Sound Practices at Large Intermediaries Relating to the Assessment of Creditworthiness and the Use of External Credit Ratings

Final Report

THE BOARD OF THE
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Foreword

The Board of the International Organization of Securities Commissions (**IOSCO**) has published this final report on *Sound Practices at Large Intermediaries Relating to the Assessment of Creditworthiness and the Use of External Credit Ratings* (**Final Report**) following publication of a Consultation Report, *Sound Practices at Large Intermediaries: Alternatives to the Use of Credit Ratings to Assess Creditworthiness*.[1] The Final Report provideSound Practices at large intermediaries:

Alternatives to the use of credit ratings to assess creditworthinesss background on the project and the work undertaken by IOSCO's Committee on the Regulation of Market Intermediaries (Committee or C3) on assessment of creditworthiness by large market intermediaries. It also sets forth a number of sound practices[2] that regulators could consider as part of their oversight of market intermediaries, and which large market intermediaries may find useful in the development and implementation of effective alternative methods for the assessment of creditworthiness. Further, it reflects edits made to address a number of public comments received on the Consultation Report.

IOSCO recognizes that not every sound practice will be appropriate or equally effective for all large market intermediaries. However, IOSCO would still encourage individual market intermediaries to consider these sound practices where relevant to their activities. In addition, even though the focus of this report is on large intermediaries, we encourage smaller intermediaries to consider the points and analysis discussed in this report.

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1 See CR05/2015 *Sound Practices at large intermediaries:Alternatives to the use of credit ratings to assess creditworthiness*, Consultation Report, Report of the IOSCO Board, May 2015, available at: http://www.iosco.org/library/pubdocs/pdf/IOSCOPD486.pdf.

2 Sound practices consist of practices that regulators could consider. Such practices would not be reflected in the methodology for the implementation of the IOSCO Objectives And Principles of Securities Regulation as they do not represent a standard that IOSCO members are necessarily expected to implement or be assessed against.

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I. Executive Summary

The IOSCO Board requested that its Committee for the Regulation of Market Intermediaries (Committee or C3) examine the reliance on credit ratings by large market intermediaries in member jurisdictions and, most importantly, to identify "sound practices" currently in place at these firms with regard to the use of alternatives to credit ratings to assess creditworthiness (Project). The results of the Project are intended to promote the implementation of the Financial Stability Board (FSB) *Principles for Reducing Reliance on CRA Ratings* (CRA Principles).

The project specification stated that the Committee would work to gain an updated understanding of where member jurisdictions currently stand in connection with the reduction of reliance on credit ratings for market intermediaries in line with the CRA Principles. It further anticipated the development of a questionnaire to large intermediaries for the purpose of eliciting facts on their current practices relating to the standards, procedures, and methodologies they use to assess the creditworthiness of investment products and counterparties, as alternatives to mechanistic reliance on external credit rating agency (CRA) ratings. In addition, the project mandate contemplated that the Committee would convene up to two roundtables with large intermediary industry representatives to elicit their views on alternatives to the use of CRA ratings.

The Committee was further requested to identify sound practices that market intermediaries could potentially consider implementing in connection with their internal credit risk management processes and procedures. These sound practices could also potentially inform ongoing and future regulatory reform.

The Committee did the following in developing this Final Report:

- Conducted a survey of market intermediaries in IOSCO jurisdictions. Responses were received from 53 market intermediary firms in 14 C3 member jurisdictions.

- Held two roundtables with large market intermediary firms in April and July 2014. A summary of the roundtables is attached as Appendix 1.

- Used the results of the survey and the feedback from the attendees at the roundtables to draft and publish a Consultation Report for public comment. C2 considered the public comments in drafting this Final Report.

Among other things, this Final Report:

- Provides background to the project.

- Describes the work undertaken by the Committee.

- Analyzes responses received from the market intermediary questionnaire.

- Sets forth a number of "sound practices" for large market intermediary firms to consider in the implementation of their internal credit assessment policies and procedures.

II. Background

A. Introduction

CRA ratings represent a qualified assessment based on available information about an issuer or borrower, its market and its economic environment. This can offer investors and lenders an efficient way to label the risks associated with a particular borrowing or lending facility. Therefore, CRA ratings are used extensively in the financial community and are considered in prudential regulation, central bank operations, central counterparty (CCP) operations, investment fund management, and securities and market intermediary firms, among others.

However, examinations of some of the causes of the 2008-2009 financial crisis suggest that the "hard wiring" of CRA ratings within elements of prudential regulation may have been wrongly interpreted by some market participants as providing ratings with an official "seal of approval." This may have reduced the incentives for some firms to develop their own capacity for credit risk assessment and due diligence and may have led to overreliance on CRA ratings, thus exacerbating the financial crisis.

The possible overreliance on ratings has become a concern for financial regulators. Efforts in this respect are mainly concentrated on two areas: (1) requirements on financial firms to undertake their own due diligence and internal risk management instead of relying mechanistically on external CRA ratings, and (2) reconsideration of references to ratings in the regulatory framework, in light of their implicit potential to be regarded as public endorsement of CRA ratings, and thus, their potential to negatively influence market behavior. IOSCO believes that reducing such overreliance and seeking to identify sound practices with regard to suitable alternative credit assessment methods should both increase investor protection and be beneficial for market integrity and financial stability.

B. Previous Work

1. G-20 and FSB Projects

In recent years, there have been a number of measures undertaken by numerous international and national bodies to address the reliance of market participants such as broker-dealers on credit ratings to distinguish between classes of obligors, issuers, or financial instruments.

International consensus was reached regarding the need to regulate the operations of the CRAs and on the main principles of regulatory oversight. Three international organizations have led the discussions that have resulted in this consensus: the G-20, the Financial Stability Board (FSB), and IOSCO.

In the midst of the financial crisis, the FSB undertook an analysis of the causes and weaknesses underlying the market turmoil and set out recommendations to increase market and institutional resilience for the future. The request ended with the publication of the *Report of the Financial Stability Forum on Enhancing Market and Institutional Resilience*,[3] published in April 2008, which proposed concrete actions to promote, among others, changes in the role and uses of CRA ratings. The report highlighted the relevance that CRAs have in evaluating information on structured financial products and the reliance placed on their ratings by investors.

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3 *See* http://www.financialstabilityboard.org/publications/r_0804.pdf

To address the weaknesses described in the report, the FSB made recommendations to CRAs that were mainly oriented to strengthen their corporate governance structure and improve transparency of their methodologies, in particular regarding the differences observed between corporate debt and structured products. Additionally, the FSB recommended that investors address their overreliance on ratings (investors' due diligence) and that regulators review their use of ratings in the regulatory and supervisory framework, in order to avoid inducing uncritical reliance on CRA ratings.

In October 2010, the FSB published its high level principles *Financial Stability Board (FSB) Principles for Reducing Reliance on CRA Ratings* (CRA Principles)[4] for use by authorities in the alignment of the efforts to reduce their reliance on ratings. The CRA Principles called for standard setters and authorities to assess references to CRA ratings in standards, laws, and regulations and, wherever possible, remove them or replace them with suitable alternative standards of creditworthiness. In addition, banks, market participants, and institutional investors were called on to make their own credit assessments, rather than relying solely on CRA ratings in their credit assessment approach.

G-20 leaders endorsed the FSB's principles on reducing reliance on external credit ratings and declared that "standard setters, market participants, supervisors, and central banks should not rely mechanistically on external credit ratings." In 2012, the G-20 called for faster progress by national authorities and standard-setting bodies in ending the mechanistic reliance on credit ratings. In response to this call, the FSB published in November 2012 the *Roadmap for reducing reliance on CRA ratings: FSB report to G20 Finance Ministers and Central Bank Governors* (Roadmap)[5] intended to accelerate implementation of the CRA Principles. The Roadmap consists of two tracks:

- efforts "to reduce mechanistic reliance on CRA ratings through standards, laws and regulations"; and
- "work by authorities to promote and, where needed, require that financial institutions strengthen and disclose information on their own credit risk assessment approaches as a replacement for mechanistic reliance on CRA ratings."

To accelerate progress, the FSB decided to undertake a thematic peer review to assist national authorities in fulfilling their commitments under the Roadmap. The review took place in two stages. The first stage, published in August 2013,[6] comprised a structured stock-taking of references to CRA ratings in national laws and regulations. The report noted that progress had been greatest in the identification and removal of "hard-wired" references, particularly in the U.S. and the European Union. It also identified several areas where accelerated progress is still needed. The second stage was mainly focused on the action plans developed by national authorities to implement the Roadmap.

In May 2014, the FSB published the results from its *Thematic Review of the FSB Principles for Reducing Reliance on CRA Ratings* (FSB Thematic Review).[7] The FSB Thematic Review

4 *See* http://www.financialstabilityboard.org/publications/r_101027.pdf.

5 *See* http://www.financialstabilityboard.org/publications/r_121105b.pdf.

6 *See* http://www.financialstabilityboard.org/publications/r_130829e.pdf.

7 *See* http://www.financialstabilityboard.org/publications/r_140512.pdf

describes the findings of the second stage of the peer review of FSB member jurisdictions' actions to implement the CRA Principles. The final report found that although good progress had been made towards removing references to CRA ratings from laws and regulations, mechanistic reliance also arose from market practices and private contracts.

The FSB Thematic Review also made clear that the FSB wants national authorities to encourage market participants to review provisions within their private contracts that represent mechanistic reliance on CRA ratings and to establish clear timelines to implement measures to reduce mechanistic reliance elsewhere. Additionally, the FSB noted that regulatory distinctions still needed to be established in order to differentiate between the size and sophistication of institutions, the asset classes of relevant instruments (e.g. sovereign, corporate, or structured) and the materiality of possible exposure.

2. IOSCO's Implementation

IOSCO has never advocated the use of CRA ratings in its principles, recommendations or other guidance. Nonetheless, following the issuance of the CRA Principles and the Roadmap, C3 conducted a mapping exercise and surveyed its members in order to determine whether the regulation of market intermediaries in member jurisdictions promoted reliance on CRA ratings in determining capital and other prudential requirements. Other standing committees have also undertaken detailed reviews of disclosure, asset management, and CRAs in light of the CRA Principles and the Roadmap.[8]

3. National Jurisdiction Implementation

Some jurisdictions, including the U.S., EU and Japan, have taken action to remove references and reduce reliance on CRA ratings. In the U.S., for example, the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) was passed in 2010 and required federal regulators to remove references to credit ratings in federal regulations that require an assessment of creditworthiness. As a result, both the SEC and CFTC have taken action to implement this mandate.

In the EU, among other things, regulators issued rules (CRA3: Regulation 462/2013/EU),[9] which became effective in June 2013, aimed at reducing overreliance on credit ratings, while at the same time improving the quality of the rating process. The rules require financial institutions to strengthen their own credit risk assessments. In addition, the EU proposed certain alternative methodologies to replace external credit ratings (*e.g.*, the use of internal ratings for money market funds),[10] and it has set forth some higher-level direction in its Capital Requirements Directive (CRD) IV text, where it suggests that institutions should generally seek

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8 For example, the SEC adopted rules removing references to credit ratings in rules relating to broker-dealer financial responsibility and confirmations of securities transactions. The U.S. Commodity Futures Trading Commission (CFTC) has also acted, eliminating credit ratings in its regulation setting minimum qualifications on the types of foreign depositories where certain regulated entities may place customer funds. The CFTC also amended disclosure requirements imposed on commodity pool operators, replacing references to investment rating with creditworthiness.

9 See http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:146:0001:0033:EN:PDF. See discussion of Article 5a at L 146/13.

10 See http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2013:0615:FIN:EN:PDF.

to implement internal ratings based approaches or internal models in situations where credit risk is material.[11]

Finally, in Japan, the Financial Services Agency has removed the requirement for certain investment-grade ratings from shelf registration systems and introduced an alternative requirement in its place.

C. Reduction of Mechanistic Reliance on Credit Ratings

The FSB Thematic Review found that progress towards reducing references to CRA ratings in standards, laws and regulation has been irregular across countries and financial sectors.[12] Ongoing efforts to find alternative standards of creditworthiness in risk-based prudential frameworks have not addressed all sectors. While CRA ratings continue to play an important role in today's markets, the FSB found that the main challenge is to develop alternative standards of creditworthiness and processes so that CRA ratings are used only as an input in credit risk assessment. The FSB has recommended that national authorities and financial entities guard against the temptation to adopt a small number of alternative actions for assessing creditworthiness in place of CRA ratings, and instead adopt a more comprehensive approach.

1. Regulations on the Securities Industry

Due to their size and complexity, large intermediaries are often subject to a number of regulatory frameworks. For instance, an intermediary that is part of a banking institution and registered as a broker-dealer in the U.S., such as an investment bank, will be subject to the authority of both prudential and securities regulators. Many of the large intermediaries in the C3 member jurisdictions are subject to oversight from multiple regulators.

Beyond the prudential requirements set forth by the Basel Committee on Banking Supervision (BCBS), a number of jurisdictions have introduced incentives for securities firms to make their own credit risk assessment for the purposes of making investment or lending decisions. Such incentives include general provisions that prevent or caution against overreliance on credit ratings,[13] requirements for appropriate credit risk assessment processes and risk management procedures,[14] know-your-product obligations,[15] the obligation to act in the best interest of clients,[16] and disclosure or reporting obligations about the firm's credit assessment processes.[17] Brazil, on the other hand, does not require alternative standards of credit assessments because the references to CRA ratings in laws and regulations pertaining to securities firms are deemed unlikely to encourage mechanistic reliance.

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[11] See http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0453:FIN:EN:PDF.

[12] "The action plans vary widely in terms of scope and ambition level, particularly in terms of the volume of measures to be taken and the policy areas that they cover. In particular, very few action plans propose alternative standards of creditworthiness even though such standards need to be implemented by market participants before end-2015 as set out in the Roadmap." *See* FSB Thematic Review at 1.

[13] European Union (France, Germany, Italy, Netherlands, Spain, U.K.), Singapore, Switzerland.

[14] Australia, Canada, European Union (France, Germany, Italy, Netherlands, Spain, U.K.), Hong Kong, Japan, Singapore, U.S.

[15] Canada, Mexico, U.S.

[16] Italy, U.S.

[17] European Union (France, Germany, Italy, Netherlands, Spain, U.K.).

Only a few jurisdictions have taken or plan to take measures to encourage disclosure or reporting of internal credit risk management practices by securities firms, *e.g.*, as a means to facilitate the monitoring of compliance with capital requirements by the authorities.[18]

2. Relevant Prudential Regulations

The majority of investment banks in advanced economies use internal models for risk-weighted assets. In emerging markets, however, banks typically use standardized approaches. Some jurisdictions, however, have established safeguards to limit reliance on CRA ratings for all banks. They may require banks to perform their own analysis to ensure that capital charges appropriately reflect the credit risk of the bank's exposure.

In contrast to IOSCO, the Basel capital framework has to-date required the use of CRA ratings. Reliance on CRA ratings in laws and regulations are primarily for the purpose of regulatory capital and liquidity computations required under the Basel Committee framework.[19] Some member jurisdictions have already taken steps to reduce references to CRA ratings within their banking rules. In France, for instance, as an alternative to CRA ratings, banks may use the central bank's credit quality rating on nonfinancial companies as a reference for the purpose of regulatory capital computations. The central bank's rating system is recognized as an external credit assessment institution in line with the Basel Committee regulatory requirements.

For credit risk, the BCBS is in the process of reviewing the standardized approach and the securitisation framework with a view to reducing undue reliance on CRA ratings in the regulatory capital framework. Most IOSCO jurisdictions plan to make further progress towards reducing reliance on CRA ratings in bank capital adequacy requirements after the Basel Committee finalises its work on the securitisation framework and the standardized approach for credit risk. For market risk, the BCBS has set out a revised standardized approach for calculating capital charges for interest rate risk and risks arising from securitisation positions held in the trading book, both of which currently rely on assessments based on CRA ratings. It is currently reviewing these proposals.

With regards to the references to CRA ratings within the Basel Committee liquidity standards, the Basel Committee concluded that it is not possible to only use market based indicators. As a result, they have concluded that CRA ratings are needed and there is currently no work underway to completely remove them. Nevertheless, the Basel Committee published market-based-indicators guidance, which can be used by bank regulators to reduce undue reliance on CRA ratings.

D. Purpose and Scope of the Project

In order to assist the FSB in the promotion of the implementation of the principles set forth in the CRA Principles, the IOSCO Board concluded that the Committee should engage in the instant Project to address the reliance on credit ratings by market intermediaries in member jurisdictions and, most importantly, to identify "sound practices" currently in place at large

[18] European Union (France, Germany, Italy, Netherlands, Spain, U.K.), U.S.

[19] *See* Thematic Review on FSB Principles for Reducing Reliance on CRA Ratings, Peer Review Report, 12 May 2014, (available at http://www.financialstabilityboard.org/publications/r_140512.pdf) for a more fulsome discussion of banking regulations that may be applicable to large intermediary firms.

intermediaries[20] with regard to the use of alternatives to credit ratings to assess creditworthiness. The Committee therefore conducted a study described in this report of large market intermediary firms to gain an understanding of their current practices with respect to the assessment of the creditworthiness of investment products and counterparties as alternatives to mechanistic reliance on CRA ratings. Among other things, this study considered and analyzed:

- The methodologies and models that large market intermediary firms use to create internal ratings for financial products and counterparties.
- The requirements that various regulators impose on market intermediary firms in connection with the assessment of creditworthiness.
- The changes in practices that large market intermediary firms have implemented since the beginning of the financial crisis.
- How the credit risk for various financial products and counterparties is measured and reviewed by intermediaries.
- The role that CRA ratings continue to play in the credit assessment processes by large market intermediaries.
- Risks arising from the use of CRA ratings and how they affect large market intermediary firms.
- The impact that the size of a firm has on its credit risk management capabilities and resources.

E. Methodology

In order to carry out this project, a C3 working group developed a detailed questionnaire for large market intermediary firms designed to gain a fuller understanding of their credit risk assessment practices and the extent of how they use CRA ratings and internal ratings for financial products and counterparties. To supplement the questionnaire, C3 convened two roundtable discussions with intermediary representatives for the purpose of understanding their general practices regarding the assessment of creditworthiness and to identify the role that CRA ratings play in their own processes. In addition, C3 elicited views about whether regulators could do anything to assist in the implementation of the FSB principles or if regulatory action was even necessary in this regard.

After obtaining the questionnaire responses and considering the input from the roundtables, the working group analyzed the results in the context of current practices relating to the assessment of creditworthiness at large intermediary firms. C3 used this information to put together a list of sound practices that regulators could consider as part of their oversight of market

[20] The term "large intermediaries" does not include, for purposes of this project, asset managers. The use of external ratings by asset managers is addressed by the IOSCO Board's Committee 5, Investment Management (C5). In fact, in June 2015, IOSCO published its final report, *Good Practices on Reducing Reliance on CRAs in Asset Management*. *See:* http://www.iosco.org/library/pubdocs/pdf/IOSCOPD488.pdf. Readers are referred to that report for good or "sound" practices applicable to the use of credit ratings by asset managers. Therefore, the sound practices set forth in this report are not intended for asset managers.

intermediaries, and which large market intermediaries[21] may find useful in the development and implementation of effective alternative methods for the assessment of creditworthiness. IOSCO recognizes that not every sound practice will be appropriate or equally effective for all large market intermediaries. However, IOSCO would still encourage individual market intermediaries to consider these sound practices where relevant to their activities.

III. How Large Intermediaries Use and Assess Creditworthiness

A. Overview

As noted above, the recent global financial crisis illustrated how reliance on CRA ratings can potentially contribute and exacerbate the fallout on the markets. This section describes the changes which have been introduced by large market intermediaries and their current practices with respect to their credit risk assessment process and use.

Even before the onset of the financial crisis, most large market intermediaries with whom IOSCO consulted stated that they already had internal credit assessment processes in place and generally did not rely heavily, if at all, on CRA ratings. The largest intermediaries claim that they primarily used CRA ratings as an input in their internal rating models and processes, and for benchmarking purposes. These firms disputed the characterization that they mechanistically relied on CRA ratings. In fact, many firms view CRA ratings as a lagging indicator, publication of which could potentially trigger a more widespread event.[22] Rather, the intermediaries communicate that the industry generally relied on the same assumptions that the CRAs did when making their own credit assessments, especially in connection with structured products and mortgage-backed securities. Market intermediaries thus ended up reaching similar conclusions on these products with their internal ratings as the CRAs did. Both types of methodologies were based on assumptions about the market that turned out to be incorrect.

Because many of the largest intermediary firms already relied in large part on their internal ratings, they did not believe that it was necessary to make fundamental changes to their credit evaluation procedures. Many were prompted, however, to devote additional resources (*e.g.*, increased headcount and budgets) to their credit risk management areas to reflect the evolving nature of credit assessment in the post-financial crisis market environment. In addition, market intermediaries increased their focus on the governance structure of risk management.[23] The general response from these firms shows that they increased their reliance even more on internal ratings rather than on CRA ratings. CRA ratings continue to play a minor role, however, both as an input and a benchmark for internal ratings.

The ability of a firm to rely on robust internal assessments is directly linked to its resources, including headcount, advanced technological systems, and access to data. This seems to be related to the financial capabilities of a firm, *i.e.* larger market intermediary firms generally have more resources available to them and therefore have more internal rating capability. Smaller institutions may not be in a position to have enough credit risk management resources

[21] As indicated in footnote 20, above, these sound practices are not intended for asset managers.

[22] A downgrade in CRA ratings could, for example, create or exacerbate a market event due to the public nature of CRA ratings. Market intermediaries also mentioned that the use of internal ratings gave them greater latitude to change ratings in response to external events or updated analysis largely because they are not public.

[23] There was one firm that noted that it was not necessary to devote additional resources to credit risk management following the financial crisis despite increasing reliance on its internal ratings.

to conduct their own assessments of all potential risks. Consequently, the size of the market intermediary may be a key limiting factor when assessing a market intermediary firm's ability to perform reliable internal credit assessments. However, in the view of some large market intermediaries, the largest hurdle to the adoption of alternative methodologies for assessing creditworthiness relates more to the availability of information, *i.e.*, the firm's ability to obtain information necessary to conduct a comprehensive and complete assessment of creditworthiness.

B. Sources of Credit Risk and Uses of Credit Assessments

Credit risk stems from a variety of sources. Since many of the large market intermediary firms also have extensive banking operations within their corporate organization, loan portfolios are often the largest and most obvious source. Other sources of credit risk arise from many other activities. Banks are increasingly facing credit risk in various financial instruments other than loans, including acceptances, interbank transactions, trade financing, foreign exchange transactions, financial futures, swaps, options, bonds, equities, and in the extension of commitments and guarantees, and the settlement of transactions. The main areas of credit risk in a firm are highly dependent on its business model and in the areas where the main business is carried out. The large and varied sources of credit risk mean that integration of credit risk assessment into a robust risk management system is essential to the ongoing viability of market intermediary firms. This creates a need for market intermediary firms to use credit assessment methods in several different areas throughout the firm to mitigate potential risks arising from these varied areas.

Firms mainly assess credit risk to determine the risk of a borrower or counterparty, which includes the credit risk associated with customers, transactions, and issuers. This can cover specific financial instruments or issuers and can be used to manage and reduce overall credit risk as well as to help firms set their risk appetites. In particular, market intermediary firms must manage correlation and concentration risk, which was often not sufficiently recognized before the crisis. One intermediary firm noted that incorrect correlation assumptions relating to structured products created problems for their internal assessments during the financial crisis. In addition to the management of the risk of specific counterparties, many market intermediary firms use credit assessments for portfolio management, *i.e.*, credit quality is a key factor in the investment decisions for a particular portfolio. Credit assessments are also often used for stress testing purposes (*e.g.*, for testing clients' creditworthiness and portfolio analysis). Market intermediary firms believe that the assessment of creditworthiness plays a large role in the overall enhancement of a firm's risk management system through such stress testing.

Credit ratings also are used by market intermediary firms in their various private contracts (*e.g.*, ISDA master agreements, loan agreements, or margin arrangements). Given that in general CRA ratings are public, most of these firms use them as downgrade triggers in their agreements or as specific events of default in standard contracts. Such triggers are a common and widely-used as risk mitigation with investment grade counterparties. Firms often rely on their internal assessments of creditworthiness when negotiating and setting credit terms in legal and master agreements with both investment grade and non-investment grade counterparties.

C. Credit Risk Management

1. Resources for Credit Risk Management

Most large market intermediaries tend to have in-house capabilities and technical expertise to assess credit risk and counterparty creditworthiness. As noted above, since the beginning of the financial crisis, many of these firms have undergone extensive internal reviews to enhance existing model analysis, credit risk management policies and the approval process. The size of the firm and its business activities often determine where the credit assessment function is located within the firm's organization. Large intermediaries have allocated additional resources and employed experienced staff to implement their credit risk assessment processes. This includes internal ratings, validation, on-going monitoring and reporting to management on a regular basis.

2. Internal Organization

In general, firms' credit assessment function is housed within a dedicated department such as risk management, credit research, or credit risk management. This structure is designed to ensure the independence of the credit assessment team. A few market intermediary firms integrate their credit assessment function within the business unit, which allows credit assessment teams to build on their business expertise. Regardless of the structure, market intermediary firms stress the checks and balances that they have implemented over their credit assessment function in order to ensure quality and objectivity of their credit assessments without undue influence from business heads on the independence of the process or the compensation of the credit review team.

Below is an overview of examples of the various ways that large market intermediary firms structure their credit assessment A number of market intermediary firms use "risk management department" structures, or variations thereof. In most cases, the credit officers or analysts are members of the risk management department; there may be sub-groups referred to as credit assessment, counterparty credit risk, risk control, group risk management, and business unit risk management. The risk management department monitoring may include credit risk functions based on the types of business (e.g., global transaction, bank & securities transactions, portfolio risk, private clients, etc.) reflecting the varying scope of coverage within the department. The risk management team members include senior staff such as risk and compliance officers.

- Many market intermediary firms maintain a credit risk management structure with a separate reporting line from the business units. Within this structure, the firm may divide credit review and assessment between separate groups by specialization depending on target market or type of product. For instance, a firm may divide responsibilities for emerging markets and securitized products, or dedicate separate teams to review investment grade and non-investment grade securities.

- There are also market intermediary firms which situate credit research teams within the business units (*e.g.*, fixed income, portfolio or fund management) that are associated with credit assessment activities. These teams support the front-line business unit that assumes the credit risk. These functions may not necessarily be limited to the securities firm part of the business, and may possibly be attached to a separate business unit.

- Credit assessment duties and the subsequent approval flow processes can also be contingent on the type of business to which the credit relates. Firms may have separate dedicated credit approval teams that review the assessment of creditworthiness depending on the type of financial instrument or product, counterparty, transaction, origination or geographical location of the business.

- In some market intermediary firms, the business unit "relationship managers" and credit analysts jointly perform the preliminary assessment, which is then submitted to a centralized or group risk management review body to conduct an independent second-level assessment. Internal credit ratings can also be performed by the individual business division before being submitted and validated by central risk management.

- Other market intermediary firms assign responsibility for credit assessment to other departments. For instance, firms reported splitting responsibility for credit assessment between the finance and compliance departments and between the retail division and investment banking. Another firm makes credit assessment a joint responsibility and bases it on business origination.

- Market intermediary firms also assign credit assessment based on the size of the corporate counterparty or issuer. In one example, the group headquarters performs the credit assessment review for large corporations, while the regional credit hubs review medium-sized and small entities.

- One market intermediary firm described how the segregation of the preparation and decision-making functions is built into the processing of credit applications. Information used in the approval process is collected by individual market functions, and the back office reviews the information, including any credit assessment ratings, and provides independent approval.

3. Corporate Governance

Market intermediaries broadly stated that their current credit management and governance frameworks are far more robust today than before the financial crisis, with enhancements made in the areas of policies and reporting. Market intermediaries generally break down their governance framework for credit risk on a global, firm-wide, or regional level.[24] The largest market intermediary firms had changes and improvements to credit risk management driven by the prudential requirements of the BCBS.

The corporate governance at large market intermediaries generally includes a comprehensive, multi-level review framework that involves a body of senior officers supported by various management teams and subcommittees. There may also be steering committees for strategic planning and decisions related to credit risk. The senior management body generally oversees all aspects of the intermediaries' risk governance that includes, among other things, credit risk.[25] Some of these key officers may include members of the board, a global head of risk management, a chief risk officer (CRO), members of investment committee, senior officers of risk management, and senior compliance officers with the chief internal audit executive as a non-voting member. Market intermediary firms also try to establish clear reporting lines up to senior management, which helps ensure that the approval of credit assessments and decisions are independent.

Senior management, which may include members of the Board, plays an important role for leadership, standards, and reporting. At a strategic level, the senior risk management's objectives may include:

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24 One large market intermediary stated that in addition to having a global governance structure, it strives to establish regional risk governance structures in order to more easily compare data across regions.

25 At a global level, the risk monitoring and reporting involving senior management or a separate committee may also include enterprise risk, operational risk, market risk, settlement risk, portfolio risk, and technology risk.

- Identifying the significant risk matters on a global or group level.
- Formulating and determining the firm's risk appetite and ensure that the business profile and plans are consistent.
- Establishing a strong independent review function, with an institutional culture sensitive to risk and compliance with regulations, policies, and procedures.
- Ensuring that any growth plans for the business are properly supported by effective risk infrastructure.
- Managing the firm's risk profile to ensure that specific financial deliverables remain possible under a range of adverse business conditions.
- Providing assistance to help management throughout the organization improve the control and coordination of risk assessment across the business.

One large market intermediary specifically described the objective of senior credit risk management as one of determining the risk appetite of the firm with a top-down approach from the board members. The firm's executive level includes a senior credit officer that has the technical expertise to understand the issue, and strives for consistency and balance across the organization.

Market intermediary firms also generally ensure that global risk committees and sub-committees meet on a scheduled, routine basis.[26] In addition to regularly scheduled meetings, firms often hold *ad hoc* meetings when exceptional circumstances or changes in macro conditions require it.[27] Some firms increased the frequency of these meetings following the financial crisis. One firm specifically noted that its risk committee meets on a monthly basis now. Its meetings include members of reporting team and economists who assist in identifying and examining portfolio changes.

Many market intermediary firms set forth specific reporting requirements within their governance framework. This often includes periodic reports prepared by the credit risk management team for the board and senior management. These reports may contain descriptions of the characteristics and performance of the firms' internal rating systems as well as an assessment of the firm's credit risk, using various metrics and categorizations, concentration analysis, stress test results, credit "watch lists," and policy/limit breaches. One firm specifically noted that the credit validation team prepares annual reports and makes recommendations for improvement of the internal rating systems to the global risk committee. These reports may or may not include references to CRA ratings; at least one firm noted that no external ratings are mentioned in any of the reports prepared for senior management.

Most market intermediary firms require the approval of senior management and/or an executive committee to make changes to risk policies, including credit risk policies. The policies encompass many aspects of credit risk processes, including the procedures, methodologies,

[26] Ten firms stated there are periodic oversight and reviews that are performed annually or on a scheduled basis.

[27] In less complex firms, or firms that provided shorter responses to the IOSCO survey (over 30), a simple governance framework could consist of independent review by a responsible committee that reports to key senior officers overseeing the credit risk review.

guidelines, manuals, and other standards that senior management or the designated oversight body implements. These policies may include rating templates and often lay out the internal credit rating system. A number of market intermediary firms have implemented additional policies since the end of the financial crisis.[28] These policies are more granular and market intermediaries believe that these more granular policies have led to better informed rating decisions since their implementation.

4. Review of Assessments of Creditworthiness

The validation and oversight of credit assessment are based on the internal structures, factors and other considerations described above.

Market intermediary firms may assign a separate committee, group or officers for a secondary review. There are also other management and oversight mechanisms used by different firms. The actual tasks, responsibility, and reporting line of such review and oversight are unique to each firm. These various mechanisms contribute to the overall supervisory functions and monitoring of credit assessment.

A number of such mechanisms are described below.

- Firms may have dedicated risk management teams perform the initial review and then have dedicated committees to evaluate individual counterparty transactions that may affect the overall risk profile of the firm or credit portfolio.
- Alternatively, firms may have business unit relationship managers and credit analysts perform a preliminary assessment which is then reviewed by risk management at the group level that performs an independent second-level assessment.
- Market intermediary firms may also incorporate their internal audit into their credit assessment process and engage them to conduct independent reviews of credit decisions.
- The credit risk management function in one large market intermediary is subject to an independent assessment by an asset quality review function, which is part of the group risk office as well as group audit.
- Additionally, some market intermediary firms organize risk management teams based on the industry or other sector. These teams may then present their findings to a formal credit committee or other body.
- Market intermediary firms may also call for additional oversight and review of credit assessments that change significantly after a routine or periodic review.
- One market intermediary firm has a governance framework that is overseen by the board of directors. Another firm noted that it follows procedures approved by its parent's audit and risk committee.

D. Assessing Creditworthiness

[28] One large market intermediary firm reported that it had increased the number of dedicated credit risk policies since 2008 from about three or four broad policies to 40 to 45 more detailed policies.

Most market intermediary firms believe that the creditworthiness of an issuer or counterparty is the heart of the assessment of the underlying financial products. As part of this process, these firms initially conduct an analysis of the issuer or counterparty. In many respects, this process sets their internal ratings apart from CRA ratings. A number of market intermediary firms said that they believe their client relationships and day-to-day business provides them with higher-quality information that can be utilized for their internal credit assessment processes. They believe that this information may be superior to the information CRAs rely on when compiling CRA ratings.

Beyond their ability to leverage existing client relationships, market intermediary firms employ various information sources to conduct the analysis such as company research, publicly available information, external credit ratings and meetings that they have with an issuer or counterparty. Assessments may cover a number of specific items, including:

- the probability of default;
- the general business profile, including an issuer's or counterparty's market share, the regulatory environment, competitive position, organizational structure and performance, industry and economic analysis;
- the financial profile, including the balance sheet, cash flow statements, debt servicing capability, capital adequacy and liquidity.

The information that large market intermediaries glean from these tools is often supplemented by research that the firm's analysts have conducted.

1. Financial Instruments

Market intermediary firms' assessment processes also take into account the type of financial product as well. Firms use various methodologies depending on the type of instrument that is being assessed.

Securities (Debt and Equity)

Firms dealing in debt and equity securities generally limit their assessment to the issuer itself, primarily considering probability of default, the loss given default,[29] and the issuer's business profile and financial performance. A few market intermediary firms supplement this assessment with CRA ratings. These independent credit analyses also help determine the credit limits that firms set for individual (or related) issuers.

Commercial Paper and Structured Products

Firms generally use the same approach for assessing the creditworthiness of commercial paper and structured products as they do for equity and debt securities, in which they initially assess the issuer or counterparty. There are several ways to do this. For instance, in the U.S., a credit risk assessment of the counterparty can be performed using the Internal Ratings Based Approach. In other cases, repo collateral is assessed by analyzing a relevant CRA rating, the market value of the product, and the capital haircut that should apply. A number of firms also

[29] The amount of funds that is lost by a bank or other financial institution when a borrower defaults on a loan.

consider the levels of risk of loss and leverage as well as structure covenants when determining the overall credit profile.[30]

Derivatives Contracts

Most firms dealing in derivatives contracts often evaluate their current and potential exposures, the relevant financial guarantee, legal documentation, collateral and other credit enhancements. The assessment may be contract or structure specific, or generic. Firms often use a proprietary model to assess the credit exposure generated by the specific derivatives contract on both a standalone and portfolio basis. One firm added that it takes the non-performance risk into account, which includes changes in the counterparty/issuer's credit rating and changes in the counterparty/issuer's own credit risk.

Asset-Backed Securities

Firms primarily base their assessment of asset-backed securities on the underlying asset, including analyzing the type, nature, performance, volatility and delinquency rates of the asset, along with analyzing the underlying structure of the security, including looking at the collateral, cash flow, and legal structure as well as the business and financial profile of the underlying issuer.

2. Counterparties

Most of the large intermediary firms have established internal credit rating systems to assess the creditworthiness of counterparties or use internal rating scorecards that have been approved by their regulators. In assessing the creditworthiness of counterparties, many firms indicated that they consider a wide range of both quantitative and qualitative factors.[31] While most firms incorporate many factors into their internal rating systems, they also have a wide range of rating methodologies when assessing the creditworthiness of counterparties.

Collateral Placed by Counterparties

Many large market intermediaries evaluate the quality or value of any collateral posted by a counterparty. This may include the application of haircuts to collateral, the size of which may vary in accordance with the collateral's risk rating and as the consequence of stress tests. Other considerations during the assessment process include the liquidity, valuation, concentration/blockage, and the total security coverage with respect to the size of exposure.

Other market intermediary firms do not specifically take into account the risk of collateral placed by a counterparty as part of their internal rating methodologies. They may separately assess the risk related to it at other times when, for example, they rate the risk of a particular transaction, or manage credit exposure to a particular counterparty. Other firms are limited in

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30 One market participant noted that while market intermediary firms generally utilize internal ratings to assess structured products, the market more generally, and retail clients specifically, may rely heavily on CRA ratings when judging the credit risk of structured products. These investors often view CRA ratings as more independent than those provided by the market participant. Retail clients may, as a result, actually increase their reliance on CRA ratings as they become more involved in the structured products market.

31 Market intermediary firms cited business risk, business strategy, industry sector analysis, market position, operating efficiency, financial risks, financial position, accounting policies and reporting, management risk and quality, cash flow, and liquidity as some of the factors that they consider.

the amount of collateral risk they can assume due to applicable regulatory restrictions on the type of collateral (*e.g.*, securities, currency) that they are permitted to receive.

Credit Risk Weights of Counterparties

Most market intermediary firms confirmed that their assessment of creditworthiness includes credit risk weights of counterparties. However, one firm stated that it would take into account of the maximum permissible counterparty risk instead of applying automatic limits on the basis of a rating grid. Another firm specifically noted that it does not use regulatory credit risk weights[32] as a factor in its internal rating process.

Industry Sector Risk

Many firms see the significance of the risk arising from the industry sector of the counterparty or issuer and incorporate industry-specific rating models and limits into their credit assessment procedures. One firm pointed out that it identifies various key assessment factors including the nature of industry (such as whether it is cyclical), intensity of competition, and the issuer's market position. Another firm stipulated that it applies more stringent credit approval requirements if a counterparty operates in a high-risk industry sector.

Country Risk

Market intermediary firms assess the risk arising from the country of the counterparty or issuer, establishing ceilings or other limits for countries or other geographical regions. Some firms emphasized that the counterparty or issuer risk must not be rated higher than the risk rating of the country where it is based. In considering the country risk, the assessment may cover leading economic indicators, the macro-economic framework of the country, its economic policy, and the country's balance of payments. Some firms shared various means to mitigate the risk from the country of a counterparty or issuer. For example, one firm deals only with counterparties headquartered in the U.S. or the U.K.

Concentration Risk

Most firms indicated that they place restrictions on the level of concentration risk or otherwise assess this risk. There has been an increased focus on concentration risk since the financial crisis and recognition that additional stress testing should be carried out. One large market intermediary stated that concentration risk was at the root of the financial crisis. It therefore now sets more stringent limits on each issuer regardless of its internal rating.

Risk of Insufficient Information

There are specific issues that may arise when assessing counterparties or securities issuers when there is a dearth of available data or public information relating to the specific entity. In these instances, the firm must rely on the data and financial statements that are provided by the counterparty or issuer itself as well as any prior history and experience the firm has with the specific counterparty or issuer. Intermediaries noted they often seek to conduct additional due diligence in these circumstances, including meeting with the management team, establishing

[32] The idea of using risk-weighted assets moves credit assessment away from employing a static requirement for required (or "regulatory") capital. This approach bases credit assessment on the riskiness of a bank's assets. For example, loans that are secured by a letter of credit given a higher risk weight than a mortgage loan secured with collateral.

exposure limits and evaluating these counterparties or issuers based on country-risk or industry sector. If, however, critical information about the issuer or counterparty is unavailable, market intermediary firms will avoid taking on exposure, especially in the event it affects internal credit limits.

E. Monitoring and Review of Existing Credit Risks and Models

As detailed above, most market intermediary firms have made significant changes in the monitoring of their internal assessments of creditworthiness in light of the lessons learned in the aftermath of the financial crisis. These changes include strengthening the credit assessment process and organization, introducing new methodologies and the formation of new internal committees.[33] A few large market intermediaries did not believe wholesale changes were necessary. While, as discussed above, they devoted additional resources to credit risk assessment, they did not believe they had fundamentally altered their internal processes.

With respect to the ongoing monitoring of credit risks, firms described their procedures when securities or other instruments and counterparties fall below internal benchmarks for acquiring or holding the asset. The market intermediary firms that responded do not automatically divest securities when the value of securities or other instruments or the internal rating of counterparties fall below internal benchmarks. In such a scenario, firms conduct a comprehensive review of the downside probability of the relevant investment and exercise discretion on case-by-case basis. A few market intermediary firms that do use CRA ratings indicated that their risk alert is triggered whenever there is any change of the relevant rating. Nevertheless, they do not automatically liquidate securities. Such a downgrade triggers a review of the investment by the relevant risk management department before any liquidation or divestment.

Firms usually assign the responsibility of reviewing risk assessment models to the staff from risk management, risk control or asset quality review teams. These review teams are structured in several different ways, although most firms strive to ensure that the review team is independent from the designer of the rating models and methodologies. Some firms form an internal validation group with staff from risk management and compliance teams. The internal review is usually overseen by a credit risk committee, although some firms permit their credit analysts to conduct the review.

Review teams seek to verify and evaluate the consistency and quality of the rating systems and ensure compliance with the policies and procedures documenting the model. Any changes in methodology that result from such reviews need to be approved by the relevant committee. At least one firm indicated that it benchmarks its internal ratings against CRA ratings, assessing the quality of its model by comparing internal ratings with the CRA ratings of certain counterparties.

Most firms' reviews take the past performance of models and methodologies into account to determine the accuracy in assessing the creditworthiness of financial products and counterparties. Evaluations are conducted through historical data and migration statistics

[33] One large market participant described the changes that it has implemented since 2008. It introduced a more robust corporate governance structure with improved inputs and limits and incorporated both qualitative and quantitative inputs into the internal models with additional validation steps. Another market participant also noted that, since 2008, it recruited an additional 1,200 staff and invested over U.S.$1 billion to enhance its risk management capabilities.

sources. Some firms do not consider past performance in the review due to insufficient information for comparison. One market intermediary firm that did not have enough historical information to compare the accuracy of its models and methodologies specifically noted that its assessment also reviews any overrides that its credit officers made in the evaluation.

Market intermediary firms that use models to assess creditworthiness review or audit their models at least annually. These reviews are conducted both by internal and external auditors. In addition, firms conduct periodic reviews of their methodologies for the assessment of the creditworthiness of financial products and counterparties at least annually. Some firms produce formal quarterly or semi-annual review reports on their internal ratings. Several firms conduct ad-hoc and event-driven quality assessments in response to, for example, a change of market conditions or regulatory requirements.

F. Use of Credit Ratings from External Credit Rating Agencies

Despite market intermediaries' increasing reliance on internal ratings and assessments of creditworthiness, CRA ratings continue to play a key role in most firms' overall credit risk procedures and processes, either as inputs in the review of products and counterparties or as benchmarks against which firms may measure their internal credit assessment. Many firms use CRA ratings in combination with their internal ratings to help them make objective determinations of the creditworthiness of financial products.

1. Reliance on CRA Ratings

Nearly all firms use CRA ratings to at least some extent when assessing the creditworthiness of financial products. Many of them use the ratings from nationally recognized statistical rating organizations in the U.S. while some also reference reliance on other credit rating agencies that are registered in other jurisdictions. But firms differ significantly in terms of the weight they attribute to CRA ratings. In all, only five of the market intermediary firms consulted noted that they attribute significant weight to CRA ratings.[34] Many firms that do not rely heavily on CRA ratings still consider them a useful data point. They noted that misrated securities and financial instruments often resulted in relative value opportunities.

Market intermediary firms that utilize CRA ratings characterize their use in various ways. Some smaller firms primarily use CRA ratings to assess creditworthiness, but supplement them with their own analysis by reviewing the financial statements of the issuer. Another firm adjusts the CRA rating based upon its independent analysis. As noted below, some intermediaries assign internal credit ratings to domestic issuers without referencing CRA ratings, and use CRA ratings only for non-domestic issuers. Another firm relies on external ratings to set limits in monitoring short-term trading portfolio risk. In the absence of an external rating on the issuer, it uses an internal rating to match the external rating framework.

Market intermediary firms find that CRA ratings are useful in a number of areas:

- Most firms regard external ratings as an additional data point that they can use as a benchmark or reference against their internal credit assessments.

- CRA ratings may be helpful when assessing sovereign or corporate instruments and in the review of basic or standard financial instruments.

[34] Nine of the other market intermediaries stated that they relied on CRA ratings moderately, two reported low to moderate reliance and seven stated that they only relied on CRA ratings to a minimal extent.

- CRA ratings may be helpful when assessing non-domestic issuers due to the lack of experienced staff or other expertise when assessing foreign issuers.

- CRA ratings can be useful as an initial filtering of potential securities for investment.

- Some firms use CRA ratings extensively in certain types of transactions when there are regulatory requirements to do so. These firms put less reliance on CRA ratings in other contexts.

Instead of relying on CRA ratings, many firms indicated that they also use other external benchmarks in assessing creditworthiness such as credit spreads and expected default frequencies. Firms generally thought these external benchmarks were useful as early warning signals for risk assessment, or in preliminary filtering of investments. Some market intermediaries attributed significant weight to the use of credit spreads while more firms attributed low to moderate weight to them. These firms noted that credit spreads are useful for assessing relative value when making investments even if they do not rely on them heavily. In addition, firms tend to value credit spreads less when the liquidity of a financial product is limited.

While most firms do not generally conduct any extra specific due diligence when using CRA ratings, a number of market intermediary firms perform some level of due diligence before relying on them. This may include reaching out to CRAs and discussing their assessment methodologies in order to understand their processes and practices. Firms may also reach out and conduct some due diligence when initially working with a new CRA for the purpose of assessing its expertise and independence.

2. Deviations from CRA Ratings

Most large market intermediary firms have not been negatively impacted by any differences between their internal ratings and those of the CRAs. Discrepancies between an internal rating and a CRA rating usually trigger a detailed internal review and analysis by the market intermediary. The firm will often run stress tests on the position where the discrepancy exists and thoroughly examine its internal assessment. The use of CRA ratings as a reference or other red flag triggers further internal risk evaluation, which serves as an additional check on the firm’s credit risk assessment.

Some large market intermediary firms shared the observation that they tend to experience less deviation between their internal ratings and CRA ratings with respect to the financial products and issuers that have more information generally available publicly.

IV. Challenges to the Adoption of Alternative Methods of Credit Assessment

A majority of respondents (40) reported no major hurdles affecting their ability to adopt alternative methodologies for assessing creditworthiness. However, at least two major, large market intermediaries highlighted for IOSCO the challenge of consistently obtaining access to the extensive data necessary for the application of internal methods for regulatory capital calculations for securitizations.

Firms further explained that the number of data points needed for internal creditworthiness assessments depend on whether the model is used for internal purposes only and/or for the calculation of regulatory capital requirements (more data points are needed for the latter). Furthermore, the nature of the financial instruments (*e.g.*, retail, mortgages, corporates, sovereigns, securitizations) that should be covered by the model, along with the geographic scope of the model (national, international or world-wide), will determine the breadth of the necessary data.

Firms must generally rely on publicly available data, which for some counterparties is difficult to obtain. Substantial information is available for "corporates and sovereigns" as compared to other counterparties, such as hedge funds, where the availability of data depends on the hedge fund's willingness to provide it. Firms noted that, if data is not publicly available, it may be difficult or costly to access.

V. Sound Practices for Market Intermediaries

A. Introduction

After reviewing the survey responses and presentations of large market intermediaries, IOSCO believes that the most useful thing that it can do is to share its observations regarding some of the sound practices currently in place at large market intermediaries with regard to the assessment of credit risk without mechanistically relying upon CRA ratings. This can serve as a guide to other large market intermediaries and promote implementation of the FSB's principles by market intermediaries in IOSCO member jurisdictions.

When asked in a survey, several large market intermediaries suggested, for example, that benchmarking exercises should be promoted or required by regulators, and cited efforts in this regard by international bodies, such as the European Banking Authority. Other large market intermediaries expressed the view more generally that regulators could provide additional guidance or assistance to the industry on how to use internal credit risk assessment methodologies.

Although some market intermediary respondents to the IOSCO survey suggested changes in the regulatory framework, including increased regulation of credit rating agencies with additional oversight of rating definitions and processes,[35] others, particularly those that already have robust internal processes for making assessments of creditworthiness, generally do not believe that additional regulatory assistance is necessary. Many of these market intermediaries stated that external credit ratings did not play a large part in their internal processes for assessing creditworthiness.

B. Sound Practices

In light of the above, IOSCO sets forth the following sound practices for the assessment of creditworthiness by large market intermediary firms.[36] Regulators could consider these sound practices as part of their oversight of market intermediaries and large market intermediary firms may find these sound practices useful in the development and implementation of effective alternative methods for the assessment of creditworthiness. IOSCO recognizes that not every sound practice will be appropriate or equally effective for all large market intermediaries. However, IOSCO would still encourage individual market intermediaries to consider these sound practices where relevant to their activities.

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35 In addition, some market intermediary respondents argued that improved oversight of credit rating agencies would improve transparency and accountability and could make external ratings more reliable. In addition, some firms suggested modifying or removing the existing regulatory requirements for using external credit ratings and strengthening disclosure standards for debt securities.

36 These sound practices are not addressed to asset managers. *See* footnote 21, above.

1. Establish an independent credit assessment function that is clearly separated from other business units, including the development of appropriate policies and procedures to ensure that decision-making is not unduly affected by operations from other areas of the firm.

2. Involve senior management in order to ensure the successful implementation of a robust credit assessment process, including promotion of a risk-sensitive culture throughout the organization. Such involvement would entail oversight of the credit risk assessment process by a dedicated risk management team that reports to high-level management, such as a separate independent credit committee.

3. Establish a coherent oversight structure to ensure that the credit assessment process is properly implemented and adhered to, including the establishment of reporting lines and responsibilities that are clearly articulated and followed.

4. Take steps to ensure that a firm's governing committee receives an appropriate level of information on the amount of credit risk to which the firm is exposed. This may include policy exceptions, limit breaches, stress testing analysis concentrations, watch lists, and top exposures, among other things.

5. Invest in staff and other resources necessary to develop a robust internal credit assessment management system that appropriately reflects the nature, scale, and complexity of its business. This includes having in-house the necessary staff expertise and technological ability to analyze effectively the firm's portfolio and to stay abreast of market indicators.

6. Avoid exposure to particular credit risks whenever the firm does not have the internal capability to independently and adequately assess the exposure. Take creditworthiness assessment capabilities into account when considering the firm's business growth plans and deciding how to, *e.g.*, structure its portfolios, manage its trading book or whether to take on additional credit exposure.

7. Incorporate a wide variety of qualitative measures into robust credit assessment processes in addition to quantitative measures. This can provide a more holistic view of creditworthiness than simply relying on quantitative factors alone.

8. Prescribe internal risk levels and investment appetites for the assessment of creditworthiness that focus on the intrinsic value of the instrument to set limits and risk. These levels might distinguish between various categories, such as industry or on a geographical basis, and be reflected in the policies and procedures that set out the operating standards that must be followed by teams or individuals responsible for the assessment of credit risk.

9. Subject non-investment grade or unrated financial products to enhanced scrutiny.

10. Avoid mechanistically relying on external CRA ratings. View such ratings as only one factor among several that may be used in a comprehensive credit assessment process. Carefully consider the effect of using external credit ratings as parameters to assess the creditworthiness of investments or to decide whether to invest or disinvest. Recognize and understand the possible limitations of CRA ratings and become familiar with CRA credit risk assessment methodologies. For example, CRA ratings may be a lagging indicator of more general credit risks and do not always reflect the most recent factors affecting creditworthiness.

11. Strive to update and improve continually the firm’s credit risk assessment practices to help ensure that they remain abreast of developments that could have a material adverse effect on the firm’s portfolios and counterparty relationships.
12. Ensure internal audit or another independent party performs regular reviews of credit policies and procedures.

Appendix 1

Summary of Roundtables

Roundtable 1

Firm 1

Firm 1's weakness in the past was its overreliance on pure quantitative models. Today, Firm 1 has not only a much more robust corporate governance structure, improved input, limits, etc., but they also incorporate *both qualitative and quantitative* input into its models. In particular, it may be that they use models more today than they did in 2008, but they incorporate *qualitative* measures into those models and better validation steps are taken. As a result, even if a model shows little risk, they would not today (as compared to 2008) permit over-concentration in any one area, *e.g.*, a specific asset class, such as subprime.

Firm 1 has never "had the luxury" of relying exclusively on external credit ratings. They have always undertaken an "independent" credit analysis. As compared to 2008, Firm 1 recognizes more clearly today that credit risk has many sources. They have established a "limit framework" for each issuer and consider additional factors when conducting credit risk assessments. They manage more specifically how much risk they will tolerate against any single issuer. Firm 1 comes up with its own internal credit rating, albeit in an "S&P style." Firm 1 updates its ratings at least on an annual basis, but also evaluates the need to change a rating based on developments more often than it did so in the past.

Firm 1 now has 40-45 "high level" credit risk management polices (compared to 3-4 in 2008). There have been "huge" improvements in Firm 1's internal rating capabilities. Today, they have 60+ "more granular" rating templates leading to a "more informed" rating decision. They rely less on external ratings, though they continue to play a minor role. They never relied "mechanistically" on external ratings in the past, but, compared to today, there would have been more reliance on the external ratings with less additional "internal double checking." Also notable is that reports to senior management "*no longer mention external ratings at all*." In contrast, in 2008, the external ratings would have been featured prominently.

Firm 1's credit risk management has also improved in part because they have developed an internal "Basel compliant" credit risk management framework. In their view, there has been "much improvement" based on becoming Basel compliant, and also because of the "Basel-independent" desire to improve credit risk management. A second concern with external ratings is that they are a lagging indicator. CRAs can be slow to take action; this is a problem with corporates, but particularly with regard to bond issuers; and there is great "weakness" in CRA rating of structure finance products. They also noted that the "public nature" of the CRA actions hamstrings them a bit in acting quickly (*e.g.*, downgrading an issuer) in contrast to the internal ratings within the major financial firms. Firm 1 also made the point that a large financial institution may have access to more information relating to an issuer that can assist it in making a more accurate credit assessment.

Firm 1 does, however, use CRA ratings to benchmark as well as analyze and understand the quality of their own internal ratings. They also note CRA firms are good "training" ground for analysts that they may hire. Post-Volcker, the size of market making positions is evolving due in large part due to changing capital rules. The need to improve the quality and adequacy of the data for models (*i.e.*, public or other sources) varies by industry. For corporate analysis, a wide amount of public information is available that should not be difficult to get.

For other counterparties (*e.g.*, hedge funds), it depends on what they provide; very little information is publicly available. Thus the only information they can get is directly from the counterparty. If they don't have a critical piece of information that affects limits and is a critical component of the risk they are prepared to take, they will not take on the risk.

What kind of guidance should regulators provide? What kind of existing guidance has helped them with risk management? They referred to the "tighter" Basel standards and suggested that the capital requirements have had a real impact. Left to their own devices, they would hope they would have robust risk management practices. Truth be told, however, it is the regulators who have pushed them to be better at this by imposing new standards and raising expectations. In particular, it is "easier" to ask top management for the money necessary to improve their risk management capabilities if they can argue to senior management that it is necessary to comply with more rigorous regulatory standards.

In Firm 1's view, major intermediaries follow similar approaches of developing internal credit assessments without relying mechanistically on external credit ratings. But with regard to asset managers and others (smaller firms), it is very difficult for them to get away from the mechanistic reliance on ratings.

Firm 2

Firm 2 believes that there was mechanistic reliance by a number of market participants on external ratings in 2008, and that this "over-reliance" "exacerbated the problems." In contrast, at the time, Firm 2 had their own internal ratings process and overlaid their risk management by understanding concentration risk to their counterparties and robust stress testing. Concentration risk is "what gets you in trouble." They believe that you need to monitor and potentially limit different types of risk, no matter how highly rated a particular issuer may be. They stressed the importance of a "bottom-up" analysis of transactions. Firm 2 never just relied on ratings. Since 2008, however, Firm 2 has changed "the way they structure what they do." They have developed further their internal ratings systems. Also, the "Street has learned" that when, e.g., you look at securitizations, you must look at "flows" and thematically evaluate different industries (categories) and concentrations. In contrast, in 2008, people did not focus sufficiently (or at all) on correlation or concentration risk.

Firm 2 noted that another development since 2008 is the reduction in proprietary trading, both because of the U.S. Volcker Rule and given the experiences of 2008. Banks are now focused on market making.

Since 2008, Firm 2 has expanded its Risk staffing and invested significantly into their infrastructure. Additionally, they also made the point that their internal risk management structure including the reporting lines has played a critical role in ensuring that their input is valued throughout the institution.

Today, Firm 2 looks at external ratings in order to assess its own internal ratings. For example, a two-notch difference between an external rating and Firm 2's internal rating for the same issuer "will lead to questions and necessary explanations." Firm 2 generally views external ratings, however, as only one element in a much broader analysis.

What limits the value of external ratings? First, for private portfolios, there are no external ratings available. Second, Firm 2 (and other firms) has more freedom to rate counterparties more timely and without concern for public market perception as these are used internally unlike external rating firms, because when a CRA publishes its rating, they can "cause an event."

The greatest hurdle facing Firm 2's (and other firms') ability to adopt alternative methodologies for assessing creditworthiness relates to data. Firms need to get (frequently on an international basis) data (including historical data of more than five years) for the underlying of a securitization to determine the risk parameters. It is very difficult to get this kind of data in a standardized format.

Firm 3

Globally, Firm 3 has 70 people in its credit risk management unit. They have a "prescribed risk appetite." They use credit analysis as the fundamental value to set limits and risk. Firm 3 dedicates 15 people to credit analysis. The external ratings of the top three CRA firms (the "Ordinal Ratings") are used as a "complement" to the fundamental process, *i.e.*, they use external ratings as part of their tool set and to test internal conclusions. They bifurcate the "investment grade side" and the "non-investment grade side."

Firm 3 does not try to re-underwrite the CRA rating of a major industrial company, such as a Ford. But alongside those ratings, they do other things to "temper" their view of those ratings. They engage in a "fundamental analysis" looking at long- term factors, in addition to "short term" factors, such as CDS and Bond spreads (short term). It would "be a mistake" to ignore the Ordinal Ratings, although they would distinguish "the mistakes made by CRAs" in the past with respect to the rating of structured finance products. They would separate the rating of such products from ratings of "fundamental" counterparties (*e.g.*, Ford Motor type counterparty and other industrials) and made the point that CRA analysis of corporate issuers is generally very good. Thus, for example, they have not yet significantly changed a risk "appetite" because of a disagreement with an Ordinal Rating as generally the gaps between their ratings and ours in the investment grade space are usually small and we do not rely on their differences as being material in our overall, comprehensive risk assessment where we sometimes generate a lower notch or sentiment rating.

They believe that the FSB's emphasis on reducing reliance on external ratings is problematic because CRAs can serve a useful function. In their view, total reference removal and non-reliance on credit ratings for smaller firms may not be realistic.

With regard to non-investment grade counterparties, they assign their own ratings. They have internal rating models and conduct a "more fundamental credit analysis." They don't look at CDS spreads for such products because there is "nothing there for non-investment grade stuff."

Firm 3 does not *rely* on external ratings for short-term counterparty risk, but they do use them "as an anchor," as they provide a "fairly reliable longer view through a cycle." They then consider the other spreads and try to "triangulate."

Firm 3 does not benchmark itself much against any firm. They are not a bank and the historical investment banking firms have been bank holding companies since 2008.

With respect to intermediaries that are smaller than Firm 3, which do not have equivalent credit risk management capabilities, they would advise such firms that they "*have to develop enough technology to look at the market indicators*" and follow the market cycles to ensure that they do not miss industry shifts.

They cited the example of MF Global and noted that, despite what the ordinal ratings said, Firm 3 had at that time fundamental issues with their credit. They would further say: *"anyone looking only at Ordinal Ratings will miss what's going on the markets."* They believe that such smaller firms, if they don't have and cannot develop the necessary sophisticated risk management, "*should stay short tenor, i.e., in cash business.*"

Firm 4

The core of Firm 4's credit risk management system is to determine the "risk appetite" of the firm, expressed in a "top down" process from the Board. This is generally expressed in terms of "stress loss." At a strategic level, the group's risk management objectives are to:

- Identify the Group's significant risks.
- Formulate the Group's risk appetite and ensure that the business profile and plans are consistent with it.
- Optimize risk/return decisions by taking them as closely as possible to the business, while establishing strong and independent review and challenge structures.
- Ensure that business growth plans are properly supported by effective risk infrastructure.
- Manage the risk profile to ensure that specific financial deliverables remain possible under a range of adverse business conditions.
- Help executives improve the control and coordination of risk taking across the business.

Firm 4 has a risk management framework that sets out the activities, tools, techniques and organizational arrangements so that:

- Material risks facing the Bank can be better identified and understood; and
- Appropriate responses are in place to protect Firm 4 and prevent any harm coming to its customers, colleagues, or community.

Firm 4's internal process is intended to enable management to identify and assess those risks, determine the appropriate risk response, and then monitor the effectiveness of the risk response and changes to the risk profile.

How does Firm 4 ensure independence of its credit rating team in relation to the business side? The risk teams are embedded in "clusters." That is, they "need to be operative along side the business" (e.g., for "credit sanctioning purposes"), but are "separate" from the businesses.

The Chief Risk Officer (CRO) manages the independent Group Risk Function. The CRO has day-to-day accountability for risk management, including credit rating, under delegated authority from the Chief Executive. This gives them additional comfort and robustness. There is an "approval" line above the "local sanctioning" line. So they have struck a "robust balance." They look for consistency and balance. They have a shared service that oversees the sanctioning process for various businesses throughout Firm 4 to ensure consistency of credit decisions. They also use this structure to ensure that there is independence throughout the reporting lines. The "sanctioners" have decision-making independence from the business. In addition, Firm 4 validates its models and seeks to ensure that it conforms to its credit decisions elsewhere in order to determine whether the decision is consistent with their agreed risk parameters and appetite.

The transaction credit approval cycle starts with "origination," and then goes on in the following order:

- Evaluation
- Approval
- Documentation
- Monitoring and Control
- Problem Recognition
- Problem Solving
- Impairment/Provision

"Origination" refers to folks in the front office covering the clients who bring forward the trades. Evaluation is done by first (front office/business) and second lines (risk sanctioning team), and varies depending on the size and the risk rating of the client. Approval refers to the point where there is the final approval. Risk works together with its colleagues in the front office and legal to ensure all documentation elements are consistent with the terms proposed and approved at Committee. This is true of all proposals. Once the risk is "on the book" they move to monitoring and control. In the evaluation phase, a credit office will always undertake the credit risk exercise, with the benefit of an internally determined *probability of default* (PoD). Some internally generated PoDs may be overridden to reflect the public agency rating based on credit officer judgment. Every risk position has a PoD, but these do not sole drive decision making. Firm 4 incorporates other quantitative and qualitative data points in its credit assessment process. Firm 4 has businesses toward the smaller parts of the book where there is more of a "scorecard" approach. As risk profile increases, many factors go into the credit decision and there is a "write up" with recommendation. Part of the approval will include limits on the particular credit exposure and the type of credit exposure. Then they would sign off on the PoD, but must also approve the loss given default (LGD) on the individual exposures they have in place.

Credit officers are assigned credit discretions based on their seniority. Authority levels are bucketed by PoDs. All requests for capital are presented to and require approval by a business committee that reviews, among many others items, historical relationship, revenue and prospective revenue and return metrics. Additionally, for larger and or lower rated clients, requests may be presented to a Risk Committee.

Firm 4 was asked whether it would calculate a PoD on exposures as low as $1.5 - $4.5 million. Firm 4 responded that it runs PoD on all of its exposures, but the way the PoD is calculated may vary on the size of the exposure. Smaller exposures might be reviewed on a scorecard approach while larger exposures are subject to a more analytical, model driven, approach. PoD is, however, always an input into the credit decision and helps to determine who within the firm must approve the transaction. Portfolio stress losses are calculated on a 1 in 7 and/or 1 in 25 year scenario.

Firm 4 Use of External Ratings in the Overall Credit Risk Management Process

Firm 4 credit risk management approval process is driven in part by a PoD calculation that considers, but does not rely on external ratings. As a start, PoDs are calculated for a specific point in time and also for a 1-year through the cycle. This provides "context" as to the health of the client. However, the PoD is just one of many additional factors that is considered. Internal models can drive PoD, but external ratings might be one of many factors used in its calculation.

And then on top of that the PoD is just one of many factors of the credit risk decision-making process. PoD becomes very important in the "monitoring" phase, once the credit decision has been approved. Firm 4 will also benchmark their internal ratings with existing external ratings.

Pre-Crisis and Lessons Learned

How has the market changed since 2008? What went wrong in 2008? Firms made the "wrong correlation assumptions relating to structured products." For example, they made the wrong assumption that property values will constantly rise. There was too much reliance on the value. In addition, people did not consider their position in the capital structure. Perhaps firms did not look close enough at LGD. That has changed and there is much better discipline today.

If CRAs and their ratings had not existed at the time of the financial crisis, there may have been a more diverse set of views. Perhaps CRAs channeled a common view (the wrong one). The absence of CRAs may have encouraged investment firms to support positions longer than might normally have been the case, but they can't speak for the investment (buy) side.

However, in reaction to the FSB's concern about "alleged" mechanistic reliance on credit ratings by firms, Firm 4 does not believe that in fact there ever was "mechanistic" reliance, although firms were "very" reliant. Rather, everyone made the same mistakes as the CRAs did and thus they mistakenly did not have the sense that the CRAs were getting things vastly wrong.

Where underlying data is not available, use is made of CRA ratings as a starting point for evaluation. But one thing that's changed is that banks are more focused on being able to distribute risk. One of the key things learned is to merge the market and credit view of your exposure. When credit risk goes wrong, it may create market risk and vice versa.

How has Firm 4 changed since 2008? First, they link market and credit risk more closely in their risk evaluation process. They consider the consequences if an asset cannot be distributed (i.e., what if you get stuck with certain assets on your balance sheet) and ask themselves whether they could afford that. Another thing that Firm 4 is doing better is "getting together monthly" and having risk reporting teams and economists identifying and examining portfolio changes earlier than they might have in the past. They have also learned from history.

But the concerns and "lessons learned" from the late 80s/early 90s came into even more focus post-crisis and impacted their appetite for property and leveraged assets. The "pre-crisis Firm 4" never just mechanistically relied on credit ratings. They overlay the rating with many other factors. Pre-crisis, if there was a change in an external rating of a client, it could lead to a reassessment of the PoD at Firm 4. That does not mean necessarily that they would change their own internal rating, but they would review the rating generated by their internal model.

Asked what smaller firms (with fewer CRM capabilities) should do, Firm 4 stated: "there is no great answer." They commented that there is "plenty of literature out there" regarding how to manage risk effectively and that you "don't need a large staff." They said, however, that firms must be "prepared to invest in analysis." "If you don't, perhaps you are working in the wrong field." The key question to ask is "how do smaller firms hedge." They need to do more of this.

Roundtable 2

One participant identified the three business lines that need credit assessments: (1) proprietary investment, (2) custody business, and (3) asset management / advisory business. In its proprietary investment business, (repurchase agreement (repos), money market, investment portfolio), the firm obtains at least two CRA ratings. Since the financial crisis, it has also been required to conduct a second internal creditworthiness assessment under new bank regulation. If a downgrade in the CRA ratings occurs, it must rely on its internal creditworthiness assessment model, which may include waterfall structures, or conduct stress testing to in order to analyze the underlying securities and ensure that excessive risks are not taken.

In repo transactions, a credit assessment of the counterparty is performed. The firm uses an Internal Ratings Based Approach (IRBA) in the U.S. in order to conduct a credit assessment of counterparties. This allows it to use its own internal credit assessment analysis rather than rely solely on a more standardized regulatory capital model. The criteria under the IRBA that this firm employs are similar to those used by CRAs in their credit assessments. The collateral for repo is reviewed based on the credit rating, market value (including historical development value), and capital haircut requirement for consideration. As the result of the internal assessment, firms are more cautious of risks taken and may not invest in products that might have been previously considered as appropriate.

Its custody business includes securities lending, providing overdraft, and lending money to the clients/funds (asset management). The firm conducts a credit assessment in order to evaluate both the risks and outlook for its custody business. In the area of securities lending, the firm relies on some CRA ratings in order to comply with statements that are set forth in the prospectus in connection with their custody. In cases where they are sub-custodians, there are additional liability concerns, and the firm conducts on-site reviews to ensure there is proper asset segregation by the sub-custodians.

The firm’s asset management business primarily involves exchange traded funds and portfolio management. For private and retail clients, the firm relies on CRA ratings due to the perception of impartiality. Institutional clients may additionally rely on some internal research, along with other economic data input. The Basel III requires that the firm ‘look through’ to the underlying assets in order to determine how much concentration exposure exists and derive a risk rate based on the underlying portfolio. The firm has a dedicated team that provides standard risk rate to their custodian clients on a quarterly basis, which is based on the capital requirement regulations.

A representative from another firm, who oversees the business product management and creating portfolio in the retail space, stated that his firm includes structured products (certificates with some options imbedded with common indices) involving equities. The clients are primarily buy-and-hold clients. Prior to the crisis, he stated the customers paid no attention to the credit risk as their main focus was high coupon rate or yield.

There were some concerns raised about the heavy reliance on CRA ratings in the retail structured product market due to lack of alternatives. In that market, intermediaries assess their retail clients and assign a risk-class to them as part of their profile. The firm can only recommend financial products with rankings that suit their profile. For the structured products today, the risk class is identical between issuers and underlying investments. If there is any foreign currency exposure of the issuer, the ranking of structured product will also be affected. In view of this, the credit analysts are required to modify the ratings and thus the product ranking to ensure the suitability of investments recommended to the clients.

Due to the lack of confidence after the crisis, and perhaps to a new-found awareness of the risks, retail clients are now heavily reliant on the CRA ratings of the structured products in which they invest. They view the CRA ratings as independent and sourced by a neutral party and they generally do not rely on the firm in providing the rating assessment; consequently, there is even more reliance upon CRA ratings in the retail market than in the institutional market.

Appendix 2

TABLE 1: List of Regulators Participating in this study

	Country	Regulator
1	Australia	ASIC
2	Brazil	CVM
3	Canada	OSC and QAMF (combined response)
4	France	AMF
5	Germany	BaFin
6	Hong Kong	SFC
7	Hungary	MNB (Central Bank)
8	India	SEB
9	Italy	CONSOB
10	Japan	FSA
11	Korea	FSS
12	Mexico	CNBV
13	Morocco	CDVM
14	Netherlands	AFM
15	Pakistan	PSEC
16	Poland	PFSA
17	Romania	RFSA
18	Singapore	MAS
19	Spain	CNMV
20	Turkey	CMB
21	UK	FCA
22	U.S.	CFTC
23	U.S.	SEC
24	U.S.	FINRA

TABLE 2: Market intermediary responses by jurisdiction

Jurisdiction	Number of Responses
Australia	2
Brazil	1
France	1
Germany	6
Hong Kong	2
India	10
Italy	4
Japan	5
Korea	5
Spain	2
Singapore	4
Turkey	4
UK	4
U.S.	3
TOTAL	**53**