2014/15 Assessment of Chicago Mercantile Exchange Inc.

March 2016

Contents

ISSN 2206-3013 (online)

1. Introduction and Executive Summary

In accordance with its responsibilities under the *Corporations Act 2001*, the Reserve Bank (the Bank) carries out periodic assessments of how well each clearing and settlement (CS) facility licensee is complying with applicable Financial Stability Standards (FSS) determined by the Bank and the more general obligation to do all other things necessary to reduce systemic risk.[1] The Bank's findings are reported to the relevant Minister and the Australian Securities and Investments Commission (ASIC). Consistent with established policy, Assessment reports are also published on the Bank's website.

This report presents the Bank's assessment of how well the Chicago Mercantile Exchange Inc. (CME) has met certain requirements under the FSS in the period 1 October 2014 to 31 December 2015. CME is a Chicago-based central counterparty (CCP) that provides clearing services for exchange-traded futures and options on futures, as well as for over-the-counter (OTC) derivatives transactions. CME is primarily regulated under United States (US) legislation by the Commodity Futures Trading Commission (CFTC). In September 2014, CME was granted an Australian CS facility licence, permitting it to offer clearing services to Australian-based institutions as direct clearing participants for OTC interest rate derivatives (IRD) and certain exchange-traded futures.

The Bank conducted an initial assessment of CME against all of the applicable *Financial Stability Standards for Central Counterparties* (CCP Standards) in 2014, prior to advising the Minister on CME's application for an Australian CS facility licence.[2] The CCP Standards are aligned with the Principles in the *Principles for Financial Market Infrastructures* (the CPMI-IOSCO Principles), developed by the Committee on Payments and Market Infrastructures (CPMI) and the Technical Committee of the International Organization of Securities Commissions (IOSCO), that address matters relevant to financial stability.[3]

CME does not currently have any direct Australian-based clearing participants. The Bank does not expect that CME will be systemically important to the Australian financial system in the near to medium term. Accordingly, the Bank's Assessment in this period has focused narrowly on CME's progress towards meeting the Bank's initial regulatory priorities, set at the time that CME was granted a CS facility licence.

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1 Until June 2013, the Bank was obliged to carry out such assessments annually. A legislative amendment at that time restricted the obligation to carry out annual assessments to CS facility licensees prescribed by regulation. No CS facility licensee has yet been prescribed for annual assessments. The Bank has clarified in a policy statement that it is likely to carry out detailed assessments of CS facilities that are systemically important to the Australian financial system on an annual basis, and that other CS facilities will be assessed in a level of detail and on a frequency to be discussed with the licensee and determined by the Bank at its discretion; see 'Frequency and Scope of Regulatory Assessments of Licensed Clearing and Settlement Facilities', available at <http://www.rba.gov.au/payments-and-infrastructure/payments-system-regulation/frequency-of-assessments.html>.

2 See RBA (2014), *Initial Assessment of Chicago Mercantile Exchange Inc. against the Financial Stability Standards for Central Counterparties*, September. Available at <http://www.rba.gov.au/payments-and-infrastructure/financial-market-infrastructure/clearing-and-settlement-facilities/assessments/chicago-mercantile-exchange/2014/pdf/cme-assess-2014-09.pdf>.

3 As of September 2014, the Committee on Payment and Settlement Systems was renamed and is now known as the Committee on Payments and Market Infrastructures.

A number of the Bank's initial regulatory priorities focused on CME's provision of services to the Australian market. These priorities reflect expectations set out by the Council of Financial Regulators (CFR) in July 2012 in its policy *Ensuring Appropriate Influence for Australian Regulators over Cross-border Clearing and Settlement Facilities* (CFR Regulatory Influence Policy) and in the CCP Standards.[4] The Bank does not expect CME to make substantial progress against these regulatory priorities until such time as it has material direct Australian clearing participation, or should there be a significant increase in CME's provision of services in Australian-related products. Nonetheless, in July 2015, CME began to accept Australian government bonds to meet initial margin requirements, fully addressing that component of the Bank's priority that it should ensure that local market practices are accommodated.

The Bank's other initial regulatory priorities reflected areas in which the Bank expected CME to conduct further work so as to fully observe the CCP Standards. CME has partly addressed a number of these regulatory priorities, including by implementing a Model Validation Framework and progressing work to implement recovery and wind-down plans. During the period CME also implemented contingency liquidity rules and conducted a high-level validation of its Liquidity Risk Management Framework. CME has also established, or is in the processes of finalising, agreements with new investment counterparties, and has applied to the Federal Reserve Board for a Federal Reserve Bank account. CME has informed the Bank that, if granted a Federal Reserve Bank account, it would expect to place some of the cash collateral it receives in the account. This would reduce CME's exposure to investment risk. The Bank's priorities concerning collateral and financial market infrastructure (FMI) links are ongoing in nature.

With work continuing in these areas, the Bank's 2014/15 priorities will be effectively carried over as regulatory priorities for 2016. The Bank expects CME to substantially progress work to meet these priorities over the coming Assessment period.

The Bank will determine the scope of its assessment of CME in future periods in accordance with its publicly stated policy regarding the assessment of licensed CS facilities.[5] Given the nature and scope of CME's current activities in Australia, the Bank does not consider it necessary at this stage to conduct a detailed assessment of CME against all of the CCP Standards. The Bank will instead continue to conduct and publish a narrower annual assessment, focusing on CME's progress towards meeting the Bank's regulatory priorities. The Bank would expect to increase the depth and coverage of its assessment of CME should the level of direct Australian participation in CME become material or should there be a significant increase in CME's provision of services in Australian-related products.

The remainder of this report draws out CME's progress towards meeting the Bank's regulatory priorities in more detail and is structured as follows: Section 2 summarises in tabular form the Bank's regulatory priorities with respect to its supervision of CME; Section 3 describes CME's regulatory and operating environment, as well as activity and risk management in the services CME is licensed to provide in the Australian market; and Section 3 also draws out CME's progress towards the Bank's regulatory priorities in more detail.

The Bank appreciates the cooperation of CME staff and management during the preparation of this Assessment, and the dialogue throughout the Assessment period.

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4 The CFR Regulatory Influence Policy is available at <http://www.treasury.gov.au/ConsultationsandReviews/Consultations/2012/cross-border-clearing>.

5 See 'Frequency and Scope of Regulatory Assessments of Licensed Clearing and Settlement Facilities', available at <http://www.rba.gov.au/payments-and-infrastructure/payments-system-regulation/frequency-of-assessments.html>.

The Bank has also engaged with the CFTC throughout the same period and looks forward to continuing the constructive dialogue.

2. Regulatory Priorities

This section summarises actions taken by CME over 2014/15 to meet the Bank's initial regulatory priorities, which were identified at the time CME was granted a CS facility licence. This section also summarises the priorities identified by the Bank for the 2016 Assessment period.

2.1 Progress against initial regulatory priorities

CME was granted a CS facility licence in September 2014. Upon the licence being granted, the Bank determined a set of initial regulatory priorities for CME to ensure that its operational and governance arrangements promote stability in the Australian financial system. In assessing CME's licence application, the Bank also conducted an initial assessment of CME's observance of the CCP Standards, and set additional priorities reflecting areas in which the Bank considered that CME should make changes to its policies or progress, as a matter of priority work that was already ongoing. These priorities, and CME's progress towards them, are summarised in Table 1 and discussed in more detail in Section 3.

Table 1: CME Regulatory Priorities for 2014/15

Standard	Priority	Comment
Regulatory Priorities Specifically Related to CME's Provision of Services to the Australian Market		
2. Governance	The Bank expects CME to ensure that Australian representation in governance arrangements appropriately reflects the scale and nature of Australian participation.	The Bank will engage with CME on this priority in the event that CME achieves material direct Australian participation.
5.Collateral 6. Margin	The Bank expects CME to ensure that local market practices are accommodated, including considering accepting Australian government bonds as initial margin in the event that direct Australian-based participation in CME becomes material.	CME began accepting Australian government bonds as initial margin in July 2015, fully addressing this component of the Bank's priority. In the event that CME achieves material direct Australian participation, the Bank will seek further engagement regarding any additional steps CME might take to accommodate local market practices.
12. Participant default rules and procedures	The Bank expects CME to ensure that there is appropriate representation of Australian membership and regulators in default management.	The Bank expects to engage with CME on this topic should there be a significant increase in Australian dollar (AUD) activity through CME, or in the event that CME achieves material direct Australian participation.
16. Operational risk	The Bank expects CME to provide adequate operational support arrangements to Australian participants, particularly during Australian market hours.	The Bank will engage with CME on this priority in the event that CME achieves material direct Australian participation.
Other Regulatory Priorities		

Standard	Priority	Comment
3. Framework for the comprehensive management of risks 14. General business risk	CME should implement appropriate recovery and wind-down plans. The Bank will expect to conduct a review of these plans once this work has been completed.	Partly addressed. CME has proposed recovery and wind-down plans for each of its three clearing services (which cover OTC IRD, credit default swaps (CDS) and Base products (primarily exchange-traded futures). CME has informed the Bank that it has considered CPMI-IOSCO guidance in developing its recovery and wind-down plans. CME is currently working to implement rule changes that will be required to give effect to these plans, subject to regulatory approval. The Bank expects CME's recovery and wind-down plans to address how it plans to raise additional equity if required.
4. Credit risk 6. Margin	The Bank expects CME to finalise and implement its model testing and validation, specifically for its margin, haircut and stress-testing models.	Partly addressed. In mid-2015, CME introduced a Model Validation Framework. During the Assessment period CME also hired an Executive Director of Clearing Compliance and Risk Management, who is responsible for supervising and coordinating all model validations. CME also conducted high-level independent validations of its Risk Management Framework and Liquidity Risk Management Framework during the period.
5. Collateral	CME has recently made changes to its collateral policy to reduce the scope of its acceptance of letters of credit as collateral. The Bank will monitor these arrangements, including through the provision of data from CME on the use of letters of credit as collateral.	Ongoing. CME's Collateral Policy sets a cap on the use of letters of credit as collateral. During the 2014/15 Assessment period, three clearing participants were granted limited exemptions to this cap, allowing each to post additional letters of credit on behalf of a non-financial client.
7. Liquidity risk	The Bank expects CME to continue to enhance its liquidity risk framework, and will continue to engage with CME as it develops its formal framework.	Partly addressed. During the 2014/15 Assessment period, CME conducted a high-level independent validation of its Liquidity Risk Management Framework. CME also implemented liquidity contingency rules and hired staff with specific liquidity risk management expertise.
15. Custody and investment risks	CME should continue to manage counterparty concentration risk in the investment of its treasury investment portfolio.	Partly addressed. At end December 2015, 51 per cent of CME's cash collateral investments were on a secured basis and 79 per cent of its unsecured investments were with three counterparties. During the Assessment period, CME increased by one the number of counterparties it actively invests with on an unsecured basis. CME has since begun investing on an unsecured basis with a further commercial bank, and is also in discussions with five additional counterparties. CME has applied for a Federal Reserve Bank account, and has informed the Bank that, if granted, it would seek to place some of the cash collateral it receives in the account.
19. FMI links	CME currently accepts letters of credit to cover exposures across its link with Singapore Exchange Limited (SGX). The Bank will monitor these arrangements, with a view to revisiting this issue in 12 months or if there is a material increase in exposures across the link. The Bank expects that CME will not permit letters of credit as acceptable collateral for any future links. At the same time, the Bank will engage with CME on other aspects of its risk management of links, including the extent to which stressed market conditions are taken into account when calibrating collateral requirements for exposures to linked CCPs.	Ongoing. In addition to its link with SGX, CME maintains two cross-margining agreements, with the Fixed Income Clearing Corporation and Options Clearing Corporation. Exposures across these links remain relatively small compared with CME's overall exposure.

2.2 2016 Regulatory priorities

The Bank's regulatory priorities for CME for 2016 are summarised in Table 2. These effectively carry over the Bank's initial regulatory priorities for CME. Four of the Bank's priorities relate specifically to CME's provision of services to the Australian market. The Bank does not expect CME to make substantial progress against these priorities until such time as it has material direct Australian participation, or should there be a significant increase in CME's provision of services in Australian-related products. The Bank's other regulatory priorities reflect areas in which the Bank expects CME to conduct further work so as to fully observe the CCP Standards. CME began work on these priorities during the 2014/15 Assessment period, and the Bank expects CME to substantially progress this work during the coming period. The regulatory priorities in the table are discussed in more detail in Section 3.5.

Table 2: CME Regulatory Priorities for 2016

Standard	Priority
Regulatory Priorities Specifically Related to CME's Provision of Services to the Australian Market (to be progressed at such time that CME has material direct Australian participation, or should there be a significant increase in CME's provision of services in Australian-related products)	
2. Governance	The Bank expects CME to ensure that Australian representation in governance arrangements appropriately reflects the scale and nature of Australian participation.
5.Collateral 6. Margin	The Bank expects CME to ensure that local market practices are appropriately accommodated.
12. Participant default rules and procedures	The Bank expects CME to ensure that there is appropriate representation of Australian membership and regulators in default management.
16. Operational risk	The Bank expects CME to provide adequate operational support arrangements to Australian participants, particularly during Australian market hours.
Other Regulatory Priorities	
3. Framework for the comprehensive management of risks 14. General business risk	CME should complete its work to implement its recovery and wind-down plans. The Bank will expect to conduct a review of these plans once this work has been completed, and to engage with CME regarding how its recovery and wind-down plans meet the requirements of the CCP Standards and the guidance on recovery planning set out by CPMI-IOSCO.
2. Governance 4. Credit risk 6. Margin 7. Liquidity risk	The Bank expects CME to share the reports from the validations that it finalises during the next Assessment period and to engage with the Bank on the results. The Bank will monitor CME's application and the ongoing adequacy of the Model Validation Framework, including the governance process.
5. Collateral	The Bank will continue to monitor CME's acceptance of letters of credit as collateral, including the extent of exemptions granted.
7. Liquidity risk	The Bank expects CME to share the reports from the validations that it conducts of its liquidity stress-testing model and any further validations of the Liquidity Risk Management Framework, and to engage with the Bank on the results. The Bank expects to continue to engage with CME regarding its management and governance of liquidity risk more broadly, including how the Board oversees the management of liquidity risk.
15. Custody and investment risks	The Bank expects CME to continue to reduce the size and concentration of its unsecured investments of cash collateral with non-government obligors. The Bank expects to engage further with CME as it implements these changes and will continue to monitor CME's cash collateral investments. The Bank will also engage CME to understand the governance arrangements regarding its investment exposures in more detail, including what oversight the Board has of these exposures.
19. FMI links	The Bank will continue to monitor CME's links, with a view to re-visiting this issue if there is a material increase in exposures. The Bank expects to be notified by CME of any such increase in exposures. In such an event, the Bank will also seek to engage with other relevant regulators. The Bank expects CME to provide accurate and timely data regarding its exposures across its links with other CCPs. The Bank expects that CME will not permit letters of credit as acceptable collateral for any future links.

3. Assessment of Chicago Mercantile Exchange Inc.

3.1 Introduction

A CCP acts as the buyer to every seller, and the seller to every buyer in a market. This is commonly achieved by the CCP interposing itself as the legal counterparty to all purchases and sales via a process known as novation. These arrangements provide substantial benefits to participants in terms of counterparty credit risk management, as well as greater opportunities for netting of obligations. At the same time, however, they result in a significant concentration of risk in the CCP. This risk can crystallise if a clearing participant defaults on its obligations to the CCP, since the CCP must continue to meet its obligations to all of the non-defaulting participants. Accordingly, in order to promote overall stability in the Australian financial system, it is critical that a CCP licensed to provide services in Australia identifies and properly controls risks arising from its operations and conducts its affairs in accordance with the CCP Standards. Primary responsibility for the design and operation of a CCP in accordance with the CCP Standards lies with a CS facility licensee's board and senior management.

CME provides clearing services for a number of products from its US operations.[6] CME operates three clearing services: an OTC IRD clearing service; a 'Base' clearing service; and an OTC CDS clearing service. The Base service covers exchange-traded interest rate futures and options on futures, foreign exchange (FX), equity, soft commodity, energy and metal futures, and certain OTC FX forwards and commodity swaps, and accounts for the majority of CME's total clearing activity. CME maintains separate default resources (i.e. default waterfalls) for each clearing service.

CME holds an Australian CS facility licence which permits it to offer clearing services to Australian-based institutions as direct clearing participants for OTC IRD and non-AUD denominated IRD traded on the CME market or the Chicago Board of Trade (CBOT) market, for which CME permits portfolio-margining with OTC IRD.[7] CME does not currently have any direct Australian clearing participants.

This report presents the Bank's Assessment of CME's progress towards its initial regulatory priorities over the period from 1 October 2014 to 31 December 2015.

6 CME Group also operates a separate European clearing house, CME Clearing Europe Limited. CME and CME Clearing Europe Limited are legally separate entities; each CCP is separately capitalised and operates its own Guaranty Funds.

7 The scope of CME's CS facility licence covers its Base and its OTC IRD clearing services. CME's CS facility licence does not permit it to offer CDS clearing in Australia and this Assessment therefore does not cover CME's CDS service.

3.2 Activity in CME

3.2.1 OTC IRD

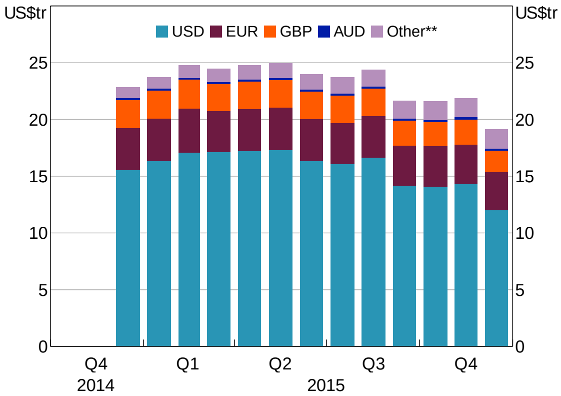
CME clears OTC IRD denominated in 19 different currencies, including AUD. The notional value of cleared OTC IRD transactions outstanding with CME decreased over the Assessment period, from US$22.9 trillion at end December 2014 to US$19.1 trillion at end December 2015 (Graph 1). USD-denominated OTC IRD account for around 70 per cent of OTC IRD transactions cleared by CME. On average over the Assessment period, 0.8 per cent of the total notional value of OTC IRD outstanding with CME was denominated in AUD.

The reductions in notional value outstanding in September and December 2015, visible in Graph 1, were largely driven by trade compression. Trade compression, or tear-up, refers to the termination of trades with offsetting cash flows to reduce the notional value outstanding while leaving market risk unchanged (or, for certain types of compression, within a predefined tolerance range). CME offers two types of compression services: proprietary solo compression using coupon blending; and multilateral compression using the TriOptima compression service.[8] CME completed its first TriOptima compression cycle in September 2015, compressing US$2.2 trillion of USD-denominated OTC IRD contracts. A further TriOptima compression cycle conducted in December 2015 compressed US$1.9 trillion of USD-denominated OTC IRD contracts.

Graph 1

OTC IRD: Notional Value of Trades Outstanding, by Currency (Stock)*

End of month



* Data counts one side of each trade

** Includes BRL, CAD, CHF, CZK, DKK, HKD, HUF, JPY, MXN, NOK, NZD, PLN, SEK, SGD, ZAR

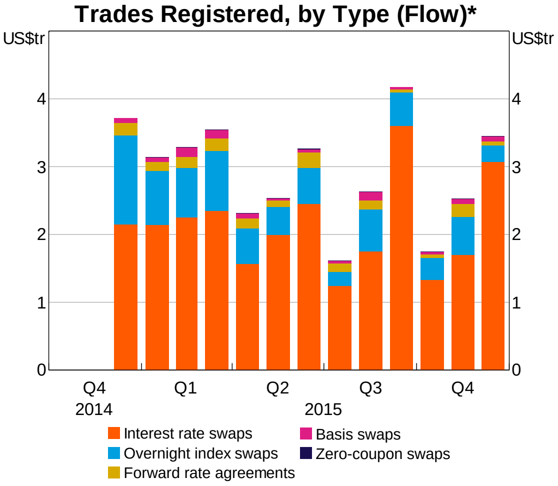
Source: CME Inc.

CME clears five types of OTC IRD: interest rate swaps, zero-coupon swaps, basis swaps, forward rate agreements and overnight index swaps. Graph 2 and Graph 3 depict notional value registered and notional value outstanding in CME's OTC IRD service, respectively, by product type. Interest rate swaps constitute the largest component of the outstanding value of open trades.

8 Solo compression is a process that tears up a clearing participant's or client's own offsetting OTC IRD trades, irrespective of the counterparty to each trade. In multilateral compression, offsetting trades are compressed across two or more participants' portfolios.

Graph 2

OTC IRD: Notional Value of Trades Registered, by Type (Flow)*



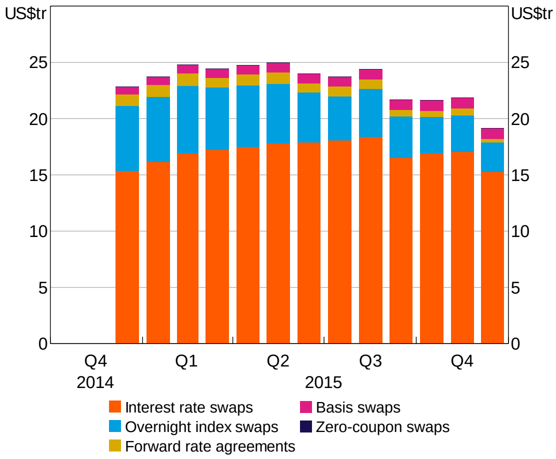
* Data counts one side of each trade

Source: CME Inc.

Graph 3

OTC IRD: Notional Value of Trades Outstanding, by Type (Stock)*

End of month



* Data counts one side of each trade

Source: CME Inc.

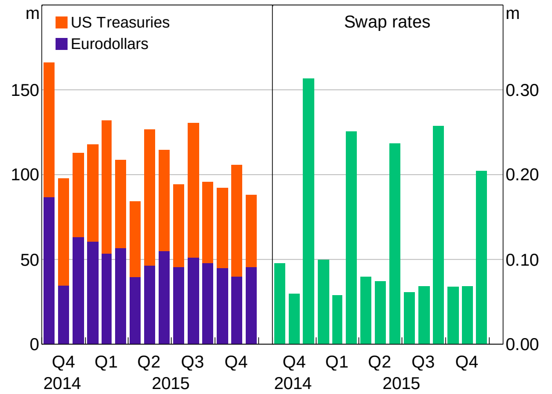
3.2.2 Exchange-traded derivatives

As noted above, CME clears a range of exchange-traded derivatives through its Base service. CME is licensed in Australia to clear a subset of these products: non-AUD denominated IRD traded on the CME market or the CBOT exchange for which CME permits portfolio margining with OTC IRD – currently, US Treasury futures and US deliverable swap futures traded on the CBOT exchange, and Eurodollar futures traded on the CME exchange.

The number of trades registered and outstanding in these products, by product type, is depicted in Graph 4 and Graph 5 respectively.

Graph 4

Futures: Number of Trades Registered, by Type (Flow)*

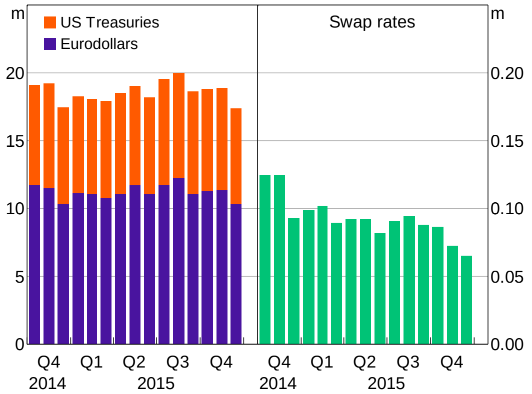


* Only includes Base products that are eligible for portfolio margining; data counts one side of each trade

Source: CME Inc.

Graph 5

Futures: Number of Trades Outstanding, by Type (Stock)*



* Only includes Base products that are eligible for portfolio margining; data counts one side of each trade

Source: CME Inc.

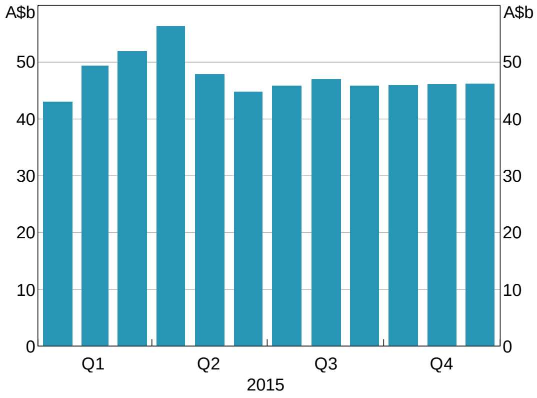
3.2.3 Australian activity

CME does not currently have any direct Australian clearing participants. However, a number of Australian-based banks, superannuation funds and other institutional investors clear OTC IRD products indirectly with CME, as clients of direct clearing participants. At end December 2015, the notional value outstanding of indirect Australian participants' OTC IRD trades in all currencies was around A$46 billion (Graph 6).

Graph 6

OTC IRD: Notional Value Outstanding of Australian Indirect Participants (Stock)*

End of month



* Data counts one side of each trade

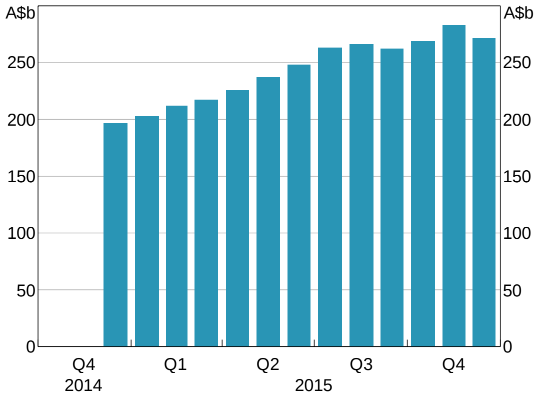
Source: CME Inc

Graph 7 and Graph 8 depict the notional value of AUD-denominated OTC IRD trades outstanding and registered with CME. At end December 2015, CME had around A$271 billion notional value of AUD-denominated OTC IRD trades outstanding.[9] This represents around 5 per cent of the notional value outstanding of all centrally cleared AUD-denominated OTC IRD trades (just under A$12 trillion at end December 2015).[10]

Graph 7

OTC IRD: Notional Value of AUD-denominated Trades Outstanding (Stock)*

End of month



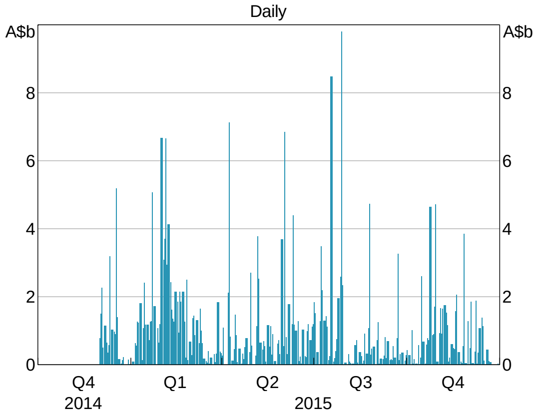
* Data counts one side of each trade

Source: CME Inc.

Graph 8

OTC IRD: Notional Value of AUD-denominated Trades Registered (Flow)*

Daily



* Data counts one side of each trade

Source: CME Inc.

9 This figure counts one side of each trade.

10 This is as a proportion of the AUD-denominated OTC IRD trades cleared at ASX Clear (Futures), CME Inc. and LCH.Clearnet Limited's SwapClear service.

3.3 Risk management in CME

A CCP is exposed to potential losses arising in the event of a clearing participant default. CME manages this risk in a number of ways, including through participation requirements, margin collection, the maintenance of pooled resources and loss allocation arrangements.

3.3.1 Clearing participation requirements

To manage its exposure to its participants, CME only allows institutions to become clearing participants if they meet certain financial and operational requirements. Prospective clearing participants are required to meet minimum capital requirements, which are set at US$50 million for OTC IRD clearing participants, and US$5 billion or US$5 million for Base clearing participants that clear exchange-traded products only, depending on whether the participant is a bank or non-bank, respectively.[11] Prospective participants must also satisfy a number of other requirements, including regarding their operational and technological capabilities, and disaster recovery and business continuity arrangements. Once accepted, clearing participants must meet minimum Guaranty Fund contributions, set at a minimum of US$0.5 million for Base clearing participants (US$2.5 million for those clearing OTC-traded Base products) and US$15 million for OTC IRD clearing participants. CME also maintains the right to impose additional requirements on clearing participants specific to the type of entity or products they propose to clear.

3.3.2 Margin collection

To cover its credit exposures, CME collects several types of margin from its clearing participants.

- *Variation margin*. CME collects 'settlement variation' margin (which corresponds to variation margin as defined in the CCP Standards) for all cleared products. Variation margin is calculated via a mark-to-market process to cover gains or losses on positions arising from observed price movements. This practice ensures that losses on CME participants' positions do not accrue over time. Variation margin is called twice a day for Base products, and once a day for OTC IRD.
- *Initial margin*. In the event of a clearing participant default, CME would be exposed to risk arising from potential changes in the market value of the defaulting participant's open position between the last settlement of variation margin and the close-out of these positions. To mitigate this risk, CME collects 'performance bonds' (which corresponds to initial margin as defined in the CCP Standards) for all cleared products. Initial margin is called twice a day for Base products and once a day for OTC IRD.[12] As required by CFTC Regulations, CME requires clearing participants to deposit gross initial margin for customer accounts, but allows net initial margin deposits for house positions. Clearing participants are required by CME and applicable CFTC Regulations to

11 Participants in the Base service that clear OTC-traded Base products must have at least US$50 million in capital, regardless of the type of entity. Banks that clear OTC-traded Base products as well as exchange-traded derivatives must meet the higher capital requirement of US$5 billion.

12 In addition to maintenance performance margin, CME also sets 'minimum initial margin' which is applied only to speculative customer accounts that are cleared through a clearing participant. Customers who are charged minimum initial margin are required to deposit this amount with their clearing participant. The clearing participant is, in turn, responsible for depositing the maintenance margin portion with CME. The level of these minimum initial requirements is based on the risk characteristics of each product and is set at least 10 per cent higher than the maintenance performance margin level. If the customer's total margin holdings fall below the maintenance performance level, they will be re-margined at the higher minimum initial margin level.

collect at least as much initial margin from each customer as CME collects from the clearing participants and to lodge this minimum amount with CME.

- *Intraday margin*. CME may also collect intraday margin in addition to the twice daily (for Base) and once daily (for OTC IRD) routine margin calls throughout a trading session in situations it deems appropriate, such as in the event of significant market movements. CME did not make any ad hoc intraday margin calls over the Assessment period.
- *Additional margin*. CME may also collect additional margin from clearing participants, in the form of 'concentration margin'. Concentration margin is intended to cover potential market exposures due to a clearing participant holding positions that take longer, or are more costly to liquidate, and provides an additional incentive for clearing participants to manage and contain the risk of their portfolios. For Base products, concentration margin can be applied if the results of stress-tests exceed both a participant's variation margin pays threshold and capital threshold (or a pre-defined absolute threshold).[13] For OTC IRD, CME may apply a concentration margin in the form of a liquidity charge multiplier. CME routinely calls concentration margin from clearing participants.

CME calculates initial margin requirements for OTC IRD using a Historical Value at Risk (HVaR) methodology, with historical returns scaled using exponentially weighted moving average volatility. CME targets an *ex post* coverage of 99 per cent assuming a close-out period of five days. A rolling look-back period of five years, in addition to including stressed periods such as the global financial crisis period of 2008–09, is used to provide a set of historical scenarios. CME has also established a volatility floor to protect against procyclicality.

Initial margin requirements for Base products are calculated using the CME SPAN methodology. This methodology calculates initial margin that reflects the total risk of each portfolio. CME calibrates initial margin requirements for Base products to cover 99 per cent of forecast price moves for a position over a minimum close-out period of one trading day. Base products that are portfolio-margined with OTC IRD positions are HVaR margined and so are subject to a five-day close-out period.

CME assesses the adequacy of its margin models through daily and monthly back-testing. CME also conducts sensitivity analysis on a monthly basis to assess the adequacy of its margin models.

3.3.3 Pooled financial resources

CME has separate default waterfalls for its OTC IRD service and its Base service (as well as for its CDS service).[14] Each waterfall is isolated from the others, ensuring that clearing participants are only liable for losses associated with a default within the services in which they participate. In the event of a clearing participant default, any losses arising would first be covered by the defaulted clearing participant's margin and other collateral (including its contributions to the relevant Guaranty Fund(s)). Should these resources prove insufficient to meet CME's obligations, CME may draw on other resources in the relevant default waterfall. This is shown in Figure 1, which depicts the order in which

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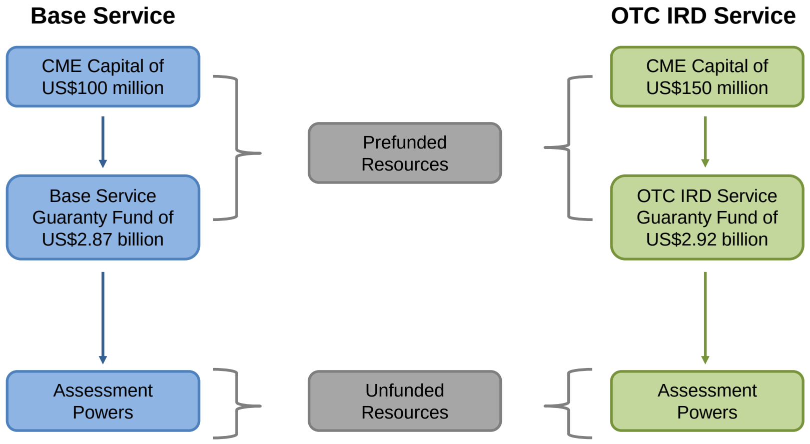
13 The variation margin pays threshold is an average of the three highest variation margin pays over the past twelve months. For non-bank clearing participants, capital is defined as net adjusted capital and calculated in accordance with CFTC regulations. For bank clearing participants, capital is defined as Tier 1 Capital, which is defined in accordance with regulations applicable to the bank clearing participant.

14 As noted above, this Assessment does not cover CDS products, as CME is not licensed to clear CDS in Australia.

financial resources would be used to cover default losses in excess of the defaulter's collateral, as at December 2015.

Figure 1

CME Default Waterfalls after the Defaulter's Collateral as at 31 December 2015



Source: CME Inc.

Prefunded resources

In the event that all of the defaulted clearing participant's margin and other collateral were exhausted, CME would seek to cover remaining losses arising from the default with a pool of prefunded mutualised resources, which are comprised of CME's capital contributions and the Guaranty Fund for the relevant service. All clearing participants are required to contribute to the Guaranty Fund of each service in which they participate.[15] CME would use its capital contributions (US$100 million for Base and US$150 million for OTC IRD, as at 31 December 2015), before allocating losses to the Guaranty Fund contributions of non-defaulting clearing participants.

The Base and OTC IRD Guaranty Funds are each sized to cover the default of the two clearing participants and their affiliates that would give rise to the largest credit exposure to CME under a wide range of extreme but plausible scenarios, as determined by stress-testing (the 'Cover 2' requirement). As at 31 December 2015, the size of the Base and OTC IRD Guaranty Funds were US$2.87 billion and US$2.92 billion respectively. The value of each fund is set equal to the greater of: the Cover 2 stress exposure on the last day of the calculation period; or the average of the Cover 2 stress exposures during the entire calculation period. CME also adds a buffer to the Guaranty Funds, to account for potential increases in the exposures of participants between scheduled resizing dates. The scheduled calculation period for the OTC IRD Guaranty Fund is one month and for the Base Guaranty Fund is three months, with clearing participant contributions calculated on the same time-frame. When sizing the Base Guaranty Fund, CME considers the sum of the two highest stressed

15 In August 2015, CME reduced the minimum OTC IRD clearing member contribution to the Guaranty Fund from US$50 million to US$15 million.

exposures from the same stress scenario. When sizing the OTC IRD Guaranty Fund, CME considers the sum of the two highest stressed exposures, irrespective of stress scenario.[16]

The adequacy of the Guaranty Funds are assessed on a daily basis through stress-testing. As part of its daily stress-testing process, CME calculates portfolio residual losses, which are stress-test losses in excess of total collateral posted by the clearing participant.[17] In the event that it is concerned the value of the Guaranty Fund is insufficient, CME has the ability under its rules to resize the Guaranty Fund and call additional Guaranty Fund contributions from all clearing participants outside the scheduled recalculation dates. A review of the Guaranty Fund would be prompted if the Cover 2 requirement was greater than 90 per cent of the Guaranty Fund size. The decision to resize the Guaranty Fund is discretionary and would be made by the Stress Testing Committee, taking into account how close the next scheduled resizing date is and how close the Cover 2 requirement has come to CME's prefunded resources. In situations where one clearing participant is driving the increase in the Cover 2 requirement, CME may choose to call additional margin from that clearing participant. During the Assessment period, CME resized the OTC IRD Guaranty Fund intra-month three times in response to increasing stressed exposures. In the second half of 2015, CME adjusted the OTC IRD Guaranty Fund buffer to reduce the risk of potential shortfalls in prefunded resources from growth in stressed exposures.

Unfunded resources and loss allocation rules

In very extreme circumstances it is possible that the pool of prefunded mutualised resources could be insufficient to fully cover default losses, leaving CME with an uncovered credit loss shortfall. Should this eventuate, CME would allocate remaining default losses to non-defaulting clearing participants through loss allocation tools.

CME is able to call additional resources from non-defaulting clearing participants by exercising its Assessment Powers. These Assessment Powers can be utilised to allocate losses among non-defaulting participants, and to replenish the relevant Guaranty Fund.

For the Base Guaranty Fund, the maximum Assessment CME can call is 275 per cent of the clearing participant's Base Guaranty Fund contribution in the event of a single clearing participant default, or 550 per cent in the event of multiple clearing participant defaults within the same Cooling Off Period. Once sized, the Assessment would be allocated among remaining clearing participants as a proportion of a participant's margin and volume. For the OTC IRD Guaranty Fund, the maximum Assessment would be sized to cover potential losses arising in the event of the default of the clearing participants with the third and fourth largest stress-test losses. Once sized, the OTC IRD Assessment would be allocated among remaining clearing participants based on participants' stress-testing results.

In the event that the Guaranty Fund was drawn on to meet losses arising from a clearing participant default, each non-defaulting clearing participant would be required to replenish its Guaranty Fund contributions by close of business on the business day following the payment. However, replenishment is subject to the clearing participant's maximum obligation to contribute to the Guaranty Fund, and to fund Assessments. This limit on replenishment only applies during the Cooling

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16 CME uses a more conservative approach when sizing the OTC IRD Guaranty Fund as there is a longer 'Cooling Off Period' following a default, during which multiple stress scenarios may be experienced. The Cooling Off Period limits a clearing participant's maximum obligation to contribute to the Guaranty Fund, and to fund Assessments and lasts for a predetermined number of days following the default of a clearing participant. The Cooling Off Period for the Base Guaranty Fund is five days and for the OTC IRD Guaranty Fund is 25 business days.

17 Total collateral posted by the clearing participant includes collateral posted to meet initial margin requirements, additional margin requirements and any excess collateral posted by the clearing participant.

Off Period. After the Cooling Off Period, clearing participants must fully replenish their Guaranty Fund contributions.

Should uncovered credit losses remain following the application of Assessments, for its Base service CME would follow the close-out netting procedures described in its Rulebook and institute a full tear-up of contracts. For its OTC IRD service, CME would implement variation margin gains haircutting in conjunction with a full tear-up of contracts.[18]

CME is currently developing its recovery and wind-down plans to articulate how it would continue or cease its operations if it suffered extreme losses (see Section 3.5.2). As part of this process, CME is considering new tools to enhance its ability to deal with such losses.

3.4 CME's regulatory and operating environment

CME is licensed under section 824B(2) of the *Corporations Act 2001*, which provides an alternative licensing route for an overseas-based CS facility subject to requirements and supervision in its home country that are considered to be sufficiently equivalent to those in Australia. CME is incorporated in the US, and is primarily regulated by the CFTC under US legislation.

The Bank and ASIC have established a joint Memorandum of Understanding (MoU) with the CFTC regarding supervision of CCPs.[19] The MoU provides a framework for cooperation among the authorities, including information sharing and investigative assistance.

3.4.1 The regulatory regime applicable to CME

US regulation

In the US, responsibility for supervision of CCPs is shared between the CFTC and the Securities Exchange Commission (SEC), according to the type of product cleared by the CCP. In general, derivatives CCPs are supervised by the CFTC, while securities CCPs are supervised by the SEC. CME is registered with the CFTC under the US *Commodity Exchange Act* as a Derivatives Clearing Organization (DCO), and the CFTC is CME's primary regulator. CME was previously deemed registered with the SEC, in relation to plans to begin clearing security based swaps, but in December 2015 the SEC granted a request from CME to withdraw this registration. This request was made on the basis that CME does not, and does not intend to, clear security based swaps.

The US *Commodity Exchange Act* establishes 'Core Principles' for DCOs, which are a set of standards with which all DCOs must comply. The standards cover financial stability-related matters, as well as other matters such as antitrust. The Core Principles are implemented at a more detailed level through CFTC Regulations.

In 2012, CME was designated by the US Financial Stability Oversight Council as systemically important under the US *Dodd-Frank Wall Street Reform and Consumer Protection Act* (Dodd-Frank Act). Under Title VIII of the Dodd-Frank Act, the CFTC has introduced additional regulatory requirements that apply specifically to Systemically Important DCOs (SIDCOs). These requirements, which became effective on 31 December 2013, form part of the CFTC Regulations and are intended to augment the

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18 CME's Rule 8G802.B permits CME to use variation margin gains haircutting in an OTC IRD 'termination event' (i.e. in the event of bankruptcy of CME Inc.), at which time all OTC IRD contacts shall be closed. CME's Rulebook is available at: <http://www.cmegroup.com/rulebook/CME/>.

19 The MoU is available at: <http://www.rba.gov.au/payments-and-infrastructure/payments-system-regulation/pdf/memorandum-20140606.pdf>.

Core Principles so as to align them with the CPMI-IOSCO Principles.[20] The Dodd-Frank Act specifies that the objective of these additional regulations should be to: promote robust risk management; promote safety and soundness; reduce systemic risks; and support the stability of the broader financial system.

SIDCOs are also subject to oversight by the Federal Reserve Board of Governors (Federal Reserve Board) (see below).

Regulation in other jurisdictions

CME has applied for recognition as a third-country CCP under *Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories* (commonly known as the European Market Infrastructure Regulation (EMIR)). CME is currently a recognised overseas clearing house in the UK, which permits it to offer clearing services directly to firms incorporated in the UK. CME will continue to be subject to this regime in the UK until a decision is taken regarding its application under EMIR.[21]

CME is exempt from the requirement to register as a clearing agency in Ontario and Quebec and is currently authorised in Hong Kong. CME has also lodged a formal application for recognition in Mexico and is in the process of applying for regulatory standing in Japan and Singapore.

3.4.2 The CFTC's supervisory approach

As stated on its website, the CFTC's mission is: to foster open, transparent, competitive, and financially sound markets; to avoid systemic risk; and to protect the market users and their funds, consumers, and the public from fraud, manipulation and abusive practices related to derivatives and other products that are subject to the Commodity Exchange Act.

Title VIII of the Dodd-Frank Act specifies requirements regarding the CFTC's supervision of SIDCOs. Under the Title, the CFTC must conduct at least annual assessments of SIDCOs covering:

- the nature of the operations of and the risks borne by the SIDCO
- the financial and operational risks presented by the SIDCO to financial institutions, critical markets, or the broader financial system
- the resources and capabilities of the SIDCO to monitor and control such risks
- the safety and soundness of the SIDCO
- the SIDCO's compliance with Title VIII of the Dodd-Frank Act.

The CFTC's assessments of all DCOs, including SIDCOs, cover compliance with the applicable CFTC Regulations. In conducting its assessments, the CFTC's practice is to set remedial actions for the relevant DCO or SIDCO if it considers that a requirement has not been sufficiently met, or where it identifies areas in which further enhancements are required. The CFTC does not publish its assessments.

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20 The CPMI-IOSCO report *Implementation monitoring of PFMIs: Level 2 assessment report for central counterparties and trade repositories – United States* assesses the implementation of the CPMI-IOSCO Principles in the United States, as part of broader implementation monitoring in the CPMI and IOSCO member jurisdictions. The report is available at: <http://www.bis.org/cpmi/publ/d126.pdf>.

21 CME Clearing Europe (CME Group's European clearing house) is separately authorised under EMIR and regulated by the Bank of England as a Recognised Central Counterparty.

Title VIII of the Dodd-Frank Act also requires the CFTC to consult with the Federal Reserve Board on the scope and methodology of its assessments of SIDCOs, and provides that the Federal Reserve Board may participate in any such assessment.[22]

In addition, the CFTC has responsibilities for reviewing rule changes proposed by DCOs (including SIDCOs), and has the power to disallow rule changes. In addition, a SIDCO is required to provide advance notice to the CFTC of any proposed change to its rules, procedures or operations that could materially affect its risk profile; and the CFTC is required to consult with the Federal Reserve Board when reviewing these rule changes.

3.5 Progress against 2014/15 regulatory priorities

At the time that CME was granted a CS facility licence, the Bank determined a set of regulatory priorities for CME to ensure that its operational and governance arrangements promote stability in the Australian financial system. These priorities reflect expectations set out in the CFR Regulatory Influence Policy and the CCP Standards. The Bank also set additional expectations relating to CME's observance of the CCP Standards more broadly, reflecting areas where the Bank considered that CME should make changes to its policies, or progress as a matter of priority work that was already ongoing.

3.5.1 Regulatory priorities specifically related to CME's provision of services to the Australian market

As noted above, the Bank's priorities related to CME's provision of services to the Australian market reflect expectations set out in the CFR Regulatory Influence Policy. This policy develops a graduated framework that imposes additional requirements on cross-border facilities proportional to the facility's activities in the Australian financial system. CS facilities that have material Australian-based participation and/or provide services in Australian-related products should have governance and operational arrangements that promote stability in the Australian financial system; those facilities that are systemically important must, in addition, hold an Exchange Settlement Account with the Bank, and the Australian regulators would expect strengthened regulatory influence. Additional requirements for CS facilities that have a strong domestic connection include domestic licensing and incorporation, and controls on the degree of offshore outsourcing of critical functions.

The Bank's expectation at the time of licensing was that CME would not become systemically important to Australia or have a strong connection to the Australian financial system in the near to medium term. Consequently, the Bank's initial priorities related to CME's provision of services to the Australian market reflect only the foundational requirements of the CFR Regulatory Influence Policy, that its governance and operational arrangements support stability in the Australian financial system.

The Bank's initial priorities for CME relating to its provision of services to the Australian market were:

- appropriate representation of Australian membership in governance
- accommodation of local market practices, including that CME should consider accepting Australian government bonds as initial margin
- appropriate representation of Australian membership and regulators in default management
- provision of adequate operational support arrangements to Australian participants.

22 The CFTC also aims to coordinate its assessments with the SEC in situations in which the SEC also has jurisdiction.

As discussed in Section 3.2.3, CME does not currently have any direct Australian-based clearing participants, and its clearing of AUD-denominated OTC IRD remains relatively low. The Bank does not therefore expect CME to make substantial progress against regulatory priorities specifically related to the provision of services to the Australian market until such time that CME has material direct Australian participation or should there be a significant increase in CME's provision of services in Australian-related products.

Nevertheless, CME has made progress against the Bank's initial priority relating to the accommodation of local market practices. CME began to accept Australian government bonds to meet initial margin requirements in July 2015, fully addressing that component of the Bank's priority.[23] In line with its usual practices, CME has placed a cap (of US$250 million) on the amount of Australian government bonds that it will accept from any single clearing participant. In the event that CME achieves material direct Australian participation, the Bank will seek further engagement regarding any additional steps CME might take to accommodate local market practices.

3.5.2 Other regulatory priorities

The Bank's other initial regulatory priorities for CME relate to CME's observance of the CCP Standards more broadly. These priorities arose from the Bank's initial Assessment of CME against the CCP Standards, conducted prior to the Bank advising the Minister on CME's application for an Australian CS facility licence. They reflect areas in which the Bank considered that CME should make changes to its policies, or progress as a matter of priority work that was already ongoing, in order to enhance its observance of the CCP Standards.

Recovery and wind-down plan

The Bank's initial Assessment recommended that CME should implement appropriate recovery and wind-down plans. In accordance with CCP Standard 3.5, the recovery and wind-down plans should describe how CME would continue its critical operations if it suffered extreme losses, or, as appropriate, cease operations, based on identified scenarios in which the ongoing provision of services was threatened. Meeting this priority will also enhance CME's observance of CCP Standard 14.3. The Bank also stated that it expected CME's recovery plan to address how it planned to raise additional equity if required, in accordance with CCP Standard 14.5.

CME has informed the Bank that it expects to finalise its recovery and wind-down plans in mid-2016, subject to CFTC approval. CME has proposed separate (but harmonised) recovery and wind-down plans for each of its three clearing services, i.e. for Base, OTC IRD and CDS products, each of which has its own default waterfall.[24] CME has informed the Bank that it considered the CPMI-IOSCO guidance on recovery planning in developing its recovery and wind-down plans, and has consulted with the CFTC, clearing participants, and other relevant stakeholders.[25]

CME is currently working to implement rules changes that will be required to give effect to these plans. CME has received internal governance approval for changes to rules for its Base service and intends to seek CFTC approval for these changes in Q1 2016. CME has also received internal

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23 At the time it was licensed in Australia, CME already accepted AUD cash as collateral to meet initial margin requirements related to Base and OTC IRD products.

24 As discussed in Section 3.3.3, losses in one CME service cannot be applied to the mutualised resources of the default waterfall of another CME service, and in an extreme situation, a given CME service could also be closed, while the other services remained open.

25 See CPMI-IOSCO (2014), *Recovery of Financial Market Infrastructures*, Bank for International Settlements, Basel, available at <http://www.bis.org/cpmi/publ/d121.htm>.

governance approval for the rule changes required for its OTC IRD and CDS services, and will progress these following the finalisation of the rule changes for the Base service. Details of the proposed rule changes will be made public when they are filed with the CFTC.

Should an event that required the use of recovery tools eventuate prior to the finalisation of CME's recovery and wind-down plans, CME would apply the tools available in its current Rulebook. As discussed in Section 3.3.3, should uncovered credit losses remain following the application of Assessments, for its Base service the tools available to CME would be a full tear-up of contracts and a close-out of any positions. For its OTC IRD Service, CME would use variation margin gains haircutting in conjunction with full tear-up.

The Bank expects to conduct a review of CME's recovery and wind-down plans once they are completed.

Recommendation. CME should complete its work to implement its recovery and wind-down plans. The Bank will expect to conduct a review of these plans once this work has been completed, and to engage with CME regarding how its recovery and wind-down plans meet the requirements of the CCP Standards and the guidance on recovery planning set out by CPMI-IOSCO.

Model testing and validation

As part of its initial Assessment, the Bank set a regulatory priority that CME finalise and implement its model testing and validation processes. Implementation of these procedures should enhance CME's observance of CCP Standard 2.6, as well as elements of CCP Standards 4, 6 and 7. The Bank noted that it expected to engage with CME on the results of its model testing and validation.

CME implemented a Model Validation Framework during the 2014/15 Assessment period. The framework documents CME's validation process, the scope and format of validations, and the governance arrangements for model validations. The framework applies to all models used by CME, including models created by third parties, as well as certain 'business process frameworks' and tools.

The model validation process is governed by the Model Risk Committee. The Model Risk Committee's responsibilities include: requesting model validations; determining the frequency of validations and the model validation schedule; responding to the recommendations from validations and managing the implementation of remediation actions; and ensuring that CME abides by the relevant CFTC rules regarding model validation. The Model Risk Committee carries out its duties in conjunction with the committee that oversees a particular model (e.g. the Credit Committee, Stress Testing Committee or Collateral Committee) and may delegate certain responsibilities to that committee. The Model Risk Committee is chaired by the Head of CME Risk Research, and its members include the Chief Risk Officers of CME Clearing and CME Clearing Europe and staff and senior-level representatives drawn from the other committees.

The Model Validation Framework envisages that validations may be conducted either by external independent consultants or an independent internal model validation function. In either case, validators must be independent from both the developers and the users of the model. CME currently relies on external consultants to conduct its model validations, but has informed the Bank that it is also considering hiring an internal model validation team.

Once the independent validator has completed the model review, model validation reports are reviewed by the Model Risk Committee and are then approved by the Executive Director of Clearing

Compliance and Risk Management (see below). After a model validation is approved, the Model Risk Committee is responsible for establishing a remediation timeline for any of the recommendations it accepts, subject to approval from the Chief Risk Officer.

During the Assessment period, CME hired an Executive Director of Clearing Compliance and Risk Management with responsibility for supervising and coordinating all model validations, selection of validators and liaison with the relevant committees. The Executive Director reports to the Chief Compliance Officer who reports to the Senior Managing Director (President of CME Clearing); the model development and internal audit teams independently report to the Senior Managing Director (General Counsel and Corporate Secretary). The Executive Director presents validations to the Model Risk Committee, but does not formally sit on the committee.

The Model Validation Framework specifies that the CME's Global Assurance team (i.e. internal audit) will periodically assess the model validation process to ensure that it is robust, complies with regulatory and CME requirements, and has appropriate management and controls. The most recent internal audit, which was completed in November 2015, concluded that the overall governance of the model validation process was adequate, the highest possible rating.

During the 2014/15 Assessment period, CME shared with the Bank the results of independent validations of its Risk Management Framework and Liquidity Risk Management Framework. The reviews, which looked at the frameworks at a fairly high-level, did not raise any material concerns. CME has informed the Bank that its Model Risk Committee has scheduled further validations of CME's Liquidity Risk Management Framework and Risk Management Framework, as well as a validation of the Stress Testing Framework, for the first half of 2016. CME has already commissioned independent validations of its Collateral Policy and SPAN margin model, and expects these to be delivered during the first half of 2016. The OTC IRD margin model will also be validated in 2016.

Recommendation. The Bank expects CME to share the reports from the validations that it finalises during the next Assessment period and to engage with the Bank on the results. The Bank will monitor CME's application and the ongoing adequacy of the Model Validation Framework, including the governance process.

Acceptance of letters of credit as collateral

In July 2014, prior to being granted an Australian CS facility licence, CME made changes to its Collateral Policy to reduce the scope of its acceptance of letters of credit as collateral. The Bank set a priority that it would monitor these arrangements, with respect to CME's observance of CCP Standard 5.1.

CME accepts letters of credit as collateral to cover initial margin requirements related to Base products only. Financial-affiliated clearing participants are not permitted to meet house initial margin requirements using letters of credit, except to meet intraday margin calls as a 'buffer', although they may provide letters of credit to meet non-financial clients' margin obligations.[26] The value of letters of credit CME will accept from any clearing participant, aggregated across house and client accounts, is capped at the lesser of 25 per cent of that participant's initial margin requirements or US$500 million.

26 The use of the buffer allows a clearing participant to temporarily use letters of credit to cover intraday liabilities arising from new trade registrations and intraday margin liabilities on existing positions. If this facility is used, the letter of credit must be replaced with another form of collateral by the next settlement cycle. CME has informed the Bank that no clearing participants have posted letters of credit as a buffer over the past few years.

Limited exemptions to this cap, up to US$1 billion, may be granted to clearing participants that wish to post additional letters of credit on behalf of particular non-financial clients. Exemptions must be approved by the Internal Credit Committee (ICC) on recommendation from the Credit Team, and are reviewed at quarterly ICC meetings.

At end December 2015, CME's clearing participants had applied US$2.2 billion of letters of credit as collateral to meet margin requirements for Base products, equivalent to 2.4 per cent of total initial margin requirements for those products. During the 2014/15 Assessment period, three clearing participants were granted exemptions, allowing each to post additional letters of credit on behalf of a non-financial client.

Recommendation. The Bank will continue to monitor CME's acceptance of letters of credit as collateral, including the extent of exemptions granted.

Liquidity risk framework

CME implemented a formal Liquidity Risk Management Framework in the December quarter of 2013. In its initial Assessment, the Bank set a regulatory priority that CME continue to enhance this framework, in accordance with CCP Standard 7.1.

In February 2015, CME introduced liquidity contingency rules. These rules allow CME to substitute securities for cash contributed to the Guaranty Fund, and to satisfy variation margin obligations to a clearing participant by selling US Treasuries to that participant, where it is unable to obtain sufficient liquidity to meet same-day obligations. During the 2014/15 Assessment period CME also hired staff with specific liquidity risk management expertise. CME has indicated that it is currently focusing on developing management reporting tools to further assist it in managing its liquidity risk.

CME also conducted an independent validation of its Liquidity Risk Management Framework during the Assessment period. As noted above, the validation was conducted at a fairly high level and no material concerns were raised. The Bank expects CME to conduct more detailed validations of the models and procedures underlying the Liquidity Risk Management Framework over the coming periods. CME has scheduled a further validation of the framework for early 2016, which will also cover liquidity stress-tests. For the purposes of liquidity stress-testing, CME currently uses the same scenarios used to assess the adequacy of its Guaranty Funds, but has indicated to the Bank that it will consider whether to develop liquidity-specific scenarios.

Under Section 806 of the Dodd-Frank Act, CME is eligible to apply for an account at the Federal Reserve Bank and may be granted access to the Federal Reserve Discount Window in unusual or exigent circumstances as part of its designation as a SIDCO by the Financial Stability Oversight Council.

Recommendation. The Bank expects CME to share the reports from the validations that it conducts of its liquidity stress-testing model and any further validations of the Liquidity Risk Management Framework, and to engage with the Bank on the results. The Bank expects to continue to engage with CME regarding its management and governance of liquidity risk more broadly, including how the Board oversees the management of liquidity risk.

Management of counterparty concentration risk in CME's investment portfolio

In its initial Assessment, the Bank noted that CME invested the bulk of its cash collateral (including cash posted to it by clearing participants) on an unsecured basis with a relatively small number of commercial bank counterparties. The Bank set a regulatory priority that CME should manage counterparty concentration risk in the investment of its treasury investment portfolio, to enhance its observance of CCP Standards 15.3 and 15.4. At the time, CME informed the Bank that it was working to diversify the number of counterparties for its investment of cash collateral and to make such investments on a secured basis.

At end December 2015, CME had around US$30 billion of cash collateral invested, which represents around 23 per cent of total collateral held. CME also maintains balances of uninvested cash collateral at its settlement banks to act as floats, accounting for around 14 per cent of CME's cash collateral held at end December 2015. CME invests cash – including cash margins, Guaranty Fund contributions, membership requirements or residual intraday variation margin – in accordance with CME's Investment Policy. CME's key investment principles are, in order of priority: safety and preservation of principal; liquidity; and return. The Investment Policy establishes minimum credit standards for CME's investment counterparties, and states that single counterparty limits should be determined on a quarterly basis. The Investment Policy also states that investments should be diversified, but does not impose a defined limit on unsecured investments.

During the 2014/15 Assessment period, CME entered into new arrangements with several additional investment counterparties, for both secured and unsecured investments, including five money market funds. At end December 2015, 51 per cent of CME's cash collateral investments (excluding uninvested amounts held at settlement banks) were on a secured basis. The remainder of CME's cash collateral is invested on an unsecured basis in overnight deposits with commercial banks; at end December 2015, 79 per cent of CME's unsecured investments were held with three counterparties. During the Assessment period, CME increased by one the number of counterparties it actively invests with on an unsecured basis. CME has since begun investing on an unsecured basis with a further commercial bank, and has informed the Bank that it is also in discussions with five additional counterparties.

CME maintains a fully secured committed line of credit, sized at $7 billion as at 31 December 2015, with a consortium of domestic and international banks which it may use to provide temporary liquidity in the event of default of a depository institution or other events. The Bank expects to continue discussions with CME over the coming period regarding its unsecured deposits with commercial banks.

CME has applied to the Federal Reserve Board for a Federal Reserve Bank account. CME has indicated that, should it be granted a Federal Reserve Bank account, it would expect to place some of the cash collateral it receives in the account. This would reduce CME's exposure to investment risk.

CME has informed the Bank that it is also in discussions about opening accounts with two other central banks.

Recommendation. The Bank expects CME to continue to reduce the size and concentration of its unsecured investments of cash collateral with non-government obligors. The Bank expects to engage further with CME as it implements these changes and will continue to monitor CME's cash collateral investments. The Bank will also engage CME to understand the governance arrangements regarding its investment exposures in more detail, including what oversight the Board has of these exposures.

FMI links

CCP Standard 19 requires that a CCP that establishes a link with one or more FMIs should identify, monitor and manage link-related risks. The Standard also sets specific requirements regarding links that CCPs maintain with other CCPs. CME maintains three links with other CCPs: a Mutual Offset

System (MOS) arrangement with SGX and cross-margining agreements with the Fixed Income Clearing Corporation and Options Clearing Corporation.[27] In its initial Assessment of CME, the Bank set a regulatory priority that covered several elements of the risk management of these link arrangements, including eligible collateral and the calibration of the value of collateral requirements to cover exposures across the links. The Bank noted, however, that the exposures across these links were relatively small compared to CME's overall exposure, and the Bank's priority on this matter was largely conditional on any material increase in exposures.

During the Assessment period, CME provided the Bank with updated data on the exposures across its links with other CCPs. The data indicate that, although CME's exposures across one of the links have increased, in absolute terms they remain relatively small compared to CME's overall exposure.

In its initial Assessment, the Bank also noted that CME accepted letters of credit to cover exposures across its link with SGX. The Bank stated that it expected that CME would not permit letters of credit as acceptable collateral for any future links. CME has not entered into any further links during the period.

Recommendation. The Bank will continue to monitor CME's links, with a view to re-visiting this issue if there is a material increase in exposures. The Bank expects to be notified by CME of any such increase in exposures. In such an event, the Bank will also seek to engage with other relevant regulators.

The Bank expects CME to provide accurate and timely data regarding its exposures across its links with other CCPs.

The Bank expects that CME will not permit letters of credit as acceptable collateral for any future links.

27 The MOS is a peer-to-peer CCP link that permits clearing participants to execute on a trading venue cleared by one CCP, and have the position transferred to the other CCP to carry. Cross-margining arrangements allow clearing participants, or their customers, to reduce their total initial margin requirements where they hold related, offsetting positions at the two CCPs that participate in the arrangement. Due to the product scope of CME's Australian CS facility licence, the SGX link is the only link that is potentially of direct relevance to Australian clearing participants.

Abbreviations

ASIC	Australian Securities and Investments Commission
CBOT	Chicago Board of Trade
CCP	Central counterparty
CCP Standards	Financial Stability Standards for Central Counterparties
CDS	Credit default swaps
CFR	Council of Financial Regulators
CFR Regulatory Influence Policy	Policy document entitled *Ensuring Appropriate Influence for Australian Regulators over Cross-border Clearing and Settlement Facilities*
CFTC	Commodity Futures Trading Commission
CME	Chicago Mercantile Exchange Inc.
CPMI	Committee on Payments and Market Infrastructure
CS	Clearing and settlement
DCO	Derivatives Clearing Organization
Dodd-Frank Act	*Dodd-Frank Wall Street Reform and Consumer Protection Act*
EMIR	Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories
Federal Reserve Board	Federal Reserve Board of Governors
FMI	Financial market infrastructure
FSS	Financial Stability Standards
FX	Foreign exchange
HVaR	Historical Value at Risk
ICC	Internal Credit Committee
IOSCO	International Organization of Securities Commissions
IRD	Interest rate derivative
MOS	Mutual Offset System
MoU	Memorandum of Understanding
OTC	Over-the-counter
SEC	Securities Exchange Commission
SGX	Singapore Exchange Limited
SIDCO	Systemically Important Derivatives Clearing Organization
SPAN	Standard Portfolio Analysis of Risk
US	United States