered by IOSCO as it prepared this Final Report, *Regulatory Reporting and Public Transparency in the Secondary Corporate Bond Markets* (Final Report). The attached feedback statement in Annex 1 describes and addresses the major comments.

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1. Executive Summary

The IOSCO Board mandated IOSCO Committee 2 on the Regulation of Secondary Markets (C2) to continue its examination of the global corporate bond markets, specifically focusing on issues related to regulatory reporting, transparency and the collection and comparison of data across jurisdictions.

A survey of C2 member jurisdictions provided information with respect to how corporate bonds trade, and the applicable regulatory reporting (information provided only to regulators and not the public) and public transparency regimes. The review and analysis of this data revealed that many member jurisdictions have implemented regimes for both regulatory reporting and public transparency, although the regimes are varied due to differences in the structure of the corporate bond markets in different jurisdictions, including differences related to where and how corporate bonds are traded.

Building on previous C2 studies of corporate bond markets, this report makes a number of recommendations that emphasize the importance of ensuring the availability of corporate bond information, both to regulators in the form of reporting and to the public in the form of transparency requirements.

The report recommends that regulatory authorities should ensure they have access to sufficient information to perform regulatory functions. In addition, consistent with IOSCO principles that promote transparency of trading information, the report recommends that regulatory authorities should consider steps to enhance pre-trade transparency in corporate bond markets and implement regimes that require post-trade transparency.

2. Introduction

Public transparency and accessibility to information are key components of robust capital markets as endorsed by IOSCO in its *Objectives and Principles of Securities Regulation* (IOSCO Principles) Principle 35 “[r]egulation should promote transparency of trading.”¹

As noted in the *IOSCO Methodology for Assessing Implementation of the IOSCO Objectives and Principles of Securities Regulation* (IOSCO Methodology), transparency is generally considered to be “the degree to which information about trading (both pre-trade and post-trade information) is made publicly available.”² The public availability of trading information may contribute to the price discovery process and enable participants in the market to make more informed investment choices and better assess execution quality. This has the potential to draw in additional liquidity from both new and existing participants.

Equally important is regulatory access to robust and complete information to enable regulators to effectively carry out their regulatory functions. IOSCO Principle 36 provides that “[r]egulation should be designed to detect and deter manipulation and other unfair trading practices.” The IOSCO Methodology for Principle 36 states that “market manipulation, misleading conduct, insider trading and other fraudulent or deceptive conduct may distort the price discovery system, distort prices and unfairly disadvantage investors.” Transparency and accessibility of information can assist regulators in monitoring for market abuse or compliance with business conduct requirements.

Over the past decade, information regarding the corporate bond markets has become more accessible, both for regulators and the public. Recognizing the importance of access to information, many jurisdictions have introduced regulatory reporting³ and/or public transparency requirements. This Final Report discusses the importance of both requirements and the approaches taken in different jurisdictions. In addition, IOSCO sets forth seven recommendations for regulators.

¹ See *Objectives and Principles of Securities Regulation* (IOSCO Principles), available at: <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD561.pdf>.

² See *Methodology for Assessing Implementation of the IOSCO Objectives and Principles of Securities Regulation*, p. 236, available at: <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD562.pdf>.

³ The term “reporting” requirements as used in this report generally refers to information provided only to the regulator and not the public. In a few jurisdictions, the reporting and disclosure requirements are very similar.

3. Background

There have been numerous important developments in the corporate bond markets, including the entry of new participants, changing participant roles and the increasing use of technology by market participants. Beginning in 2004, the IOSCO Board has requested C2 to examine a number of aspects of the global corporate bond markets. These examinations have resulted in the publication of two separate reports, one that examined transparency and regulatory reporting and one that gathered data to examine corporate bond liquidity. A brief discussion of these reports is presented below.

A. Corporate Bond Market Transparency and Regulatory Reporting

In 2004, guided by IOSCO Principle 35,⁴ IOSCO published a report entitled *Transparency of Corporate Bond Markets* (2004 Report).⁵ The 2004 Report focused on corporate bond market transparency arrangements, regulatory reporting and other issues including the consolidation of data. The 2004 Report noted that regulators were assessing transparency in corporate bond markets in light of the growing complexity and broader participation by investors, including retail investors. In some jurisdictions, regulators were already beginning to address these issues, particularly with respect to corporate bonds trading over-the-counter (OTC), *i.e.*, bilaterally between a client and a dealer or between two dealers.

The 2004 Report discussed the then-existing transparency arrangements for corporate bond markets, as well as the regulatory regimes that were in place in member jurisdictions. It also noted that regulators in some C2 jurisdictions had introduced varying degrees of consolidation of post-trade data, mainly by requiring consolidated trade publication for trading in all listed bonds or, in a smaller number of cases, by requiring some form of publication of OTC trades. At the time of the 2004 Report, however, there was little consolidation of pre-trade information in most C2 jurisdictions.

The 2004 Report concluded that regulators would need certain additional trading data before specific decisions could be made about the appropriate level of regulatory reporting and transparency in corporate bond markets. The 2004 Report noted that the lack of available information might make it difficult for regulators to accurately assess the state of the markets or whether market participants were in compliance with existing regulations. The 2004 Report also set out “Core Measures” to highlight what regulatory authorities should consider in implementing Principles 35 and 36 and to assist in assessing existing transparency and regulatory reporting regimes. Core Measures 1, 2 and 3 stated that regulators:

- Should obtain information regarding the characteristics of the corporate bond market, which should include types of bonds traded, market size, investor base, credit ratings, and structure of the corporate bond market;

⁴ In 2004, Principle 35 was numbered as Principle 27.

⁵ The 2004 Report is available at: <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD168.pdf>.

- Should implement trade reporting requirements for corporate bonds to the extent permitted by law, taking into account the types of trading methods and regulators' available resources; and
- Should have in place appropriate information gathering and surveillance methods or systems for trading in corporate bond markets to promote market integrity, including best execution and other investor protection requirements and design of any system should take into account the type of trading activity and investor participation in the market.

In addition, the 2004 Report found that there was a general lack of information publicly disseminated or otherwise available to the market for corporate bonds traded OTC. The 2004 Report noted that this particularly affected retail investors as they did not have easy access to information about pricing that would allow them to make informed decisions. Core Measure 4, to address transparency, stated:

- Regulatory authorities should assess the appropriate level of transparency in the market for corporate debt to facilitate price discovery and market integrity. In determining the appropriate level, regulators should take into consideration a number of factors, including market size, frequency of trading of particular or groups of bonds, participants in the market, credit ratings, trading methodology, the potential effects of disclosure on market liquidity and whether the corporate bonds are listed and the existing exchange transparency standards.

Finally, the 2004 Report addressed consolidation of price information, and observed that consolidation of price information can help address issues of market fragmentation by providing investors with easily accessible information regarding prices for bonds trading on more than one venue, or OTC among multiple dealers. Core Measure 5, to address consolidation, stated:

- Where there is transparency of trading data, but such data is not consolidated, regulatory authorities should determine whether there are any impediments to consolidation of data and whether regulatory action is required.

B. Corporate Bond Market Liquidity

Subsequent to the 2004 Report and post-2008 financial crisis, the IOSCO Board tasked C2 with a mandate to examine the liquidity of secondary corporate bond markets, which resulted in the publication of the IOSCO report entitled *Examination of Liquidity of the Secondary Corporate Bond Markets* (Liquidity Report)⁶ in 2017. The Liquidity Report was the result of an evidence-based examination of the state of secondary corporate bond markets from 2004 until approximately 2015. C2 collected data from a broad range of information sources, including regulators, industry participants, and various studies about the corporate bond and other fixed income markets. Where available, one of the main data sources regulators used was the information from the transaction-reporting regime in their jurisdiction. However, in preparing the Liquidity Report, IOSCO faced

⁶ The Liquidity Report is available at: <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD558.pdf>.

several challenges relating to accessing useful data in most member jurisdictions.⁷ In particular, many member jurisdictions do not possess or have access to comprehensive sources of data regarding their corporate bond markets. In addition, IOSCO discovered that some data aspects varied widely amongst jurisdictions, including data scope, quality, consistency, availability, and methods of collection. This diversity made it difficult to “aggregate and compare data across jurisdictions.”

⁷ See Liquidity Report, p. 48 (“One of the primary challenges faced by IOSCO during this assessment was a lack of useful data in most jurisdictions on the trading of corporate bonds in the secondary market in their country.”).

4. Purpose and Scope of the Final Report

A. Purpose

The corporate bond markets continue to be a significant component of global capital markets and are a critical source of financing for economic growth. As has been the case for many classes of securities, corporate bond markets have evolved significantly, especially since the publication of the 2004 Report. A detailed overview and discussion of the markets and how they have changed was included in the Liquidity Report.⁸ Some examples of these important changes include:

- An increase in corporate bond market issuances in most IOSCO member jurisdictions;
- Evidence of a shift from the traditional dealer-based principal model to an agency-based model, with some dealers decreasing their trading presence and capital allocation in certain products;
- An increase in indirect retail participation in the corporate bond market, through mutual funds and exchange-traded products; and
- Technological advancements that have facilitated the emergence of different types of electronic trading platforms designed to provide alternative methods to seek liquidity.

In addition to changes in the characteristics and structure of corporate bond markets, regulators have been examining their regulatory frameworks for reporting and/or public transparency, and some have introduced new requirements.

As part of the continuing work by C2 surveying the corporate bond markets and following up on the findings of the Liquidity Report, the IOSCO Board expressed support for an update of the 2004 Report, and mandated C2 to further explore certain issues examined in the 2004 Report relating to regulatory reporting, transparency and other issues relating to data collection and the comparison of data across jurisdictions.

This Final Report has three primary goals:

1. To examine data reporting requirements regarding corporate bond markets, to highlight the regimes in place and how the data is used to assist regulators in monitoring and analyzing markets, and to discuss the need for clarity and availability of the frameworks and methodologies related to regulatory reporting and transparency in member jurisdictions;
2. To examine the current and proposed regulatory requirements in C2 jurisdictions relating to public pre-trade and post-trade transparency that have developed since the 2004 Report, and the potential impact of transparency on market liquidity and the steps regulators and legislators have taken to address the potential impact; and

⁸ See Liquidity Report under Section III – Overview of the Secondary Corporate Bond Markets.

3. To develop recommendations for regulators that update the 2004 Core Measures to reflect current corporate bond markets and regulatory frameworks.

B. Scope

To prepare the Final Report, C2 surveyed its member jurisdictions about how corporate bonds trade and the applicable regulatory reporting and public transparency regimes. As part of their responses, member jurisdictions were asked to classify their regulations as they apply to the trading of both listed and unlisted corporate bonds traded (i) on an exchange, (ii) on a trading venue other than an exchange, and (iii) OTC. Trading venues other than exchanges include other regulated platforms that support the trading of corporate debt, such as alternative trading systems (ATS), multi-lateral trading facilities (MTF), or, as defined under MiFID II,⁹ organized trading facilities (OTF).¹⁰ For purposes of this report, the term “Trading Venue”, refers collectively to all regulated multilateral trading venues, including exchanges, ATSS, MTFs and OTFs.

Further to the above, it is also useful to set out the meaning of other specific terms used throughout this Final Report.

- Corporate bonds include only ordinary corporate bonds.¹¹
- “Listed” corporate bonds are bonds that are listed or admitted to trading on an exchange. The trading of “listed bonds” may occur on an exchange or on a non-exchange Trading Venue, but trading often occurs OTC.
- “Unlisted” corporate bonds are bonds that are not listed or admitted to trading on an exchange. However, they may be admitted to trading on a non-exchange Trading Venue or be traded OTC.
- “OTC” refers to bilateral trading in listed/unlisted corporate bonds between a client and a dealer, or between dealers that *does not* occur on a Trading Venue (including transactions facilitated through electronic platforms that are not considered Trading Venues).

⁹ The second Markets in Financial Instruments Directive (MiFID II) comprises The Markets in Financial Instruments Directive (2014/65/EU) and the Markets in Financial Instruments Regulation (MiFIR) (600/2014/EU).

¹⁰ An OTF is defined under MiFID II as a multilateral system that brings together buying and selling interests in non-equity financial instruments in a way that results in a contract, and OTFs have transparency obligations that equal those of regulated markets or MTFs.

¹¹ While the rationale for regulatory reporting and transparency applies to many different kinds of financial instruments, the focus of this report is on ordinary corporate bonds. This focus is also in line with IOSCO’s recent more general review of the corporate bond market and consistent with the work done in preparation for the Liquidity Report. In the 2004 Report, the fact-finding mandate also covered convertible bonds for debentures, bonds with embedded options, and asset-backed bonds in addition to ordinary corporate bonds. To be consistent with the recent work undertaken in connection with the Liquidity Report, C2 has limited the definition to ordinary corporate bonds.

It is important to highlight the jurisdictional differences in the application of corporate bond reporting and transparency requirements. In particular, jurisdictions may have different triggers for the applicable reporting and transparency requirements.

For example, in the E.U., most corporate bonds are listed (due to regulatory incentives) although they are traded OTC. The application of reporting and transparency requirements, however, is triggered on the basis of whether a bond is admitted to trading on a Trading Venue. Accordingly, when an OTC trade occurs in a bond that is admitted to trading on any E.U. Trading Venue, the reporting and transparency requirements in E.U. jurisdictions will be applicable under MiFIR.

In the U.S. and Canada, most corporate bonds are unlisted and trade OTC. The reporting and transparency requirements apply to these bonds. Bonds that are listed, however, typically follow the reporting and transparency requirements of the Trading Venue upon which they trade.

Recognizing certain differences in application, this Final Report outlines the jurisdictions' requirements as they apply to listed and unlisted corporate bonds.

5. Availability of Data Regarding Corporate Bond Markets

During the research for and drafting of the Liquidity Report, IOSCO identified a number of issues related to the ability of many IOSCO members to easily access, analyze and compare data across jurisdictions.¹² Specific issues identified include:

- *Disparity of regulatory data available* - As discussed above, the extent of regulatory reporting differs between jurisdictions, especially with respect to certain OTC trading activity. As a result, there may be less information available to monitor the market, analyze trends or develop policy measures on a global basis;
- *Lack of consistency in standards across jurisdictions* - Examples of data inconsistency include differences in the source of information, data characteristics (e.g., the definition of terms underlying that data) and the method of delivery.

The ongoing evolution of global markets and the data challenges observed in the Liquidity Report reinforced IOSCO's view that regulators should have access to timely, accurate and detailed information regarding secondary corporate bond markets. Both access to sufficient and reliable market data and a general understanding of the structure of corporate bond markets can be used for a variety of purposes, including:¹³

- Monitoring for regulatory compliance;
- Conducting market surveillance (real-time or post-trade);
- Facilitating investigations into market abuse and manipulation;
- Developing an audit trail or trend monitoring and analysis;
- Informing the development of regulatory policy; and
- General monitoring of market quality and functioning, including liquidity.

¹² See Liquidity Report, Annex 6.

¹³ These uses are consistent with IOSCO Principle 36, "*Regulation should be designed to detect and deter manipulation and other unfair trading practices.*" See IOSCO Principles, available at: <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD323.pdf> . Without access to continuous, meaningful and complete transactional data the regulatory ability to monitor effectively market activity to detect and address certain activities may be compromised.

Recommendation 1

Regulatory authorities should be able to obtain the information necessary to develop a comprehensive understanding of the corporate bond market in their jurisdiction. This understanding should include the characteristics of the market and the types of bonds traded.

In light of the globalization of the world's securities markets, it is also important for regulators to have an accurate and timely understanding of the trends in and health of the corporate bond markets outside their home jurisdictions. While most corporate bond markets are primarily local (although we note there is significant cross-border activity in corporate bonds between E.U. members), broader economic market interactions and global events span jurisdictions. To assist in this understanding, when appropriate, it is helpful for data relating to corporate bond markets in different countries to be clear and available, even if not identical. Regulators should be clear and open with each other about the underlying methodology for compiling the data and how the reporting elements are defined. With this transparency, a regulator in one country can evaluate whether a given data point in a foreign jurisdiction has the same meaning as the domestic data point. As previously noted, this was challenging during the drafting of the Liquidity Report, where meaningful evaluation across C2 member jurisdictions was difficult given the different understanding (definitions) of terms, differences in data reporting across jurisdictions, and the unavailability of certain data.

While there have been issues with comparability in the past, jurisdictions have taken steps to address these challenges. For example, the E.U.'s implementation of MiFID II/MiFIR requirements build on the preceding MiFID I regime by applying the reporting requirements to a broader range of securities, expanding the details which need to be reported, requiring the use of legal entity identifiers (LEI), confirming reporting channels (including the use of an Approved Reporting Mechanism), focusing on the quality of the data and harmonizing data standards and formats.

Recommendation 2

To facilitate cross-border understanding amongst regulators of corporate bond markets, regulatory authorities should make a clear framework and underlying methodology of regulatory reporting and transparency available.

6. Regulatory Reporting

A. Rationale for Regulatory Reporting

“Regulatory reporting” refers to a framework that requires the provision of data to the responsible regulator.¹⁴ Regulatory reporting regimes require this information to be made available or provided without specific request and on a regular basis. As stated above, reported information may be used by regulators for some purposes, including ensuring regulatory compliance and market integrity, and informing the development of regulatory policy.

Regulatory reporting is also important for the corporate bond market, where trading is fragmented (and in many jurisdictions trading is predominantly OTC), and data may not be centralized or consolidated. Further, to facilitate effective use by regulators, it is also important that there is consistency in the form of the data provided.

B. Regulatory Reporting Regimes

Many jurisdictions have regulatory reporting requirements in place for secondary bond market trading.¹⁵ In all jurisdictions where regulatory reporting is required, the responsible regulator receives the information. Thereafter, regulators may take steps to help ensure the quality and completeness of such data.¹⁶

Tables 1 and 2 set out detailed information regarding the regulatory reporting regimes for C2 member jurisdictions surveyed.

Table 1 illustrates that regulatory reporting requirements in various jurisdictions are common for listed bonds, and usually apply in some form regardless of whether the bond is traded on a Trading Venue or OTC. However, differences exist regarding the entity that sets the reporting requirements for listed bonds.

For unlisted corporate bonds, Table 2 indicates the existence of regulatory reporting requirements is less consistent across jurisdictions, and where applicable, may depend on whether the bonds are admitted to trading and traded on a non-exchange Trading Venue or OTC.

C. Pre-Trade Regulatory Reporting Requirements

Pre-trade regulatory reporting requirements for corporate bonds generally refer to the requirement to provide regulators with information about orders or quotes. In some cases, pre-trade information also includes indications of interest (IOIs). Few jurisdictions require pre-trade information to be

¹⁴ A responsible regulator could be a statutory authority or a self-regulatory organization (SRO), including an exchange.

¹⁵ In some jurisdictions, regulatory data is also used for public transparency purposes and the data, or a subset, may be publicly disseminated to the market.

¹⁶ These steps usually include periodic sampling, validation, and quality checks.

reported to regulators on a regular basis, however, some jurisdictions are able to access relevant pre-trade information (e.g., through a direct request).¹⁷

Although not commonly the case, when corporate bonds are traded on a Trading Venue and pre-trade reporting requirements exist, the requirements typically mirror those for other products traded on the Trading Venue, with a variety of data fields required including price and size of bids and offers.

As noted above, in many jurisdictions corporate bond transactions commonly occur OTC. To facilitate transactions, dealers may provide IOIs or quotes bilaterally, generally in response to requests made by clients. IOIs are not typically made available to regulators on a regular basis, but in some cases are made available to venue participants or disseminated through commercial data vendors.

It is IOSCO's view that the ability to obtain pre-trade information, whether firm or indicative, supports the purposes of regulatory reporting set out above, including assisting regulators to better understand the market, facilitating effective market monitoring, and helping to ensure market integrity and fairness in trading. As a result, it is IOSCO's view that this information should be made available to regulators either on a regular basis or on request.

Recommendation 3

Regulatory authorities should have access, either directly or upon request, to pre-trade information where it is available, relating to corporate bonds. This might include information other than firm bids and offers, such as indications of interest.

D. Post-Trade Regulatory Reporting Requirements

Post-trade regulatory reporting requirements for corporate bonds generally refer to the requirement to provide regulators with transactional or trade data. Regulators continue to recognize the need to have sufficient and reliable information to effectively monitor markets, and as such, many jurisdictions require post-trade regulatory reporting of corporate bonds.

As noted at the outset of this Final Report, there can be jurisdictional differences in what triggers corporate bond reporting requirements and they are especially evident when comparing post-trade regulatory reporting regimes. Where regulators have imposed mandatory regulatory post-trade reporting, the reporting applies to the majority of bonds traded in that jurisdiction.

¹⁷ In the E.U., the new regulatory framework under MiFID II/MiFIR gives regulators access to detailed pre-trade information on orders. Investment firms and the operators of trading venues are required to keep an extensive amount of data relating to all orders and all transactions in financial instruments that the investment firm has carried out or that the trading venue advertised through its systems

Typically, when a bond is traded on a Trading Venue, most jurisdictions require some form of post-trade regulatory reporting, which may be required in real-time or delayed up to one business day after the transaction date.

With regard to post-trade regulatory reporting of OTC activity for corporate bonds, many jurisdictions have at least some requirements. In some jurisdictions, the bond has to be “admitted to trading” on a Trading Venue for reporting to apply for OTC activity, while in others OTC trading in all unlisted corporate bonds is subject to regulatory reporting requirements.

In jurisdictions that require post-trade regulatory reporting, there are differences in the specific information reported and the timing of submission. To avoid duplication, regulators often identify which counterparty to a transaction is responsible for reporting. Transaction data fields may include information relating to:

- price;
- volume;
- venue;
- broker/dealer information;
- identification of the bond (e.g. CUSIP or ISIN);
- buy/sell indicator;
- counter-party identifier;
- capacity (principal or agent); and
- time and date of execution.

IOSCO is of the view that post-trade regulatory reporting is important for regulators to monitor trading of corporate bonds and trends in the markets. Depending on the information required, the data reported may be used to assess liquidity, volumes, counterparties, and other metrics, which may enable regulators to better understand the conditions of the markets, identify risks and consider regulatory policy. As a result, IOSCO recommends that regulatory authorities implement post-trade (transaction) regulatory reporting requirements for corporate bond markets, taking into consideration the specifics of the market. At a minimum, the requirements should include the reporting of information that identifies the bond, the price, the volume, the buy/sell indicator and the timing of execution.

Recommendation 4

Regulatory authorities should implement post-trade (transaction) regulatory reporting requirements for secondary market trading in corporate bonds. Taking into consideration the specifics of the market, these requirements should be calibrated in a way that a high level of reporting is achieved. These requirements should include the reporting of information about the identification of the bond, the price, the volume, the buy/sell indicator and the timing of execution.

7. Transparency in The Secondary Corporate Bond Markets

Generally, there has been an increased trend towards more transparency in the corporate bond markets due to both regulatory requirements and/or commercial initiatives. In many jurisdictions, regulatory requirements have been introduced to facilitate or require public transparency of post-trade information. In addition, intermediaries and Trading Venues often provide information, both pre-trade and post-trade, to commercial data vendors and other third-party information providers who sell the data to market participants. This section of the Final Report discusses the regulatory regimes and the commercial services that provide public transparency regarding the corporate bond markets and the relationship between corporate bond transparency and liquidity.

A. Rationale for Transparency Requirements

Transparency is an important element in capital markets. Principle 35 states that “regulation should promote the transparency of trading” and, in the context of corporate bonds, this principle is acknowledged and implemented in jurisdictions that have introduced regimes mandating transparency of pre-trade or post-trade information.¹⁸ While approaches may differ among jurisdictions, the value of transparency in ensuring efficient markets and investor confidence is widely recognized.

The IOSCO Methodology emphasizes this by stating that market transparency is “generally regarded as central to both the fairness and efficiency of a market and in particular to its liquidity and quality of price formation.” Transparency enables investors to monitor the quality of execution that they receive and compare available prices to determine if the quote received or execution price is fair. It also provides them with information regarding the trading activity of others in the market. Further, promoting price discovery through transparency facilitates efficiency and confidence in the market, which may lead to increased liquidity and trading.

The structure of corporate bond markets poses challenges in facilitating transparency. In jurisdictions where corporate bonds are traded on a Trading Venue, transparency is often more easily facilitated as the transparency requirements applicable to other products traded on the Trading Venue will also apply to bonds. However, as previously indicated, corporate bonds are mostly traded OTC.

B. Transparency and Liquidity

When contemplating requirements related to corporate bond transparency, it is important to consider the argument that increased transparency may, in certain circumstances and certain markets, potentially impact liquidity. The corporate bond markets are markets where dealers often trade on a principal basis in large volumes and trading is often not standardized. Therefore, some believe that excessive or poorly calibrated post-trade transparency requirements may interfere with dealers’ ability to manage execution risk and thus may reduce incentives for dealers to provide

¹⁸ See Objectives and Principles of Securities Regulation (IOSCO Principles), available at: <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD561.pdf>.

liquidity. IOSCO recognized this issue in one of the Core Measures set out in the 2004 Report.¹⁹ A few academic studies have examined this issue, and focused on the impact of the introduction of the Transaction Reporting and Compliance Engine (“TRACE”) by FINRA in the U.S. These studies reached varied conclusions.

A study by Asquith et al.²⁰ considered how mandatory transparency affects the corporate bond market and measured the impact for not only the most liquid bonds that were part of the first phase-in of TRACE, but also less liquid bonds that were subsequently phased into the system. The authors found that the implications of mandating increased transparency are more impactful for less liquid bonds, both in terms of trading activity and price dispersion. Their view was that the reduced price dispersion could allow investors to obtain fairer and more stable prices, but that the trade-off may be less availability of liquidity from dealers. Echoing some aspects of the 2004 Report, the authors support the notion that transparency should not necessarily be mandated to the same degree for all segments of the market and that consideration should be given to unique aspects or factors such as those outlined in Core Measure 4.

A study by Goldstein et al.²¹ assessed the impact of TRACE specific to the liquidity of BBB corporate bonds. The authors found that transparency had either a positive or neutral impact on market liquidity and spreads, and led to lower transaction costs. Similar to Asquith et al., the study noted varying results across different bonds based on frequency of trading activity, but no overall adverse outcomes.

Bessembinder et al.²² leveraged the introduction of TRACE to assess impacts on both trade execution costs and dealer market share for eligible and non-eligible bonds. The authors found a 50% reduction in execution costs for eligible bonds and a 20% reduction for non-eligible bonds. They also concluded that the lower transaction costs allowed small dealers to become more cost competitive and reduced the market share of larger dealers. Lastly, they found no discernable decrease in liquidity across the bonds studied.

¹⁹ See 2004 Report, p. 35-36 (“Regulatory authorities should assess the appropriate level of transparency in the market for corporate debt to facilitate price discovery and market integrity. In determining the appropriate level, regulators should take into consideration a number of factors including:

- the size of the market,
- the frequency of trading of particular bonds or group of bonds,
- participants in the market,
- the credit ratings of the issues,
- the trading methodology,
- the potential effects of any disclosure on the liquidity of the market, and
- whether the bonds are listed and the existing exchange transparency standards.”).

²⁰ Asquith, Paul and Covert, Thomas R. and Pathak, Parag A., *The Effects of Mandatory Transparency in Financial Market Design: Evidence from the Corporate Bond Market* (4 September 2013), available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2320623.

²¹ Goldstein, Michael A. and Hotchkiss, Edith S. and Sirri, Erik R., *Transparency and Liquidity: A Controlled Experiment on Corporate Bonds*. Review of Financial Studies, Vol. 20, No. 2, pp. 235-273, (March 2007), available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=979069.

²² Bessembinder, Hendrik (Hank), Maxwell, William and Venkataraman, Kumar, "Optimal Market Transparency: Evidence from the Initiation of Trade Reporting in Corporate Bonds" (January 6, 2005), available at: <http://www.worldlii.org/int/journals/lsn/abstracts/644624.html>.

Some jurisdictions have implemented transparency regimes that seek to address the potential impact of transparency on liquidity. For example, regulators have:

- Introduced volume caps on post-trade transparency, which provide a ceiling on the trade volumes that are publicly disseminated;
- Delayed post-trade transparency, where the information is not disseminated immediately (for example, T+1, end of day, etc.) based on liquidity of the bonds or size of the trade; and
- Introduced waivers or deferrals for pre- and post-trade transparency requirements, e.g., for instruments that are illiquid or for orders that are large-in-size.

C. Non-Regulatory Provision of Pre-Trade and Post-Trade Information

As indicated, some dealers and Trading Venues voluntarily make information available on a commercial or non-commercial basis to clients, or information vendors that sell the data to the public. This information is often indicative, but can still assist investors or participants to assess the state of the market. While some vendors operate in individual jurisdictions or on a regional level,²³ a number of the larger providers operate in multiple jurisdictions. These entities provide some transparency in corporate bond trading to subscribers who can receive information such as bid and offer prices of corporate bonds, and depth of the order book on multiple venues. They may also provide information on transactions. These commercial services are not regulated in every jurisdiction in which they operate.

In the U.S., market participants are increasingly using “evaluated pricing services”²⁴ when market quotations are not readily available. These services offer model-based pricing information, as well as other data and analytics to subscribers. Such services provide customers with independent valuation, or “evaluated prices” of financial instruments, including fixed income securities, exchange-traded funds, and derivatives. Market participants will often utilize these services to value illiquid or OTC products.

Some Trading Venues that trade corporate bonds provide market participants with an overview of the depth of the market by providing price discovery tools in a wide range of corporate bonds. Some of these venues also provide direct access to sell-side inventory at the beginning of the trading day, and these inventories may be updated throughout the day depending on the liquidity of the corporate bond. In terms of post-trade transparency information, some offer tools to enhance corporate bond transparency by providing information on trade volumes from the previous day, week or month and cover trades on exchanges and OTC.

²³ For instance, Bond Pricing Agency in Malaysia or the Cbonds website in Russia (www.cbonds.ru).

²⁴ Evaluated prices are typically generated by computer-driven valuation models with a wide range of data inputs, including actual trade data and quotes, issuer specific information and, for bonds, specific terms and conditions of the individual corporate bond.

D. Regulatory Public Transparency Requirements

While transparency regimes have been in place for many years in certain jurisdictions, some have been introduced subsequent to the 2004 Report (e.g., in the E.U.).

C2 surveyed member jurisdictions about their current transparency regimes. In particular, the survey focused on, among other things: (i) current pre-trade and post-trade transparency requirements; (ii) the entities that receive and use the data; (iii) how such information is disseminated; (iv) to whom such information is provided; and (v) commercial and other services that may utilize or otherwise distribute such data. This detailed information is provided in Tables 3 through 6.

Below, we provide a high level summary of the regimes in place, the jurisdictional differences for both pre-trade and post-trade transparency, whether exemptions exist and how information is disseminated.

(i) Pre-Trade Transparency Requirements

IOSCO is of the view that pre-trade transparency, when appropriately calibrated, contributes to the price discovery process and supports liquidity and the ability to make informed trading decisions. While transparency is generally valued for these reasons, there are limited pre-trade transparency regimes in place across various jurisdictions with one notable exception under MiFIR in the E.U. In most cases, pre-trade information is disseminated for commercial reasons and/or voluntarily, and not because of regulatory requirements.

Pre-trade information, as indicated earlier, may consist of firm bids and offers and IOIs or non-firm quotes provided by dealers. The details regarding jurisdictional approaches to pre-trade transparency frameworks are in Tables 3 and 4.

Most pre-trade information is provided where bonds are listed and traded on an exchange, as the pre-trade transparency requirements applicable to other products traded on that exchange also may apply to corporate bonds. The requirements may be set by the exchange²⁵ or in some cases by regulation, and the information may be made available to relevant exchange members or data feed subscribers and often through data vendors. The types of information typically includes price, order size, depth of the order book and certain standard product identifiers.

Pre-trade transparency requirements are less common for listed corporate bonds traded on non-exchange venues, but where they exist, may be set by regulation, the regulator or the venue. Few jurisdictions reported having pre-trade transparency requirements for listed corporate bonds traded OTC.

²⁵ For example, in the U.S., a company's corporate bonds are currently permitted to trade on the NYSE bond platform if the company's shares are listed on the exchange. The pre-trade transparency requirements for these bonds are set by exchange rules.

There are only a few jurisdictions that have pre-trade transparency requirements for unlisted corporate bonds, regardless of where they are traded. For unlisted bonds traded on non-exchange Trading Venues, only Canada²⁶ and the E.U. have pre-trade transparency requirements and only the E.U.,²⁷ Japan²⁸ and Korea have limited pre-trade transparency requirements for unlisted bonds traded OTC.

Generally, where requirements exist, jurisdictions treat all corporate bonds the same for pre-trade transparency requirements and do not differentiate based on factors such as credit rating or liquidity. However, some provide for exceptions to applicable pre-trade transparency requirements. As an example, in the E.U., under MiFIR, regulators may waive the requirement for Trading Venues and Systematic Internalisers²⁹ to make pre-trade information public, under certain conditions such as for large orders and financial instruments without a liquid market.

IOSCO views information transparency as an important element of price discovery. Recognizing the decentralized nature of the corporate bond market, IOSCO supports regulators in taking steps to enhance the availability of pre-trade transparency, taking into account the potential impact to liquidity.

Recommendation 5

Regulatory authorities should consider steps to enhance the public availability of appropriate pre-trade information relating to corporate bonds, taking into account the potential impact that pre-trade transparency may have on market liquidity.

(ii) Post-Trade Transparency Requirements

Globally, post-trade transparency requirements have been introduced by jurisdictions on an ongoing basis since 2004, but implementation varies significantly by jurisdiction. The details regarding jurisdictional approaches to post-trade transparency frameworks are in Tables 5 and 6.

Similar to requirements already discussed, jurisdictions' post-trade transparency requirements in place vary depending on whether the bond is listed on an exchange or unlisted but admitted to trading on a Trading Venue, and where the bond is traded (i.e., on a Trading Venue or OTC).

²⁶ There are requirements in place, but they are not implemented.

²⁷ E.U. has pre-trade transparency requirements for bonds admitted to trading on a trading venue and traded by Systematic Internalisers.

²⁸ In Japan, JSDA, an SRO, collects indicative prices on corporate bonds traded OTC from designated dealers and disseminates "Reference Statistical Prices" on a daily basis.

²⁹ Systematic Internalisers (SIs) are investment firms which, on an organized, frequent, systematic and substantial basis, deal on own account by executing client orders outside a regulated market, MTF or OTF, without operating a multilateral system.

Where listed bonds are traded on an exchange, the requirements are generally the same as other instruments traded on the exchange. In addition, listed bonds traded on a Trading Venue or OTC are subject to post-trade transparency requirements in a number of jurisdictions.

Only a few jurisdictions have post-trade transparency requirements for unlisted corporate bonds traded OTC. In most of these jurisdictions, post-trade transparency of OTC trades in unlisted corporate bonds is usually much more limited than in other related requirements, with the exception of TRACE in the U.S. and the Canadian information processor model. In the E.U., investment firms are required to publicly disclose information about the volume, price, and time of OTC transactions in bonds that are admitted to trading on a Trading Venue.

The nature of post-trade transparency requirements of corporate bond transactions also differs significantly among jurisdictions. Where requirements exist, the content of the post-trade data available generally includes the following information:

- identification of the bond;
- price/currency;
- volume; and
- time and date of execution.

Other information disseminated in some jurisdictions includes participant identifiers, detailed intraday price and quantity information such as daily high and low prices, last traded price and accrued interest.

In those jurisdictions with post-trade transparency requirements, information is made available to the public through data feeds (either direct or through data vendors) or a website. While information is typically made available to the public with minimal delay, “real-time” transparency is defined in some jurisdictions as occurring up to 15 minutes after trade execution. In a number of jurisdictions, post-trade information is also provided in real-time to exchange members. Typically, delayed post-trade information is made available free of charge while there is often a fee where the information is made available in real-time.

In the E.U. under MiFID II, the dissemination of post-trade information can be made either through the Trading Venue (i.e., Regulated Market (RM), MTF or OTF) or an Approved Publication Arrangement (APA)³⁰ (when an investment firm executes an OTC trade in a bond that is also traded in a Trading Venue). In Canada, an information processor is responsible for collecting and disseminating post-trade information. There are different information processors for listed corporate bonds traded on a Trading Venue (this information is treated the same as all other products traded on a Trading Venue), and for unlisted corporate bonds.³¹ In the U.S., FINRA, a

³⁰ An Approved Publication Arrangement means a person authorised under the provisions established in MiFID II, to provide the service of publishing trade reports on behalf of investment firms.

³¹ IIROC acts as the information processor for unlisted corporate bonds.

self-regulatory organization, publishes post-trade information for certain corporate bond trades through its TRACE system. The requirements apply to trades that occur on either non-exchange Trading Venues or OTC. Post-trade information about trades that are executed on an exchange is published by the exchange.

Regulators also reported that they often enhance transparency data in order to facilitate its use by market participants and investors. For instance, Canada provides summary information for corporate bonds, as well as other features that allow website visitors to sort and search trades through a number of filters. In the U.S., FINRA disseminates specific transaction-level data and provides summaries of such data at the end of the day.

With respect to exceptions, most jurisdictions permit only limited exceptions to post-trade transparency requirements. They are typically about the size of the transaction or the liquidity of the bond. For example, the U.S., Canada and Japan apply volume caps when disseminating the volume of certain corporate bond transactions in order to mask the actual size of large trades.³² In Canada, information dissemination is also delayed. Elsewhere, Japan only disseminates corporate bond transactions traded OTC that meet certain criteria.³³ In the E.U., based on specific criteria, Trading Venues and investment firms may be permitted to defer the publication of some details of transactions based on the size or type of the transaction.³⁴

In IOSCO's view, the availability of post-trade information is a key component to a robust and efficient market as well as investor confidence. As a result, IOSCO recommends that regulatory authorities implement requirements for post-trade transparency for secondary corporate bond markets taking into consideration the specifics of the market. Regulators should also consider and address accordingly, the potential impact of transparency on less liquid bonds.

Recommendation 6

Regulatory authorities should implement post-trade transparency requirements for secondary market trading in corporate bonds. Taking into consideration the specifics of the market these requirements should be calibrated in a way that a high level of post-trade transparency is achieved. They should also take into account the potential impact that post-trade transparency may have on market liquidity. Post-trade transparency requirements should include at a minimum, the disclosure of information about the identification of the bond, the price, the volume, the buy/sell indicator and the timing of execution.

³² In Canada the volume is capped at \$2 million CAD for investment grade and \$200,000 CAD for non-investment grade and in the U.S. the corresponding caps are \$5 million and \$1 million USD. In Japan, the volume is capped at JPY500 million.

³³ Criteria is determined by JSDA and reviewed periodically. Currently, corporate bonds lower than AA level (by domestic standard) and transactions smaller than JPY100 million are not subject to the transparency requirements.

³⁴ For transactions that: (i) are large in scale (ii) for which there is not a liquid market and (iii) are above a size specific to that bond or class of bond, traded on a trading venue, which would expose liquidity providers to undue risk, and taking into account whether the relevant market participants are retail or wholesale investors.

E. Consolidation of Data

To varying degrees, many regulators have consolidated transparency, such that certain entities that distribute corporate bond data also consolidate that information. The intention is to support further integrating the market and make it easier for market participants to gain access to a consolidated view of available information.

In the U.S., the vast majority of corporate bond data are required to be reported to FINRA's TRACE system. There is a small amount of trading of corporate bonds that occurs on exchanges in the U.S. that is not consolidated with the TRACE data but is readily accessible.

Other jurisdictions consolidate data to some degree, generally based on reporting from dealers. In Australia, trading information for unlisted corporate bonds traded OTC is voluntarily aggregated by a trade association based on data from the main Australian central securities depository for the debt market, but the information is not reviewed or otherwise subject to oversight by the regulator. In Canada, IIROC (an SRO and functioning as the information processor) consolidates information for unlisted corporate bonds traded through dealers. In Japan, reference statistical prices (i.e., pre-trade) are collated and published by JSDA (an SRO) for various corporate bonds traded OTC based on information provided by dealers. JSDA also consolidates trade information (i.e., post-trade) for unlisted corporate bonds traded OTC based on information provided by dealers.

In the E.U., MiFID II contains a framework to introduce a consolidated tape that would also cover non-equity instruments including corporate bonds that are listed or unlisted and traded on a Trading Venue or OTC.³⁵ Consolidated Tape Providers (CTPs) will design systems in accordance with pre-defined parameters, and will be required to consolidate data at a high degree from APAs and trading venues.

These steps taken by various regulators will help in increasing the transparency of pricing information for all market participants in the corporate bond market. Consolidating data before it is published or otherwise disseminated will increase market efficiency and improve price discovery for buyers and sellers of corporate bonds. IOSCO is of the view that where there is transparency of post-trade data relating to corporate bonds, regulatory authorities should facilitate consolidation.

Recommendation 7

Where there is transparency of post-trade data relating to corporate bonds, regulatory authorities should take steps to facilitate the consolidation of that data.

³⁵ These requirements will not be in effect however, until September 2019. There is currently no E.U.-wide requirement for consolidation of data relating to trades in corporate bonds.

8. Conclusion

As discussed in this paper, public transparency and accessibility of information are key components of robust capital markets. This has been recognized in many jurisdictions through the introduction of regulatory reporting and/or public transparency requirements.

IOSCO sets out the following seven recommendations and updates herewith the 2004 Core Measures. This also reflects and responds to developments in the corporate bond markets since the publication of the 2004 Report, as well as the findings of the Liquidity Report.

1. Regulatory authorities should be able to obtain the information necessary to develop a comprehensive understanding of the corporate bond market in their jurisdiction. This understanding should include the characteristics of the market and the types of bonds traded.
2. To facilitate cross-border understanding amongst regulators of corporate bond markets, regulatory authorities should make a clear framework and underlying methodology of regulatory reporting and transparency available.
3. Regulatory authorities should have access, either directly or upon request, to pre-trade information where it is available, relating to corporate bonds. This might include information other than firm bids and offers, such as indications of interest.
4. Regulatory authorities should implement post-trade (transaction) regulatory reporting requirements for secondary market trading in corporate bonds. Taking into consideration the specifics of the market, these requirements should be calibrated in a way that a high level of reporting is achieved. These requirements should include the reporting of information about the identification of the bond, the price, the volume, the buy/sell indicator and the timing of execution.
5. Regulatory authorities should consider steps to enhance the public availability of appropriate pre-trade information relating to corporate bonds, taking into account the potential impact that pre-trade transparency may have on market liquidity.
6. Regulatory authorities should implement post-trade transparency requirements for secondary market trading in corporate bonds. Taking into consideration the specifics of the market these requirements should be calibrated in a way that a high level of post-trade transparency is achieved. They should also take into account the potential impact that post-trade transparency may have on market liquidity. Post-trade transparency requirements should include at a minimum, the disclosure of information about the identification of the bond, the price, the volume, the buy/sell indicator and the timing of execution.
7. Where there is transparency of post-trade data relating to corporate bonds, regulatory authorities should take steps to facilitate the consolidation of that data.

Appendix A - Feedback Statement on the Public Comments Received by the IOSCO Board on the Consultation Report Regulatory Reporting and Public Transparency in the Secondary Corporate Bond Markets

A. Introduction

Comments to the Consultation Report were submitted by the following persons or organizations to the IOSCO Board.

Alicia Burgueño Sepúlveda

Association française des marchés financiers (AMAFI)

BlackRock

Canadian Foundation for Advancement of Investor Rights (FAIR)

European Fund and Asset Management Association (EFAMA)

German Insurance Association (GDV)

Global Financial Markets Association (GFMA)

Global Legal Entity Identifier Foundation (GLEIF)

ICE Data Services

ICI Global

IHS Markit

International Banking Federation (IBFED)

International Capital Market Association (ICMA)

International Council of Securities Associations (ICSA)

Pacific Investment Management Company LLC (PIMCO)

ViableMkts

IOSCO is grateful for the responses and these comments³⁶ were considered by IOSCO in preparing the Final Report. This feedback statement seeks to summarize and respond to comments received.

³⁶ As published at: http://www.iosco.org/publications/?subsection=public_comment_letters

Overall, there was general support for certain recommendations made in the Consultation Report, most specifically recommendations that regulatory authorities ensure they have an understanding of corporate bond markets. This includes ensuring both an understanding of the characteristics of their local market, as well as ensuring that clear information regarding the specific regulatory framework in place in their jurisdiction is available to other regulators, in order to enhance cross-jurisdictional understanding.

B. Summary of Comments and Feedback

(i) Regulatory Understanding of Corporate Bond Markets

As briefly described above, the Consultation Report set out two recommendations that serve to ensure that regulators have an understanding of corporate bond markets (recommendations 1 and 2). These recommendations were generally supported in the comments received; however, one commenter expressed confidence that regulators already have access to information, both with respect to their local jurisdiction, as well as in relation to the regulatory frameworks in place in other jurisdictions.

Feedback

Although IOSCO agrees that such information may be available in certain jurisdictions, the challenges faced by IOSCO in preparing the Liquidity Report illustrate that the information may be inconsistent both in terms of availability and content. The Liquidity Report noted that “[w]hile conducting this study, IOSCO learned that many member jurisdictions do not possess or have access to comprehensive sources of data regarding their corporate bond markets although there are notable exceptions. Moreover, the information available to regulators varies widely, particularly with respect to its granularity, methodological basis, timeliness and accessibility.”³⁷ For this reason, the Final Report maintains what IOSCO believes are important recommendations for regulators.

(ii) Pre-Trade Regulatory Reporting

The Consultation Report recommended that regulatory authorities should have access to pre-trade information relating to corporate bonds where it is available, either directly or on request. While some commenters were supportive of the recommendation, others expressed concern about potential impacts on liquidity. Commenters also suggested other considerations including limiting some types of pre-trade information to be reported and standardizing reporting frameworks across jurisdictions. One commenter noted that regulators should take necessary steps for data security to ensure the privacy and/or confidentiality of the data provided.

Feedback

IOSCO recognizes the concerns raised about the potential impacts on liquidity in relation to public transparency, and previously acknowledged these potential impacts in the Liquidity Report. However, IOSCO does not believe the same potential impacts exist with respect to regulatory reporting, as this information is non-public and used only by regulators. One commenter also

³⁷ See Liquidity Report, pg. 3

reflected this view and noted that considerations related to regulatory reporting differ materially from those related to the public dissemination of the same data. IOSCO maintains the view that pre-trade regulatory reporting can serve important purposes, most notably to facilitate effective market monitoring by regulators and to help ensure market integrity and fairness in trading.

The recommendation set out in the Consultation Report suggests that the information contained in pre-trade regulatory reporting might include information other than firm bids and offers, such as “indications of interest”. Two commenters suggested that the term “indications of interest” should be revised to only include pre-trade information in relation to firm or actionable quotations. Suggested rationale for making this change in language included to ensure clarity and relevance in the information provided, and to avoid undue record-keeping requirements placed on market participants.

IOSCO acknowledges that “indications of interest” may not represent firm, tradable quotations, but still believes that these indications, where being made available to certain market participants, can also provide value to regulators in performing regulatory functions. The language used in the recommendation remains unchanged in the Final Report, and IOSCO notes that there is flexibility for regulatory authorities in each jurisdiction to determine whether they can benefit from receiving indicative pricing information. Further, the recommendation notes that the provision of pre-trade information to regulators could be required only upon request, which provides the flexibility for customization of the information received, as deemed appropriate.

IOSCO acknowledges the suggestion to standardize reporting frameworks, and agrees that this is a laudable goal that would ease reporting burdens for market participants that are subject to multiple reporting regimes. However, standardizing reporting frameworks is an initiative that would take significant time to coordinate, and may be currently impractical to include as part of the recommendation in the Final Report.

Lastly, IOSCO recognizes the importance of data privacy and confidentiality, and appreciates the comments received in this regard. IOSCO believes this is a principle that has overarching relevance in all areas that involve sensitive data, and is not a concern that is exclusive to regulatory reporting of corporate bond data. Accordingly, the text of the Final Report has not been amended to specifically note the importance of ensuring the privacy and confidentiality of data required under regulatory reporting regimes.

(iii) Post-Trade Regulatory Reporting

The Consultation Report recommended that regulatory authorities implement post-trade (transaction) reporting requirements for corporate bonds, and that the requirements should be tailored in a way that seeks to achieve a high level of reporting while considering the specifics of the corporate bond market in each jurisdiction. There was generally greater support for post-trade regulatory reporting as compared to the recommendation related to pre-trade regulatory reporting. Commenters made a number of suggestions, some of which echoed comments received in relation to pre-trade regulatory reporting, and included standardized reporting frameworks, restricting data requirements to only relevant information, ensuring data privacy and confidentiality, and providing

greater clarity on which counterparty to a trade is responsible for transaction reporting (with the view that dual reporting should be avoided).

Feedback

A number of commenters suggested that IOSCO recommend limiting post-trade regulatory reporting requirements to ensure that only meaningful or relevant information is required to be reported, and to standardize reporting frameworks across jurisdictions. As previously noted, IOSCO believes standardized reporting to be a commendable goal, but impractical in the short-term. As it relates to suggestions to restrict the required data to relevant information, IOSCO agrees in principle, but is of the view that the recommendation should be structured to provide maximum flexibility for individual jurisdictions to determine what information is relevant or important for regulatory objectives in their local market.

One commenter disagreed with the recommendation that the “*requirements should be calibrated in a way that a high level of reporting is achieved*”, and suggested that the intended meaning of “high” is unclear. IOSCO notes that the recommendation is designed to encourage regulators to consider the specific needs of their individual jurisdiction when determining what level of post-trade regulatory reporting is appropriate. The goal is to maximize the utility of the information required under reporting frameworks, but in a way that is tailored to account for the characteristics of the local market. In order to avoid overly prescriptive recommendations, IOSCO has not modified the recommendation of the Final Report in this regard.

Lastly, IOSCO acknowledges the comments received that sought greater clarity on which counterparty to a trade is responsible for transaction reporting. Regulators often identify which counterparty to a transaction is responsible for reporting, and although the recommendation remains unchanged in the Final Report, the text of the Final Report has been amended to convey this point.

(iv) Pre-Trade Transparency of Information

The Consultation Report recommended that regulatory authorities should consider steps to enhance the public availability of appropriate pre-trade information relating to corporate bonds. The comments received generally encouraged caution, and raised a number of concerns primarily in relation to the potential impact of pre-trade transparency on liquidity, and the ability for market participants to achieve best execution for clients. One commenter noted that these concerns are especially relevant as the corporate bond markets remain largely dealer-driven and rely on intermediaries to provide liquidity. Although this may change as the markets evolve, the commenter urged regulators to consider current market characteristics. Another commenter noted that specific to liquid bonds, pre-trade (and post-trade) transparency could enhance liquidity and decrease trading and valuation risk for market participants.

Feedback

IOSCO acknowledges concerns about potential impacts to liquidity and understands the rationale behind the cautionary feedback received. IOSCO notes that this particular issue is directly

identified in the recommendation put forth in the Consultation Report. Regulatory authorities should consider what level of public pre-trade information is appropriate in their jurisdiction, and contemplate how best to implement requirements in a way that accounts for the types of concerns raised. Certain commenters recommended focusing only on the most liquid bonds, or to introduce waivers designed to reduce potential negative impacts on corporate bond liquidity. In implementing pre-trade transparency requirements, regulatory authorities may determine that the suggested measures are appropriate for the characteristics of their market, and IOSCO is of the view that the Consultation Report is clear in recommending that these considerations be taken into account. The recommendation is unchanged in the Final Report.

(v) Post-Trade Transparency of Information

The Consultation Report recommended that regulatory authorities should implement post-trade transparency requirements in a way that aims to achieve a high level of transparency but also considers the specifics of the market. Although this was more broadly supported than the recommendation in relation to pre-trade transparency, commenters again raised caution and identified a number of concerns about implementation, and the potential impacts on corporate bond liquidity. Some commenters specifically pointed to the potential impact that post-trade transparency would have on intermediaries that provide liquidity and subsequently need to manage or hedge risks. Many believed that appropriate calibration of the requirements was vital, and common suggestions to help to alleviate concerns included the imposition of delays in dissemination, volume caps, waivers for large transactions and restricting the application of the requirements to liquid bonds.

Feedback

IOSCO again recognizes the concerns raised, and thanks commenters for the helpful depth of detail included in the suggestions put forth. As with pre-trade transparency, IOSCO is of the view that the recommendation in the Consultation Paper directly reflects the concerns received in the comment letters, and notes that it is specifically recommended that post-trade transparency regimes should account for the specifics of individual markets, and should consider potential impacts on liquidity. In calibrating the requirements, regulatory authorities may determine that some or all of the specific suggestions provided by commenters are appropriate based on the characteristics of their individual market. IOSCO is of the view that the recommendation allows for flexibility but clearly encourages regulators to reflect on concerns related to liquidity. The recommendation is unchanged in the Final Report.

(vi) Consolidation of Post-Trade Data

The Consultation Report recommends that where there is transparency of post-trade data related to corporate bonds, that regulatory authorities should take steps to facilitate the consolidation of that data. This recommendation was generally supported in the comments received.

Feedback

The recommendation is unchanged in the Final Report and IOSCO acknowledges and thanks commenters for the feedback.

Table 1 - Regulatory Reporting Requirements for Listed Bonds

Country	LISTED CORPORATE BONDS TRADED ON AN EXCHANGE			LISTED CORPORATE BONDS TRADED ON A TRADING VENUE OTHER THAN AN EXCHANGE (E.G. ATS, MTF OR OTF)			LISTED CORPORATE BONDS TRADED OTC		
	Required by	Reporting to Regulatory Authority?	Monitoring and Surveillance (by whom and how)	Required by	Reporting to Regulatory Authority?	Monitoring and Surveillance (by whom and how)	Required by	Reporting to Regulatory Authority?	Monitoring and Surveillance (by whom and how)
Australia	Statutory regulator	Trades on exchanges are reported to statutory regulator in real-time.	Statutory regulator in real-time	Australia does not have an alternative market license framework. Dark pools operate under exchange markets so they are reported in real-time through an exchange to the regulator			Trades done away from exchange order books operate under exchange markets so trades are captured and reported in real-time through an exchange to the regulator		
Brazil	Statutory regulator	Trades are reported to the statutory regulator daily. Statutory regulator also has access to the exchange trading screens and monitor trades in real-time	Statutory regulator monitors trades in real-time and T+2 analysis (when full reporting is sent, including investors ID)	Statutory regulator	Trades are daily reported to the statutory regulator on a daily basis	Statutory regulator in T+1 analysis	Statutory regulator	Trades are daily reported to the statutory regulator	Statutory regulator in T+1 analysis
Canada	The regulation services provider for exchanges on behalf of the exchanges, IIROC, a self-regulatory organization (SRO).	Orders and trades on an exchange reported to IIROC in real time	Statutory regulator and IIROC on behalf of the exchanges in real-time and T+1 analysis	The regulation services provider for ATSS, IIROC	Orders and trades reported to IIROC in real time. Exchanges must also file quarterly summary information with the statutory regulator	Statutory regulator and IIROC for the ATSS, in real-time and T+1 analysis	Listed corporate bonds must trade on a marketplace, except in narrow circumstances. In these cases, reporting to a marketplace is generally required by IIROC	Where required, reporting is done to a marketplace on a delayed basis	None
EU Jurisdictions (MiFID I) ³⁸	EU regulatory framework (MiFID I and	Trades are reported to the statutory regulator in T+1	Regulatory authorities	EU regulatory framework (MiFID I and	Trades are reported to the statutory regulator in T+1	Regulatory authorities	EU regulatory framework (MiFID I and	Trades are reported to the statutory regulator in T+1	Regulatory authorities

³⁸ MiFID I is highlighted simply for the purposes of illustrating changes between the two frameworks. This Final Report generally focuses on MiFID II/MiFIR

Country	LISTED CORPORATE BONDS TRADED ON AN EXCHANGE			LISTED CORPORATE BONDS TRADED ON A TRADING VENUE OTHER THAN AN EXCHANGE (E.G. ATS, MTF OR OTF)			LISTED CORPORATE BONDS TRADED OTC		
	Required by	Reporting to Regulatory Authority?	Monitoring and Surveillance (by whom and how)	Required by	Reporting to Regulatory Authority?	Monitoring and Surveillance (by whom and how)	Required by	Reporting to Regulatory Authority?	Monitoring and Surveillance (by whom and how)
	Regulation n. 1287/2006/UE)			Regulation n. 1287/2006/UE)			Regulation n. 1287/2006/UE)		
EU Jurisdictions (MiFID II)	EU regulatory framework (MiFID II/MIFIR)	Trades are reported to the statutory regulator in T+1	Regulatory authorities	EU regulatory framework (MiFID II/MIFIR)	Trades are reported to the statutory regulator in T+1	Regulatory authorities	EU regulatory framework (MiFID II/MIFIR)	Trades are reported to the statutory regulator in T+1	Regulatory authorities
Hong Kong (SEHK – Stock Exchange of Hong Kong, and SFC – Securities and Futures Commission)	SEHK (any rules including the reporting rules need to be approved by the SFC)	Trades on exchange are reported to SEHK in real-time	On-exchanges trades are reported to SEHK which then feed them to the two separate SMARTS systems of the SEHK and SFC in real-time. Both SEHK and SFC will conduct their own surveillance function on these trades using the alerts built on the SMARTS systems to identify suspicious trading activities and market misconduct	SFC	Trades conducted on ATSS are reported on aggregate basis to the SFC every month	SFC monitors the aggregated trades based on the monthly reports to ensure compliance with the authorisation conditions. Will contact ATS' home regulator for investigatory assistance if necessary	SEHK (only applicable to SEHK Exchange Participants)	SEHK Exchange Participants are required to report non-ATS off-exchange trades to SEHK within 15 minutes on a trade-by-trade basis	These off-exchanges trades are reported to SEHK, which, similar to on-exchange trades, then feed them to the two separate SMARTS systems of the SEHK and SFC immediately. Both SEHK and SFC will conduct their own surveillance function on these trades using the alerts built on the SMARTS systems to identify suspicious trading activities and market misconduct
Japan	FSA/Financial Instruments and Exchange Act	Market information shall be reported to FSA every business day	Exchange and SESC as necessary	FSA/Financial Instruments and Exchange Act	Market information shall be reported to FSA on a monthly basis	PTS operators and SESC as necessary	JSDA (SRO)	JSDA (SRO)	JSDA (SRO) monitors as necessary

Country	LISTED CORPORATE BONDS TRADED ON AN EXCHANGE			LISTED CORPORATE BONDS TRADED ON A TRADING VENUE OTHER THAN AN EXCHANGE (E.G. ATS, MTF OR OTF)			LISTED CORPORATE BONDS TRADED OTC		
	Required by	Reporting to Regulatory Authority?	Monitoring and Surveillance (by whom and how)	Required by	Reporting to Regulatory Authority?	Monitoring and Surveillance (by whom and how)	Required by	Reporting to Regulatory Authority?	Monitoring and Surveillance (by whom and how)
Korea (KRX - Korea Exchange FSC - Financial Services Commission MOK - Market Oversight Commission KOFIA- Korea Financial Investment Association)	KRX (any rules including the reporting rules need to be approved by the FSC)	Trades on exchange are reported to KRX in real-time.	MOK of KRX conduct surveillance function to enhance the reliability and transparency of KRX market using EXTURE+ Surveillance System which is a comprehensive and consolidated system	N/A	N/A	N/A	KOFIA(SRO)	OTC trades are reported to KOFIA(SRO) within 15 minutes	KOFIA(SRO) monitors as necessary
Malaysia	Exchange	Regulatory authorities have access to Bursa's ETP system for real-time trade data	Regulatory authorities and exchange	N/A	N/A	N/A	Regulatory authorities and exchange	Regulatory authorities have access to Exchange's ETP system for real-time trade data	Regulatory authorities and Exchange
Mexico	N/A	N/A	N/A	Banco de Mexico (Central Bank)	Banco de Mexico (Central Bank)	Banco de Mexico (Central Bank)	Banco de Mexico (Central Bank)	Banco de Mexico (Central Bank)	Banco de Mexico (Central Bank)
Russia	Regulator, Bank of Russia	Real-time and at the end of the day all additional information about trades	Regulator, Bank of Russia	N/A	N/A	N/A	Regulator, Bank of Russia	Reported to exchange	Regulator, Bank of Russia
Saudi Arabia	Regulatory	Real -time	Regulatory	N/A	N/A	N/A	N/A	N/A	N/A
Singapore	Exchange (any rules including the reporting rules need to be approved by the MAS)	Real-time	Exchange and regulatory authority	N/A	N/A	Trading venue	Exchange (any rules including the reporting rules need to be approved by MAS)	Reported to exchange	Exchange and regulatory authority
Switzerland	Stock Exchange Act / Ordinance (SESTA /	SIX Swiss Exchange Ltd Reporting Office	Self-regulation organisation (SIX Exchange	Stock Exchange Act / Ordinance (SESTA /	SIX Swiss Exchange Ltd Reporting Office	Self-regulation organisation (SIX Exchange	Stock Exchange Act / Ordinance (SESTA /	SIX Swiss Exchange Ltd Reporting Office	Self-regulation organisation (SIX Exchange

Country	LISTED CORPORATE BONDS TRADED ON AN EXCHANGE			LISTED CORPORATE BONDS TRADED ON A TRADING VENUE OTHER THAN AN EXCHANGE (E.G. ATS, MTF OR OTF)			LISTED CORPORATE BONDS TRADED OTC		
	Required by	Reporting to Regulatory Authority?	Monitoring and Surveillance (by whom and how)	Required by	Reporting to Regulatory Authority?	Monitoring and Surveillance (by whom and how)	Required by	Reporting to Regulatory Authority?	Monitoring and Surveillance (by whom and how)
	SESTO) and Financial Market Infrastructure Act / Ordinance (FMIA / FMIO)	(based on Art. 5 FMIO-FINMA)	Regulation), regulatory audit	SESTO) and Financial Market Infrastructure Act / Ordinance (FMIA / FMIO)	(based on Art. 5 FMIO-FINMA)	Regulation), regulatory audit	SESTO) and Financial Market Infrastructure Act / Ordinance (FMIA / FMIO)	(based on Art. 5 FMIO-FINMA)	Regulation), regulatory audit
Turkey	Regulatory authorities (CMB)	Trades on exchange are reported to CMB in real time	Regulatory authority (CMB) and exchange (Borsa İstanbul). (Unusual price movements and traded values in the debt securities market at BİST are monitored and reported through the electronic surveillance system)	N/A	N/A	N/A	Regulatory authorities (CMB) and exchange (BİST)	OTC trading of listed bonds are reported to CMB periodically (weekly, monthly, yearly)	OTC trades are monitored by BİST and reported to CMB periodically
United States	Exchange (currently NYSE Bonds is the only US exchange that trades corporate bonds)	Trades on exchange are reported to the exchange	Subject to exchange rules and surveillance mechanisms	Self-regulatory organization (FINRA)	Trades are reported to FINRA's TRACE as soon as practicable but no later than within 15 minutes of the transaction	ATs and broker-dealers trading corporate bonds are subject to FINRA rules and oversight	Self-regulatory organization (FINRA)	Trades are reported to FINRA's TRACE as soon as practicable but no later than within 15 minutes of the transaction	ATs and broker-dealers trading corporate bonds are subject to FINRA rules and oversight

Table 2 - Regulatory Reporting Requirements for Unlisted Bonds

Country	UNLISTED CORPORATE BONDS TRADED ON AN EXCHANGE	UNLISTED CORPORATE BONDS TRADED ON A TRADING VENUE OTHER THAN AN EXCHANGE (E.G. ATS, MTF OR OTF)			UNLISTED CORPORATE BONDS TRADED OTC		
		Required by	Reporting to Regulatory Authority?	Monitoring and Surveillance (by whom and how)	Required by	Reporting to Regulatory Authority?	Monitoring and Surveillance (by whom and how)
Australia	N/A	Statutory regulator	Trade volumes of Australian participants are aggregated and reported to the statutory regulator on an annual basis	Market operator	Statutory regulator (very small role)	N/A, but trade association (AFMA) calculates aggregated annual turnover data relating to unlisted corporate bonds traded OTC	N/A
Brazil	N/A	Statutory regulator	Trades are daily reported to the statutory regulator	Statutory regulator in T+1 analysis	Statutory regulator	Trades are daily reported to the statutory regulator	Statutory regulator in T+1 analysis
Canada	N/A	Statutory regulator and IIROC	Trades are reported to IIROC on a T+1 basis. ATSS must file quarterly summary information with the statutory regulator	IIROC on a T+1 basis and the statutory regulator	Statutory regulator and IIROC	Trades are reported to IIROC on T+1 basis	IIROC on a T+1 basis and statutory regulator
EU Jurisdictions (MiFID I)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EU Jurisdictions (MiFID II)	N/A	EU regulatory framework (MiFID II/MiFIR)	Trades are reported to the statutory regulator in T+1	Regulatory authorities	EU regulatory framework (MiFID II/MiFIR) applicable, among others, in case of financial instrument admitted to trading on trading venues (RMs, MTFs and OTFs)	Trades are reported to the statutory regulator in T+1	Regulatory authorities
Hong Kong (SEHK – Stock Exchange of Hong Kong, and SFC – Securities and Futures Commission)	N/A	SFC	Trades conducted on ATS are reported on aggregate basis to the SFC every month	SFC monitors the aggregated trades based on the monthly reports to ensure compliance with the authorisation conditions. We will contact ATS' home regulator for investigatory assistance if necessary	N/A	N/A	N/A

Country	UNLISTED CORPORATE BONDS TRADED ON AN EXCHANGE	UNLISTED CORPORATE BONDS TRADED ON A TRADING VENUE OTHER THAN AN EXCHANGE (E.G. ATS, MTF OR OTF)			UNLISTED CORPORATE BONDS TRADED OTC		
		Required by	Reporting to Regulatory Authority?	Monitoring and Surveillance (by whom and how)	Required by	Reporting to Regulatory Authority?	Monitoring and Surveillance (by whom and how)
Japan	N/A. Unlisted corporate bonds are not traded on an exchange	FSA /Financial Instruments and Exchange Act	Market information shall be reported to FSA on a monthly basis	PTS operators and SESC as necessary	JSDA (SRO)	JSDA (SRO)	JSDA (SRO) monitors as necessary
Korea	N/A	N/A	N/A	N/A	KOFIA (SRO)	OTC trades are reported to KOFIA(SRO) within 15 minutes	KOFIA(SRO) monitors as necessary
Malaysia	N/A	Regulatory authorities and Exchange	Yes. Regulatory authorities have access to Exchange's ETP system for real-time trade data	Regulatory authorities and Exchange	Regulatory authorities and Exchange	Yes. Regulatory authorities have access to Exchange's ETP system for real-time trade data	Regulatory authorities and Exchange
Mexico	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Russia	N/A	N/A	N/A	N/A	Regulator, Bank of Russia (only for supervised entities)	Trades are reported to Bank of Russia	Regulator, Bank of Russia
Saudi Arabia	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Singapore	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Switzerland	N/A	Stock Exchange Act / Ordinance (SESTA / SESTO) and Financial Market Infrastructure Act / Ordinance (FMIA / FMIO)	SIX Swiss Exchange Ltd Reporting Office (based on Art. 5 FMIO-FINMA)	Self-regulation organisation (SIX Exchange Regulation), regulatory audit	N/A (unless traded on a trading venue)	N/A (unless traded on a trading venue)	N/A (unless traded on a trading venue)
Turkey	N/A	N/A	N/A	N/A	N/A	N/A	N/A
United States	N/A; unlisted corporate bonds do not currently trade on an exchange	Self-regulatory organization (FINRA)	Trades are reported to FINRA's TRACE as soon as practicable but no later than within 15 minutes of the transaction	ATSs and broker-dealers trading corporate bonds are subject to FINRA rules and oversight	Self-regulatory organization (FINRA)	Trades are reported to FINRA's TRACE as soon as practicable but no later than within 15 minutes of the transaction	ATSs and broker-dealers trading corporate bonds are subject to FINRA rules and oversight

Table 3 - Pre-Trade Transparency for Listed Bonds

Country	LISTED CORPORATE BONDS TRADED ON AN EXCHANGE					LISTED CORPORATE BONDS TRADED ON A VENUE OTHER THAN AN EXCHANGE (E.G. ATS, MTF OR OTF)					LISTED CORPORATE BONDS TRADED OTC
	Pre-trade information disseminated to exchange users about trades on the exchange		Pre-trade information disseminated to the public about trades on the exchange			Pre-trade information disseminated to users of the trading venue		Pre-trade information disseminated to the public			
	When	Set by	When	Set by	Disseminated by	When	Set by	When	Set by	Disseminated by	Dissemination
Australia	Real-time	Exchange	Real-time (fee) if otherwise displayed (i.e. not a dark order on the exchange)	Exchange	Exchanges and information vendors	No alternative market license framework.					Trades done away from exchange order books operate under exchange markets
Brazil	Real-time	Exchange	Real-time (fee), and 15 minute delay (free)	Regulator and the exchange	Exchange and information vendors	N/A	Regulator and the trading venue (CETIP)	N/A	Regulator and the trading venue (CETIP)	Trading venue (CETIP) website	The same dissemination regime applied to trading venues other than the exchange because CETIP, besides being a trading venue is also a trade repository
Canada	Real-time, unless dark order on the exchange	Exchange	Real-time (fee), if otherwise displayed (i.e. not a dark order on the exchange)	Statutory regulator	Exchanges, Information Processor for exchange-traded securities (TMX IP) and information vendors	Real-time, unless dark order on the trading venue	Statutory regulator	Real-time (fee), if otherwise displayed	Statutory regulator	Information processor for exchange-traded securities (TMX IP) and information vendors	N/A
EU Jurisdictions (MiFID I)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EU Jurisdictions (MiFID II/MiFIR)	On a continuous basis during normal trading hours.	EU regulatory framework (MIFIR)	On a continuous basis during normal trading hours.	EU regulatory framework (MIFIR)	Trading venues	On a continuous basis during normal trading hours.	EU regulatory framework (MIFIR)	On a continuous basis during normal trading hours.	EU regulatory framework (MIFIR)	Trading venues	Investment firms are required to make public firm quotes in respect of bonds traded on a trading venue for which they are systematic internalisers and for which there is a liquid market, subject to specific conditions.
Hong Kong	Real-time	SEHK	Real-time (fee), and 15 minute delay (free)	SEHK	SEHK and information vendors	N/A	SEHK	N/A	SEHK	N/A	Off-exchange trades reported to SEHK will be treated like on-exchange trades.

Country	LISTED CORPORATE BONDS TRADED ON AN EXCHANGE					LISTED CORPORATE BONDS TRADED ON A VENUE OTHER THAN AN EXCHANGE (E.G. ATS, MTF OR OTF)					LISTED CORPORATE BONDS TRADED OTC
	Pre-trade information disseminated to exchange users about trades on the exchange		Pre-trade information disseminated to the public about trades on the exchange			Pre-trade information disseminated to users of the trading venue		Pre-trade information disseminated to the public			
	When	Set by	When	Set by	Disseminated by	When	Set by	When	Set by	Disseminated by	Dissemination
Japan	Real-time	FSA/Financial Instruments and Exchange Act	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	JSDA (SRO) disseminates "Reference Statistical Prices" calculated based on indicative prices submitted by designated dealers through JSDA's website and information vendors every business day.
Korea	Real-time	Exchange (KRX)	Real-time for free of charge	Regulatory authorities	Exchange and information vendors	N/A	N/A	N/A	N/A	N/A	OTC trade information reported to KOIFA(SRO) disseminated by KOIFA and information vendors.
Malaysia	Real-time	Exchange	Through information vendor	Regulatory authorities	Exchange and information vendors	N/A	N/A	N/A	N/A	N/A	Dissemination by Regulatory authorities and exchange. Trade data is also disseminated by information vendors
Mexico	N/A	N/A	N/A	N/A	N/A	Real-time (Not applicable for block trades and auctions)	The National Banking and Securities Commission (Regulatory authority)	N/A	N/A	Electronic platforms (ATS)	N/A
Russia	Real-time	Regulator, Bank of Russia	Real-time for members, also available for non-members (fee)	Regulatory authorities	Exchanges	N/A	N/A	N/A	N/A	N/A	Information about OTC deals available aggregated on the website at the end of the day for free, or on the next day
Saudi Arabia	Real-time	Exchange	Real-time	Regulatory	Regulatory and Exchange	N/A	N/A	N/A	N/A	N/A	N/A
Singapore	Real-time	Exchange	Real-time (fee), and aggregated data on website (free)	Exchange	Exchange	No regulatory requirement	N/A	N/A	N/A	N/A	Off-exchange trades reported to the exchange are treated like on-exchange trades
Switzerland	Real-time	Self-regulation and approved by Swiss Financial Market Supervisory	Real-time (fee), and 15 minute delay (free)	Self-regulation and approved by Swiss Financial Market Supervisory	Exchange Market Data Systems, Market Data Vendors, Internet	No regulatory requirement / venue specific	Self-regulation and approved by Swiss Financial Market Supervisory	No regulatory requirement / venue specific	Self-regulation and approved by Swiss Financial Market Supervisory	Exchange Market Data Systems, Market Data Vendors, Internet	Exchange Market Data Systems, Market Data Vendors, Internet

Country	LISTED CORPORATE BONDS TRADED ON AN EXCHANGE					LISTED CORPORATE BONDS TRADED ON A VENUE OTHER THAN AN EXCHANGE (E.G. ATS, MTF OR OTF)					LISTED CORPORATE BONDS TRADED OTC
	Pre-trade information disseminated to exchange users about trades on the exchange		Pre-trade information disseminated to the public about trades on the exchange			Pre-trade information disseminated to users of the trading venue		Pre-trade information disseminated to the public			
	When	Set by	When	Set by	Disseminated by	When	Set by	When	Set by	Disseminated by	
		Authority FINMA		Authority FINMA			Authority FINMA		Authority FINMA		
Turkey	Real-time	Exchange	Real-time (fee)	Exchange	Exchange and information vendors. (Data vendors via BIST Data Dissemination System)	N/A	N/A	N/A	N/A	N/A	N/A
United States	Real-time	Exchange (currently only NYSE Bonds)	Real-time	Exchange	Exchange and information vendors	Venue-specific: If the venue maintains an order book or displays quotations, then available to users in real-time	N/A	No regulatory requirements	N/A	N/A	N/A

Table 4 - Pre-Trade Transparency for Unlisted Bonds

Country	UNLISTED CORPORATE BONDS TRADED ON AN EXCHANGE	UNLISTED CORPORATE BONDS TRADED ON A VENUE OTHER THAN AN EXCHANGE (E.G. ATS, MTF OR OTF)					UNLISTED CORPORATE BONDS TRADED OTC			
		Pre-trade information disseminated to users of the trading venue		Pre-trade information disseminated to the public			Information available	Set by	Disseminated by	
		Information available	Set by	Information available	Set by	Disseminated by				
Australia	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brazil	N/A Unlisted corporate bonds are not traded on an exchange	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Canada	N/A Unlisted corporate bonds are not traded on an exchange	If in an order book and otherwise displayed, then to users in real-time	Statutory regulator and IIROC as the Information Processor	Not required by the Information Processor	Statutory regulator and IIROC as the Information Processor	N/A	N/A	N/A	N/A	N/A
EU Jurisdictions (MiFID I)	N/A Unlisted corporate bonds are not traded on an exchange	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EU Jurisdictions (MiFID II/MiFIR)	N/A	On a continuous basis during normal trading hours.	EU regulatory framework (MIFIR)	On a continuous basis during normal trading hours.	EU regulatory framework (MIFIR)	Trading venues	Investment firms are required to make public firm quotes in respect of bonds admitted to trading on a trading venue for which they are systematic internalisers and for which there is a liquid market, subject to specific conditions.	EU regulatory framework (MIFIR)	Investment Firm operating as Systematic Internaliser	
Hong Kong	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Japan	N/A Unlisted corporate bonds are not traded on an exchange	N/A	N/A	N/A	N/A	N/A	JSDA disseminates "Reference Statistical Prices" calculated based on indicative prices submitted by designated dealers through JSDA's website and information vendors every business day	JSDA (SRO)	JSDA (SRO)	

Country	UNLISTED CORPORATE BONDS TRADED ON AN EXCHANGE	UNLISTED CORPORATE BONDS TRADED ON A VENUE OTHER THAN AN EXCHANGE (E.G. ATS, MTF OR OTF)					UNLISTED CORPORATE BONDS TRADED OTC		
		Pre-trade information disseminated to users of the trading venue		Pre-trade information disseminated to the public			Information available	Set by	Disseminated by
		Information available	Set by	Information available	Set by	Disseminated by			
Korea	N/A	N/A	N/A	N/A	N/A	N/A	Information of quotations is reported in real-time	Regulatory authorities and KOFIA(SRO)	OTC trade information reported to KOIFA(SRO) disseminated by KOFIA and information vendors
Malaysia	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mexico	According to Law (Securities Market Law: Articles 70 and 89), all corporate bonds traded in Mexico have to be listed								
Russia	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Saudi Arabia	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Singapore	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Switzerland	N/A	No regulatory requirement / venue specific	Self-regulation and approved by Swiss Financial Market Supervisory Authority FINMA	No regulatory requirement / venue specific	Self-regulation and approved by Swiss Financial Market Supervisory Authority FINMA	Exchange Market Data Systems, Market Data Vendors, Internet	N/A	N/A	N/A
Turkey	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
United States	N/A Unlisted corporate bonds are not traded on an exchange	Venue-specific: If the venue maintains an order book or displays quotations, then available to users in real-time	N/A	No regulatory requirements	N/A	N/A	N/A	N/A	N/A

Table 5 - Post-Trade Transparency for Listed Bonds

Country	LISTED CORPORATE BONDS TRADED ON AN EXCHANGE					LISTED CORPORATE BONDS TRADED ON A VENUE OTHER THAN AN EXCHANGE (E.G. ATS, MTF OR OTF)					LISTED CORPORATE BONDS TRADED OTC
	Post-trade information disseminated to exchange users about trades on the exchange		Post-trade information disseminated to the public about trades on the exchange			Post-trade information disseminated to users of the trading venue		Post-trade information disseminated to the public			
	When	Set by	When	Set by	Disseminated by	When	Set by	When	Set by	Disseminated by	
Australia	Real-time	Exchange	Real-time (fee), and 20 minute delay (free)	Exchange	Exchanges and information vendors	No alternative market license framework. Dark pools operate under exchange markets so they report trades in real-time to an exchange who makes data public in the same way as trades done on the exchange					Trades done away from exchange order books operate under exchange markets so trades are reported in real-time to an exchange, which makes data public in the same way as trades done on exchange
Brazil	Real-time	Exchange	Real-time (fee), and 15 minute delay (free)	Regulator and the exchange	Exchange and information vendors	Trades reported every 15 minutes (free)	Regulator and the trading venue (CETIP)	Trades reported every 15 minutes (free)	Regulator and the trading venue (CETIP)	Trading venue (CETIP) website	The same dissemination regime applied to trading venues other than the exchange because CETIP, besides being a trading venue is also a trade repository
Canada	Real-time	Exchange	Real-time (fee)	Regulatory authorities	Exchanges, Information Processor for exchange-traded securities (TMX IP) and information vendors	Real-time	Statutory regulator	Real-time (fee)	Statutory regulator	Information processor for exchange-traded securities (TMX IP) and information vendors	N/A
EU Jurisdictions (MiFID I)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EU Jurisdictions (MiFID II/MiFIR)	Close to real time as technically possible	EU regulatory framework (MIFIR)	Close to real time as technically possible	EU regulatory framework (MIFIR)	Trading venue	Close to real time as technically possible	EU regulatory framework (MIFIR)	Close to real time as technically possible	EU regulatory framework (MIFIR)	Trading venue	Investment firm that conclude transactions in bonds admitted to trading on trading venues (RMs, MTFs and OTFs) shall make the information on the trade public through an APA.
Hong Kong	Real-time	SEHK	Real-time (fee), and 15 minute delay (free)	SEHK	SEHK and information vendors	Off-exchange trades reported to SEHK will be treated like	SEHK	Off-exchange trades reported to SEHK will be treated like	SEHK	N/A	Off-exchange trades reported to SEHK will be treated like on-exchange trades

Country	LISTED CORPORATE BONDS TRADED ON AN EXCHANGE					LISTED CORPORATE BONDS TRADED ON A VENUE OTHER THAN AN EXCHANGE (E.G. ATS, MTF OR OTF)					LISTED CORPORATE BONDS TRADED OTC
	Post-trade information disseminated to exchange users about trades on the exchange		Post-trade information disseminated to the public about trades on the exchange			Post-trade information disseminated to users of the trading venue		Post-trade information disseminated to the public			
	When	Set by	When	Set by	Disseminated by	When	Set by	When	Set by	Disseminated by	
						on-exchange trades		on-exchange trades			
Japan	Market information is disseminated on the trading day	FSA/Financial Instruments and Exchange Act	Market information is made available to the public on the following business day	FSA/Financial Instruments and Exchange Act	Exchange	N/A	N/A	N/A	N/A	N/A	JSDA (SRO) makes the post-trade information transparent through JSDA's website and information vendors
Korea	Real-time	Exchange	Real-time (fee)	Regulatory authorities	Exchange and information vendors	N/A	N/A	N/A	N/A	N/A	OTC trade information reported to KOIFA(SRO) disseminated by KOIFA and information vendors
Malaysia	Real-time	Exchange	Real-time (fee)	Regulatory authorities	Exchange and information vendors	N/A	N/A	N/A	N/A	N/A	Dissemination by Regulatory authorities and exchange. Trade data is also disseminated by information vendors
Mexico	N/A	N/A	N/A	N/A	N/A	Real-time (Not applicable for block trades and auctions)	The National Banking and Securities Commission (Regulatory authority)	Daily aggregated information regarding each bond. The information is published on the 10 th day of the following month	Banco de Mexico	Banco de Mexico	Daily aggregated information regarding each bond. The information is published on the 10 th day of the following month by Banco de Mexico
Russia	Real-time	Regulator, Bank of Russia	Real-time for members, with 10 minute delay on the website, and aggregated at the end of the day (free)	Regulatory authorities	Exchanges	N/A	N/A	N/A	N/A	N/A	Information about OTC deals available aggregated on the website at the end of the day for free, or on the next day
Saudi Arabia	Real-time	Exchange	Real-time	Exchange		N/A	N/A	N/A	N/A	N/A	

Country	LISTED CORPORATE BONDS TRADED ON AN EXCHANGE					LISTED CORPORATE BONDS TRADED ON A VENUE OTHER THAN AN EXCHANGE (E.G. ATS, MTF OR OTF)					LISTED CORPORATE BONDS TRADED OTC
	Post-trade information disseminated to exchange users about trades on the exchange		Post-trade information disseminated to the public about trades on the exchange			Post-trade information disseminated to users of the trading venue		Post-trade information disseminated to the public			
	When	Set by	When	Set by	Disseminated by	When	Set by	When	Set by	Disseminated by	
Singapore	Real-time	Exchange	Real-time (fee), and aggregated data on website (free)	Exchange	Exchange	N/A	N/A	N/A	N/A	N/A	Off-exchange trades reported to exchange are treated like on-exchange trades
Switzerland	Real-time or deferred publication	Financial Market Infrastructure Act / Ordinance (FMIA / FMIO)	Real-time (fee), and 15 minute delay (free)	Financial Market Infrastructure Act / Ordinance (FMIA / FMIO)	Exchange Market Data Systems, Market Data Vendors, Internet	Real-time and deferred publication	Financial Market Infrastructure Act / Ordinance (FMIA / FMIO)	Real-time and deferred publication	Financial Market Infrastructure Act / Ordinance (FMIA / FMIO)	Exchange Market Data Systems, Market Data Vendors, Internet	Exchange Market Data Systems, Market Data Vendors, Internet
Turkey	Real-time	Exchange	Real-time (fee)	Exchange	Exchange and information vendors. (Data vendors via BIST Data Dissemination System)	N/A	N/A	N/A	N/A	N/A	Value of listed corporate bonds traded OTC are disseminated weekly on the web site of BIST
United States	Real-time	Exchange (NYSE Bonds)	Real-time Information provided via direct feed is subject to a fee that the Exchange must file with the SEC. Post-trade information is not required to be reported to FINRA's TRACE if transactions are executed on and reported to the	Exchange	Exchange and information vendors	As required by FINRA's TRACE. Currently required to report post-trade data to TRACE within 15 minutes; information disseminated to public in real-time	Self-regulatory organization (FINRA)	As required by FINRA's TRACE. Currently required to report post-trade data to TRACE within 15 minutes; disseminated to public in real-time	Self-regulatory organization (FINRA)	FINRA's TRACE	FINRA's TRACE

Country	LISTED CORPORATE BONDS TRADED ON AN EXCHANGE					LISTED CORPORATE BONDS TRADED ON A VENUE OTHER THAN AN EXCHANGE (E.G. ATS, MTF OR OTF)					LISTED CORPORATE BONDS TRADED OTC
	Post-trade information disseminated to exchange users about trades on the exchange		Post-trade information disseminated to the public about trades on the exchange			Post-trade information disseminated to users of the trading venue		Post-trade information disseminated to the public			
	When	Set by	When	Set by	Disseminated by	When	Set by	When	Set by	Disseminated by	
			listing exchange and the transaction information is disseminated publicly								

Table 6 - Post-Trade Transparency for Unlisted Bonds

Country	UNLISTED CORPORATE BONDS TRADED ON AN EXCHANGE	UNLISTED CORPORATE BONDS TRADED ON A VENUE OTHER THAN AN EXCHANGE (E.G. ATS, MTF OR OTF)					UNLISTED CORPORATE BONDS TRADED OTC		
		Post-trade information disseminated to users of the trading venue		Post-trade information disseminated to the public			Information available	Set by	Disseminated by
		Information available	Set by	Information available	Set by	Disseminated by			
Australia	N/A	N/A	N/A	N/A	N/A	N/A	Summary information	Trade association (AFMA)	Trade association (AFMA)
Brazil	N/A	Trades reported every 15 minutes (free)	Statutory regulator and trading venue (CETIP)	Trades reported every 15 minutes (free)	Statutory regulator and trading venue (CETIP)	Trading Venue (CETIP)	Trades reported every 15 minutes (free)	Statutory regulator and trade repository (CETIP)	Trade repository (CETIP) website
Canada	N/A	As required by IIROC as the Information Processor - currently required to the public on T+2 basis. Reporting done by the dealer that is part of the trade	Statutory regulator and IIROC as the Information Processor	Post-trade information is disseminated on T+2 basis by IIROC as the Information Processor	Statutory regulator and IIROC as the Information Processor	Information Processor (IIROC)	Post-trade information is disseminated on T+2 basis by IIROC as the Information Processor	Statutory regulator and IIROC as the Information Processor	Information Processor (IIROC)
EU Jurisdictions (MiFID I)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EU Jurisdictions (MiFID II/MiFIR)	N/A	Close to real time as technically possible	EU regulatory framework (MIFIR)	Close to real time as technically possible	EU regulatory framework (MIFIR)	Trading venue	Investment firm that conclude transactions in bonds admitted to trading on trading venues (RMs, MTFs and OTFs) shall make the information on the trade public through an APA.	EU regulatory framework (MIFIR)	APA
Hong Kong	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Japan	N/A	N/A	N/A	N/A	N/A	N/A	T+1 or T+2 depending on the execution time	JSDA (SRO)	JSDA makes the post-trade information transparent through

Country	UNLISTED CORPORATE BONDS TRADED ON AN EXCHANGE	UNLISTED CORPORATE BONDS TRADED ON A VENUE OTHER THAN AN EXCHANGE (E.G. ATS, MTF OR OTF)					UNLISTED CORPORATE BONDS TRADED OTC			
		Post-trade information disseminated to users of the trading venue		Post-trade information disseminated to the public			Information available	Set by	Disseminated by	
		Information available	Set by	Information available	Set by	Disseminated by				
									JSDA's website and information vendors.	
Korea	N/A	N/A	N/A	N/A	N/A	N/A	Bonds traded OTC reported within 15 minutes	Regulatory authorities and KOFIA(SRO)	OTC trade information reported to KOIFA(SRO) disseminated by KOFIA and information vendors	
Malaysia	N/A	Through ETP system	Exchange and regulatory authorities	Post-trade information is available to the public on the Bond Info Hub website	Regulatory authorities	Regulatory authorities, exchange and information vendors	Trade reporting is required via ETP	Regulatory authorities	Regulatory authorities, exchange and information vendors	
Mexico	According to Law (Securities Market Law: Articles 70 and 89), all corporate bonds traded in Mexico have to be listed									
Russia	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Saudi Arabia	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Singapore	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Switzerland	N/A	Real time or deferred publication	Financial Market Infrastructure Act / Ordinance (FMIA / FMIO)	Real time or deferred publication	Financial Market Infrastructure Act / Ordinance (FMIA / FMIO)	Exchange Market Data Systems, Market Data Vendors, Internet	N/A (unless traded on a trading venue)	N/A (unless traded on a trading venue)	N/A (unless traded on a trading venue)	
Turkey	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
United States	N/A	As required by FINRA's TRACE. Required to report post-trade data to TRACE within 15 minutes; information disseminated to public in real-time	Self-regulatory organization (FINRA)	As required by FINRA's TRACE. Required to report post-trade data to TRACE within 15 minutes; information disseminated to public in real-time	Self-regulatory organization (FINRA)	FINRA's TRACE	As required by FINRA's TRACE. Required to report post-trade data to TRACE within 15 minutes; information disseminated to public in real-time	Self-regulatory organization (FINRA)	FINRA's TRACE	