



THOMAS MURRAY

London,

29th July 2011

Mr. Daniel Heller,
Head of Secretariat, CPSS
Mr Masamichi Kono,
Chairman, IOSCO Technical Committee

Dear Mr. Heller and Mr. Kono,

In the following pages Thomas Murray sets its view and position regarding the CPSS-IOSCO paper on “Principles for Financial Market Infrastructures” published in March 2011.

Before commenting on the consultative report, we believe it is relevant to describe Thomas Murray. We are an independent London based company with more than fifteen years of experience helping pension funds select and monitor custody and related services (our clients hold approximately £4 trillion of assets under custody).

In addition, we are a provider of global custodian and sub-custodian bank ratings that evaluate asset safety, asset servicing and operational risk exposures of these entities. We also provide Central Securities Depositories (CSD) and Capital Market Infrastructure Risk Ratings (CMIRR) that help clients identify and manage asset safety risks. We are widely recognised as an independent expert in the evaluation of CSDs ability to manage risk.

Thomas Murray has offices in four locations – Australasia (Melbourne), Europe (London), North America (Toronto) and Latin America (Bogota). Our staff members come from diverse backgrounds in the custody and banking industry. For further information about us visit:

www.thomasmurray.com.

The events in global financial markets in the last four years have highlighted the importance of assuring that systemically important entities are sound and stable. Indeed, the crisis following the collapse of Lehman Brothers could have been far worse if key participants of the financial industry had defaulted as a result of the market developments. In this sense, the review of recommendations to FMIs is a prudent step to ensure that the industry is safeguarded against another potential future crisis, especially as financial markets are not yet stable and there continues to be a clear and present danger to market stability across the world.

It is in this context that Thomas Murray has reviewed the CPSS-IOSCO paper on FMIs. Our response is divided into two sections. In the first part, we address some of the questions the committee asked in the cover note to the consultative report. In particular, we believe that:

- Coverage for liquidity and credit risk should be based as a function of market concentration after extensive stress-testing has taken place. The committee’s approach as set out in the cover letter (i.e. FMI should assure that there are resources to cover the default of one or two participants) is limited and fails to provide a solid basis for risk management.
- While it is essential to ensure that FMIs have enough reserves to enable them to operate if their sources of revenue are adversely impacted by external factors, the path recommended by the committee lacks an understanding of the true problems that could threaten the financial

sustainability of an FMI. The committee has to acknowledge that perhaps more important than the size of the reserves is the quality of the assets that form such reserves and where these assets are held. Also, the committee does not make any recommendation on the level of liability an FMI should be prepared to accept, which has a direct impact on the financial stability of the organisation.

- The document has embedded the Thomas Murray methodology for the risk rating of central securities depositories (CSDs), which should be taken as annex to the last question asked by the committee.

The second part of the document contains a list of issues that we feel must be addressed or considered by the committee and that are not present in the paper released for consultation. These are:

- The “one size fits all” approach adopted by the committee is suboptimal. Indeed, we feel it is extremely simplistic (and even risky) to issue the same recommendations to entities that undertake different tasks and that have, therefore, different structure, needs and risks.
- There are no recommendations concerning asset servicing. This is a significant oversight on the part of the committee as it leaves out a key element of risk.
- The paper does not include any comments on the committee’s view regarding beneficial owner and omnibus account. While each model has key advantages and drawbacks, we feel it would be useful for the industry to have a recommendation from the committee on what they regard as the optimal account structure model.
- The paper fails to address key issues related to securities lending. The different changes towards this practice adopted in some markets indicate that regulators appear to be taking a reactionary stance. Meanwhile, in other countries the view of authorities is quite the opposite. Perhaps the committee could express its opinion on what should be the market’s approach to securities lending.
- The committee does not give enough emphasis on the need to assure that FMIs have access to central bank money. In addition, there is no discussion on the role monetary authorities should play when FMIs are under stress.
- On the topic of transparency, while there is a long discussion on this issue, the paper does not address the need to have all FMIs (not only trade repositories) disclose basic market data and statistics to participants, regulators and the general public.
- The committee should encourage participants to make rules and regulations available in English through their websites. In addition, the paper should ask that FMIs publish the outcome of their operational audits.
- The committee gives particular emphasis on a series of concepts such as ‘future potential exposure’ and ‘extreme but plausible market conditions’. In the paper, these two elements are at the centre of the FMIs’ risk analysis. Yet, the committee fails to provide a clear definition of them and does not encourage participants to discuss among themselves what should be the ideal criteria used in the core stress-testing.

We acknowledge that the task that the committee faces is not an easy one. However, the review of the recommendations is an excellent opportunity to strengthen financial industries across both developed and emerging markets. It is for this reason that we have taken a critical stance when reviewing the

paper. Indeed, we feel the overall approach of the document should be revisited and the committee should give more emphasis to transparency and investor protection.

Yours sincerely,

Simon Thomas
Chief Executive Officer
Thomas Murray

Part 1 - Questions Posted by the Committee

The cover note to the consultative report has asked questions on six specific topics: credit risk, liquidity risk, segregation and portability, general business risk, access and interoperability and finally, assessment of methodology. The questions for the first two areas (credit and liquidity risk) will be answered in a single response. Admittedly, credit risk refers to counterparty risk and the principle is mainly addressed to CCPs, while liquidity risk has been given a broader scope covering all FMIs. Nonetheless, the questions in these areas are quite similar and to an extent can be addressed jointly.

1.1 Credit and Liquidity Risk

The committee asks what would be the pros and cons of establishing a minimum requirement that FMIs (but mainly CCPs) should make provisions in case of default of either “one” or “two” of its participants. Such provisions should assume that as a result of the default the FMI would face the largest exposure (in the case of credit risk) and largest potential open positions (in the case of liquidity risk) under extreme but plausible market conditions.

In our view, the question should be addressed from a different angle - we don’t see that the criteria be set to cover the default of one or two participants. We suggest that a different approach is preferable by looking at the market concentration. If a market is heavily concentrated then coverage for the largest two members should be sufficient to avoid a collapse of the FMI. However, such measures may be inadequate if the market has a moderate level of concentration. Take an example: assume that there are 15 participants in the market with relatively similar market share as shown in the list below.

Table 1

Participant	Market Share (%)
A	10
B	9
C	8
D	7
E	7
F	7
G	7
H	7
I	6
J	6
K	6
L	6
M	6
N	6
O	2

Also assume that for a default scenario the FMI decides to adopt the “cover two” approach. This implies that the CCP would need to ensure that it has sufficient resources to cover the equivalent to 19% of all net obligations. However, if the situation is worse than expected and it includes the third largest participant, the FMI would not have resources to cover net exposures equivalent to 27% of total obligations. Therefore, it appears to be a more adequate approach to decide on level of coverage

(either for credit or liquidity) based on concentration levels. This risk should also cover systemic risk. If systemic risk is high in the market, then it is likely that the default of a single participant could lead to the default of two or more participants, therefore coverage would be insufficient.

The thresholds of concentration aforementioned should be properly identified by the FMI during the period of stress testing. The basis of the stress test is defined by the “extreme but plausible market conditions”. This concept is frequently quoted by the committee but no guidance is provided on what parameters should be included when defining these scenarios. If an FMI fails to accurately set the parameters for “extreme but plausible market conditions”, then thresholds are likely to be biased and thus, coverage for counterparty and liquidity risk would be inadequate. Admittedly, the degree of deviation of market conditions across markets makes it extremely difficult to clearly define what “extreme but plausible market conditions” means. Nonetheless, some effort should be made to shed more light on this issue. For example, the committee could encourage FMIs to share their approach to stress-testing and their understanding of “extreme but plausible market conditions”, which would be at the core of their testing. Given the level of interconnectedness in the current global context, the exchange of such information would prove to be a helpful practice. Transparency in this issue may assist CCPs competing on risk.

1.2. General Business Risk

General business risk is covered by TM’s methodology for CSD under financial risk, which is the ability of the CSD to operate as a financially viable company. This risk concerns the financial strength of the depository and whether its capital is sufficient to meet the on-going operation of the organisation.

The committee is seeking comments on the pros and cons of establishing a quantitative and/or qualitative requirement for the amount of liquid net assets funded by equity that an FMI should hold to cover general business risk. More specifically, the committee seeks advice on the convenience of establishing that amount to six, nine or twelve months of operating expenses.

Overall, the idea of ensuring that an FMI has resources that would allow it to fulfil its obligations during a number of months even if the market does not operate and revenues are not forthcoming makes perfect sense. The events in the Middle East and West Africa are clear examples of the relevance of FMIs having sound financial risk arrangements that would ensure the sustainability of the entity if the market closes for extended periods of time.

That said, the disadvantage of setting strict and/or prescriptive financial criteria is that it reduces the FMI’s room to manoeuvre during periods of economic hardship. In this sense, the question of whether there should be enough reserves for a specific number of months is too prescriptive. There might be occasions during which a FMI might reduce its capital to cover certain liabilities and in doing so, might not be able to follow the proposed criteria.

In any case, the number of months of coverage should be secondary as there are more important issues that have not been considered in the document. Indeed, there are four items related to this issue that should be carefully considered before attempting to answer the committee’s questions. Such items are: First, the type of asset held as part of reserves. Second, the arrangements set in place to have access to those reserves. Third, the level of liability FMIs should accept. Fourth, additional resources an FMI may have access to such as bank guarantees and/or the explicit backing of the government.

Regarding the type of assets held as reserves, the key issue at stake is the quality of the assets that form the reserves. In some cases FMI managers may choose to invest in money market instruments and other short term securities in order to maximise the use of their reserves. The problem is that in the case of market breakdown (e.g. Egypt) or a major economic crisis (Greece-style), the value of the

securities may plummet (dragging down the FMI's level of reserves - even if such securities are government backed) or the FMI may not be able to liquidate securities.

From a risk management point of view, perhaps the ideal approach would be to hold reserves in cash at the central bank. Of course, this is a suboptimal approach from a cash management perspective and the FMI's boards will, therefore, continue to consider investment in short-term securities. In such cases, the committee could recommend that securities held as part of the FMI's investment strategy comply with a minimum requirement in terms of quality; i.e. a risk rating threshold should be established. For instance, if the portfolio of the FMI includes public debt instruments, the sovereign risk rating of such country should be "investment grade" or above.

In addition, the committee should make some recommendations regarding the level of diversification of investment constituting the FMI's reserves. More specifically, the CPSS-IOSCO document should set the ideal ratio of cash/securities that an FMI should hold as reserves, indicating the quality of those securities.

The next logical step is to decide where FMIs should hold their reserves. Of course, the securities side of reserves would be held either at a CSD or with the central bank (in case of government short term debt) if this is market practice. The key question is where should the cash side of reserves be held. Ideally, the option that minimises risk is to have FMIs deposit cash reserves with the central bank. This option eliminates the risk associated with holding reserves with a commercial bank. However, in some jurisdictions this might not be possible as only those organisations that have a banking license are allowed to have accounts with the central bank.

If it is extremely difficult to allow an FMI to have an account at the central bank and an FMI has no other option but to deposit its reserves with commercial banks, then the committee should consider issuing further guidelines for this area. Admittedly, the paper does indicate that the FMI's management board should undertake a risk analysis of its custody and investment strategies. Nonetheless, the report fails to indicate that if reserves are to be held in a commercial bank, such institutions should meet a minimum level of risk rating and they must comply with the latest Basel capital requirements. Furthermore, FMIs should undertake due diligence when deciding which entities to use for banking. Also, FMIs must seek to distribute the reserves across several banks to minimise exposure to a single entity. More importantly, reserves (whether cash or securities) should be held at beneficial owner if market rules allow for the designation of securities and cash. This would ensure that if there is crisis, either at a CSD or custodian (in case of securities) or a bank (for cash), the FMI's reserves are ring-fenced and protected.

The third element of key importance in general business risk is the issue of liability. Indeed, the level of liability that an FMI can accept is an essential piece of information in assessing the general business risk of the entity. Of course, liability is often defined by local legislation and regulation. But the degree of divergence on the liability that FMIs face is quite significant. Taking the example of CSDs, in some markets the CSD will accept liability from direct losses if and only if these occur as a result of gross misconduct or the negligence of the CSD. In other countries, CSDs are not only liable for direct losses, but also for indirect or consequential losses. This topic has not been discussed in the document and it would be ideal to have the committee's view on the matter.

The fourth component to take into account is the additional support that an FMI may have during times of crisis. Access to other resources or the backing of the government (for instance in the case where an FMI is state-owned) makes a significant difference in the entity's ability to survive during a prolonged crisis. While the paper does make reference to these aspects, it does so from a different perspective. The committee should amend its approach on the financial backing of an FMI to account for these other elements.

1.3. Assessment Methodology

Thomas Murray methodology for the risk rating assessment of CSDs provides an example of the areas that should be covered in order to establish the risk exposure of an FMI. The purpose of this rating is to determine the extent to which the depository minimises risk and maximises asset safety for participants and investors. More specifically, our methodology establishes the risk exposures for investors in the post trade capital market infrastructure when transactions are settled while securities are held in a particular depository. The rating assesses the effectiveness of a CSD and the processes used in post-exchange settlement and safekeeping to minimise investor risk exposures. CSD Ratings can be compared across markets. It should be noted that a CSD Rating does not assess trade execution risk but the settlement, safekeeping and asset servicing risks after trade execution.

For further information on this, see the embedded file in the annex.

Part 2 – Additional Comments and Suggestions

The first part of this document contained our answers to some of the specific questions posted by the committee in the cover note to the consultative report. In the following paragraphs we express our concern with some components of the CPSS-IOSCO paper.

2.1. Asset Servicing

The committee's report does not properly address the relevance of asset servicing and asset safety. As mentioned above, this is a key risk component that must be properly taken into account when assessing the risk exposure of an FMI such as a CSD.

Asset Servicing Risk is the risk that a participant may incur a loss arising from missed or inaccurate information provided by the depository, or from incorrectly executed instructions, in respect of corporate actions and proxy voting.

This risk arises when a participant places reliance on the information a depository provides or when the participant instructs the depository to carry out a corporate action on its behalf. If the depository fails either to provide the information or to carry out the instruction correctly then the participant may suffer a loss for which the depository may not accept liability. The depository may provide these services on a commercial basis, without statutory immunity, or it may provide the service as part of its statutory role, possibly with some level of protection from liability. This risk is likely to become much higher when international securities are included in the service.

Thomas Murray amended its CSD Risk Methodology in 2004 to account for the increase in asset servicing being taken on by CSDs. Potential losses from missed or incorrectly executed corporate events can be of significant magnitude, and few CSDs have adequate capital to protect against this exposure (in comparison to banks for example). The committee may want to reflect on the ongoing debate in Europe in relation to the proposed CSD Regulation and the role of CSDs in non-core activities such as asset servicing.

2.2. Asset Safety and Account Structure

A key element that has been left outside the scope of analysis is the ideal account structure that CSDs should establish in order to minimise the risk faced by investor. There is an on-going debate regarding the benefits and disadvantages associated to either retail or whole sale models. The committee should take this opportunity to indicate its position in relation to beneficial owner accounts or omnibus accounts.

Clearly from a risk perspective, the beneficial owner account structure is preferable in giving protection to the end investor. However, the participants of a CSD, being the custodian or broker, typically prefer to have an omnibus account structure for operational efficiency purposes and will often put pressure on a CSD to adopt such arrangements especially where the CSD operates as a utility for the market participants. A clear statement from the committee on the desirability of the beneficial owner account structure to protect the end investor is therefore advisable.

2.3. Securities Lending and Short Selling

The committee has not made any comments or amendments to its position on the topic of securities lending; in fact, the recommendation on this matter dates back to November 2001 when the Recommendations for Securities Settlement Systems (RSSS) were published by CPSS-IOSCO.

The developments in global financial markets in the last four years - those same events that motivated the review of the principles for systemically important financial entities - have put securities lending; or more specifically short selling, in the spot-light. As a result of this, regulators across the world have taken reactive measures in this area. Indeed, there has been a clampdown on short selling (or various forms of this practice) in some European, Asian and American markets. The type of measures adopted by regulators has varied both in intensity and duration; in some countries there has been an outright ban on naked short selling. In other countries the regulators have decided to tighten short selling rules either on a permanent or temporary basis, but allowing this practice to continue, while in others it has required an improvement of reporting of short sales.

In some emerging economies, authorities' attitude towards securities lending and short selling has been completely different to that adopted in developed countries. Of course, such a restrictive approach is related to the intrinsic features and characteristic of emerging markets. Admittedly, there have been a few changes in this area; indeed, in some Middle Eastern markets, authorities have relaxed their position on securities lending. Nonetheless, the committee's silence on this particular topic is puzzling. If their view on securities lending as a whole has not changed, it is understandable that they might not amend their position. That said, CPSS-IOSCO should shed some light regarding their opinion on short selling in the context of the worldwide controversy surrounding this issue.

Equally puzzling is the committee's silence on the current modus operandi of securities lending markets. The committee fails to address the need to ensure that securities lending is undertaken under a regulated framework that permits, not only the securities lending segment to operate efficiently, but also that ensures an optimal level of transparency. Much of the securities lending operates in the OTC market and given the desirability of moving securities transactions to the regulated market, it would have been expected that the committee would have provided some guidance in this area.

2.4 Use of Central Bank Money

While the use of central bank payment systems as vehicles to conduct the cash leg of settlement is mentioned in Principle 9, it seems that there is insufficient emphasis on the importance of assuring that all trade settlements are conducted through the central bank.

It is important that the principle be strengthened around this point as in some markets central banks have not been sufficiently progressive in developing their real-time gross settlement (RTGS) systems or have denied CSD or securities settlement systems (SSS) access to their payment system (such as in the case of Chile's CSD).

If the use of central bank money cannot be utilised, then the payment system of commercial banks can be employed. However, the document should stress that the latter alternative should be considered a second best option as this practice does not efficiently minimise systemic liquidity and/or credit risk. If the financial stability of key participants is under pressure, it would be an assurance for investors, both domestic and foreign, to know that the cash settlement leg of all transactions is undertaken using the safest system available which is provided by the monetary authorities.

An issue related to central banks and that has not been addressed by the committee is the role monetary authorities should have in case a systemically important entity collapses. Should central banks have some kind of obligation to provide support to an FMI in case of default? If so, what kind of support

should monetary authorities offer? More importantly, what changes in the regulatory or legal framework will have to take place in order to allow FMI's to receive such support in times of crisis? This set of questions become even more important when considering the level of integration of financial markets across the world. Yet, the committee has failed to make a series of recommendations on this area.

2.5 Transparency

The report makes significant emphasis on the importance of transparency and the timely disclosure of information. The spirit of the document is partially driven by the intention to enhance transparency in the industry. In this sense, the committee could make additional recommendations that would complement this general idea. We have listed these ideas below:

- Principle 24 is dedicated to the disclosure of market data. However, the emphasis is made on trade repositories. The committee should extend the scope of this principle to all FMIs in order to promote a culture of market data disclosure and statistical analysis of market trends in the post-trade sector. The latter implies that the committee asks that FMIs engage more actively in data mining and analysis. At Thomas Murray we have noticed over the years that a large number of CSDs across the world struggle to provide basic information such as market concentration, data on failed trades and even on settlement activity.
- Disclosure of data should not be limited to direct participants. There are many other stakeholders that should have access to the information. Indeed, much of the data should be made publicly available unless there are strong confidentiality eg security reasons for not doing so; and even so, basic statistics should be disclosed openly through the FMI's website.
- In those markets where English is not the first language, FMIs should disclose documents, rules and procedures in English. It is recognised that English is the common business language used across continents in the industry. Thus it only makes sense to publish all relevant information both in the market's official language and in English.
- The committee discusses through the paper the relevance of conducting audits at different levels of an FMI. However, little is mentioned regarding the disclosure of the outcome of such exercises. The outcome of audits (especially operational audits) should be properly disclosed to the public to assure participants that the FMIs have taken the necessary steps to minimise, mitigate and prevent risk. For example some CSDs have published public ratings and provided the outcome of SAS 70 type audits.

2.6 Exchange of Information and Further Clarification of Key Concepts

The committee has discussed in length the relevance of an FMI making adequate preparations for liquidity, credit and general business risks, as well as guidelines for collateral and margins. At the core of these principles is the use of stress tests, which are key tools that would enable FMI management and regulators to make optimal informed decisions regarding minimum levels of coverage, requirements, risk tolerance, etc. In addition, the committee clearly indicates that good stress-testing should account for "*potential future exposures*" and "*extreme but plausible market conditions*".

In this context the recommendations of CPSS-IOSCO make perfect sense. The only drawback to this approach is that the committee fails to define what constitute "*potential future exposures*" and "*extreme but plausible market conditions*". While some work has been done in the past regarding

stress-testing, the committee does not shed light on what constitutes these two concepts and leaves it up to the readers to understand this at their own accord.

The problem with this approach, as mentioned above, is that if the parameters that constitute “*potential future exposures*” and “*extreme but plausible market conditions*” are not properly defined, the outcome of all stress tests will be biased. Thus, the criteria and decisions made by FMI management and the regulator will be inadequate and the industry will be unnecessarily exposed to credit and liquidity risk.

The concerns regarding the definition of appropriate parameters for stress-testing are relevant for both developed economies as well as for emerging markets. The latest results of stress-testing in Europe were controversial in the context of the Greek debt crisis. In emerging markets the lack of experience that some FMIs may have is a paramount obstacle. Thus, without additional guidance the task may appear to be difficult.

Some claim that it is impossible for the committee to adopt a prescriptive approach to these concepts given the significant differences of markets across the world. Admittedly, it is far from ideal to define strict parameters for “*potential future exposures*” and “*extreme but plausible market conditions*” as country and market specific elements must be taken into account with special attention. However, there are ways to overcome this dilemma.

Our suggestion on this area is that the committee does not attempt to define its understanding of “*potential future exposures*” and “*extreme but plausible market conditions*”, and avoid a one-size-fits-all approach. We suggest that instead the committee encourages FMIs across the world to share and publish the parameters and conditions that apply according to their own conditions. While there are significant economic, political and legal differences across markets (no two markets are identical), there are also strong similarities that can be used to share experiences and expertise among FMIs. The exchange of information in this area would be extremely useful at three specific levels (i) it enhances FMI’s understanding of stress-testing and parameter definition; (ii) permits model calibration and (iii) slowly allows FMIs to take aligned positions in these areas, which could, in time, enhance the stability of markets across the world and allow FMIs to take coordinated actions in case of emergency. The latter element is important given the interoperability and links between some FMIs.

Annex – Thomas Murray Risk Rating Methodology



CENTRAL SECURITIES DEPOSITORY RATINGS

(“CSD Ratings”)

METHODOLOGY

MARCH 2007



THOMAS MURRAY



Methodology for determining the Central Securities Depository Ratings (CSD Ratings)

Purpose

The purpose of rating a Central Securities Depository (CSD) is to determine the extent to which the depository minimises risk and maximises asset safety for participants and investors.

A CSD Rating assesses the risk exposures for investors in the post trade capital market infrastructure when transactions are settled while securities are held in a particular depository. It assesses the effectiveness of a CSD and the processes used in post-exchange settlement and safekeeping to minimise investor risk exposures. CSD Ratings can be compared across markets. It should be noted that a CSD Rating does not assess trade execution risk but the settlement, safekeeping and asset servicing risks after trade execution.

The CSD Rating assesses the key processes and procedures required to hold, settle and service securities and includes an analysis of custody, clearing and settlement procedures within a CSD.

Risk elements excluded from consideration include investment risk, legal risk, macroeconomic, political and social trend analysis.

CSDs vary country by country. Components that may be found in a CSD include:

- Matching systems
- Central counterparty or clearing house
- Settlement and safekeeping mechanisms
- Asset servicing mechanism
- Cash settlement systems

The procedures for settlement and safekeeping can be highly automated or they may be manual processes operating outside of CSDs (for example, where OTC trades settle between brokers). The CSD Ratings only assesses mechanisms operated by CSDs, although they take account of market mechanisms and market regulations that support the mitigation of risk exposures.

Central counterparties or clearinghouses are often separate from the CSD (but in some countries these operations are combined in a single legal entity). Only a few CSDs are actually banks that can carry out cash settlement on their own behalf. Typically, CSDs instruct cash settlement either via appointed settlement banks or directly to the central bank. In some cases, central banks operate the CSD function, usually for the safekeeping and settlement of government securities.





The CSD Rating and associated individual Risk Exposure Assessments¹ (REAs) enable an investor to compare CSD risk exposures across markets. The CSD Ratings are risk exposure ratings based on an absolute and hence comparable scale. (Refer to Risk Definitions - Appendix). The assessments measure the risk exposure an investor has to other participants using the system, as well as to the CSD itself irrespective of the particular method adopted to settle and safe-keep securities – there may be different settlement methods available within a CSD. Thus, for example, it is impossible to directly compare the settlement processes of DTCC in the USA with those of CBLC in Brazil. However, it is possible to compare the risk exposures which investors in the USA and Brazil are exposed to when buying, selling or holding securities in the respective CSDs in those markets. For example, the particular methods chosen to prevent failing settlements (auto-borrowing, buy-ins or blocking of securities/cash) is not as important as the effectiveness of the chosen methods to minimise risk exposures arising from failing settlements.

CSDs traditionally administer securities, either in immobilised or dematerialised form and in many cases, co-ordinate the delivery versus payment (DvP) of securities against cash. CSDs are often monopolies and are run as market utilities. Surpluses are often used either to reduce fees or provide rebates to members/participants. Many CSDs have completed the process of demutualisation in recent years and now engage in commercial activities, which frequently alters their risk profile. In addition, many have broadened their participation criteria which may impact the counterparty risk associated with their use.

¹ The Risk Exposure Assessments are an assessment for each of the risks covered within the CSD assessments. They refer to Asset Commitment Risk, Liquidity Risk, Counterparty Risk, Financial Risk, Operational Risk and Asset Servicing Risk.





Key Criteria

The key criteria for assessing CSDs are as follows (Refer to Appendix II for the risk definitions):

There are six primary risks being asset commitment, liquidity, counterparty, financial, operational and asset servicing risk.

- For asset commitment risk, liquidity risk and counterparty risk:
 - Factors influencing risk include: Securities and cash settlement systems, securities and cash delivery times, access to credit facilities, access to stock lending facilities, nominee and registration arrangements, settlement cycles, participation criteria, surveillance arrangements, capacity in which CSD operates, settlement assurance arrangements and the existence of Delivery versus Payment arrangements.
- For financial risk and operational risk:
 - Factors influencing risk include: Procedures and controls surrounding the clearing, settlement, safekeeping and asset servicing functions, financial condition of the CSD, ownership arrangements, ability to replenish funds through income in fee review, insurance arrangements, disaster recovery and business continuity arrangements and liability to participants for operational errors.
- For asset servicing risk:
 - Factors influencing risk include: Corporate action and proxy arrangements, centralised information source, obligations on issuers to provide information to the CSDs and CSDs' liability for the accuracy, completeness and timeliness of corporate action information and the processing of corporate action instructions.

In compiling the CSD Rating, a series of key criteria (refer to the above) are assessed to form an opinion on the magnitude of each risk exposure.

Determining the CSD Rating

The CSD Rating is derived from individual REAs.

The overall REA for each of the risks is aggregated and a weighting applied to each risk to produce the resulting CSD Rating. Some of the individual REAs may be adjusted to take account of the quality of management expertise prior to aggregation.

The Thomas Murray Rating Policy Board reviews individual criteria and CSD and REA ratings as part of the rating approval process.





Appendix I: CSD Rating and REA Scale

A Central Securities Depository Rating and Risk Exposure Assessment (REA) are Thomas Murray's opinion of the ability of a central securities depository to minimise specific post trade risk exposures suffered by investors when investing in the related country and holding their securities in the depository. The overall assessment assigned to the central securities depository is based on Thomas Murray's assessment of six individual Risk Exposure Assessments. The CSD Rating and the six REAs are presented using an alpha scale from "AAA" being the highest rating to "C" being the lowest rating. The ratings correspond to Thomas Murray's assessment of risk exposure based on relevant factors influencing each risk exposure evaluated. They take into account the structures, procedures, resources and controls used within the central securities depository to minimise investors' risk exposure to potential losses when investing in the country. The scale indicates that Thomas Murray's opinion is that the level of risk exposure incurred by investors within the central securities depository is:

AAA		extremely low
AA+	}	very low
AA		
AA-		
A+	}	low
A		
A-		
BBB		acceptable
BB		less than acceptable
B		quite high
CCC		high
CC		very high
C		beyond any acceptable level of risk exposure

The overall CSD rating contains an Outlook Indicator, which indicates the direction the rating is moving. It is established and maintained using the sources used to determine the rating and future changes/announcements which are likely to impact a rating. The outlook scale is:

- Stable: There are no factors at this time that would affect the CSD Rating or REA.
- Positive: Factors exist that may result in an improvement in the CSD Rating or REA.
- Negative: Factors exist that may result in a deterioration of the CSD Rating or REA.
- On Watch: Factors exist that may result in a change in the CSD Rating or REA, but the direction of the change is uncertain at this time





Appendix II: Risk Definitions and explanation

Asset Commitment Risk - The period of time from when control of securities or cash is given up until receipt of counter value.

Asset commitment risk identifies the time during which securities and cash are tied up within the CSD and payment system during the settlement process, assuming that everything settles according to schedule. The impact is the unavoidable opportunity cost associated with the assets committed to the settlement process.

This risk refers to the time period during which a participant's assets, either cash or stock, have their use restricted within the securities processing and payment system pending final settlement of the underlying transaction(s). Following settlement, the risk period is extended until the transfer of funds and stock become final. It excludes any periods when assets, cash or stock, are committed to a market participant including brokers, banks and custodians, not caused by CSD processing.

Liquidity Risk - The risk that insufficient securities and or funds are available to meet commitments; the obligation will be covered some time later.

Liquidity risk identifies the risks that start to arise as securities and cash do not settle according to schedule. Liquidity risk covers the situation where securities or cash are delivered late to the settlement process but in a situation that does not warrant a default. The impact is the opportunity cost of the assets delivered late.

Liquidity risk can occur for certain technical reasons (e.g. stock out on loan, stock in course of registration, turnaround of recently deposited stock is not possible) one or both parties to the trade has a shortfall in the amount of funds (credit line) or unencumbered stock available to meet settlement obligations when due. These shortfalls may lead to settlement fails but do not normally lead to a default.

Counterparty Risk - The risk that a counterparty (i.e. an entity) will not settle its obligations for full value at any time.

This is simply the total default of a direct participant of the CSD. This is the event when a participant is unable to meet its financial liability to other participants. This risk only goes as far as direct participants of the CSD and excludes clients of direct participants that default on liabilities to such participants, even if such a default should systemically cause the direct participant to subsequently default.

Asset Servicing Risk - The risk that a participant may incur a loss arising from missed or inaccurate information provided by the CSD, or from incorrectly executed instructions, in respect of corporate actions and proxy voting.





Asset servicing risk assesses the consequences of late deliveries (in information or instructions) surrounding corporate actions (associated with the custody of securities as opposed to the settlement of securities). The impact can be small if it is just the opportunity cost, but could be large if corporate events are missed and the situation cannot be recovered (e.g. a missed rights issue or takeover).

This risk arises when a participant places reliance on the information or when the participant instructs the CSD to carry out a transaction on its behalf. If the CSD fails either to provide the information or to carry out the instruction correctly or in a timely manner the participant may suffer a loss for which the CSD may not accept liability. The CSD may provide these services on a commercial basis, without statutory immunity, or it may provide the service as part of its statutory role, possibly with some level of protection from liability. This risk is likely to become much higher when international securities are included in the service.

Financial Risk - The ability of the CSD to operate as financially viable company.

Financial risk measures the exposure of the whole market to a situation where the CSD itself is at risk. It assesses whether capital is sufficient to meet the on-going operation of the organisation. The impact in this case could be systemic and likely to trigger significant opportunity, replacement or principal risk across the market depending on the position of the participants. This risk also includes where the CSD may act as central counterparty, or otherwise acts in a Principal capacity.

Operational Risk - The risk that deficiencies in information systems or internal controls, human errors or management failures will result in losses.

Operational risk identifies the risk of loss due to breakdowns or weaknesses in internal controls and procedures. Internal factors to be considered in the assessment include ensuring the CSD has formalised procedures established for its main services. The CSD should have identified control objectives and related key controls to ensure operations are maintained and there is proper control of established procedures. Systems and procedures should be checked and tested periodically. There should be external audit processes in place to provide third-party audit evidence of the adequacy of the controls.

