

RESPONSE TO FEEDBACK RECEIVED

December 2017

Proposed Amendments to Capital Requirements for Singapore-Incorporated Banks in MAS Notice 637

MAS

Monetary Authority of Singapore

Contents

1	Preface.....	3
2	Minimum Leverage Ratio Requirement.....	3
	Annex A – List of Respondents to the Consultation Paper.....	4
	Annex B – Submissions from Respondents to the Consultation Paper	5

1 Preface

1.1 On 25 July 2017, MAS consulted on proposed amendments to MAS Notice 637. The consultation paper proposed a minimum leverage ratio requirement of 3% and technical enhancements to the capital treatment of equity investments and the definition of default under the Internal Ratings Based Approach for credit risk.

1.2 The consultation period closed on 25 August 2017, and MAS thanks all respondents for their feedback. The list of respondents is in Annex A.

1.3 MAS has considered the feedback received carefully and, where appropriate, has incorporated them into the revised MAS Notice 637. Comments that are of wider interest, together with MAS' responses, are set out in the rest of this paper. The revisions to MAS Notice 637 relating to the proposals in the 25 July 2017 consultation paper will take effect from 1 January 2018.

2 Minimum Leverage Ratio Requirement

2.1 Respondents generally supported the minimum leverage ratio requirement of 3%. A respondent requested that MAS consult the industry prior to implementing any further adjustment to the definition of the leverage ratio, noting that the Basel Committee on Banking Supervision (BCBS) is reviewing the Basel III leverage ratio framework.

MAS' Response

2.2 We will implement the minimum leverage ratio requirement of 3% from 1 January 2018. We will consult the industry prior to implementing any further changes to the definition of the leverage ratio, including the revisions published by the BCBS on 7 December 2017¹.

MONETARY AUTHORITY OF SINGAPORE

28 December 2017

¹ <https://www.bis.org/bcbs/publ/d424.htm>

Annex A

**LIST OF RESPONDENTS TO THE CONSULTATION PAPER ON
PROPOSED AMENDMENTS TO CAPITAL REQUIREMENTS FOR
SINGAPORE-INCORPORATED BANKS IN MAS NOTICE 637**

1. DBS Bank Limited
2. HSBC Bank (Singapore) Limited
3. Oversea-Chinese Banking Corporation Limited
4. The International Swaps and Derivatives Association (ISDA) and Asia Securities Industry & Financial Markets Association (ASIFMA)
5. United Overseas Bank Limited

One respondent requested confidentiality of identity.

Please refer to Annex B for the submissions.

Annex B

**FULL SUBMISSIONS FROM RESPONDENTS TO THE CONSULTATION PAPER
ON PROPOSED AMENDMENTS TO CAPITAL REQUIREMENTS FOR
SINGAPORE-INCORPORATED BANKS IN MAS NOTICE 637**

Note: The table below only includes submissions for which respondents did not request confidentiality.

S/N	Respondent	Full Response from Respondent
1	ISDA and ASIFMA	<p>Our members are supportive of this Consultation being applied only to Singapore-incorporated banks, and are supportive of banks incorporated outside Singapore being outside the scope of this Consultation.</p> <p>However, while the Consultation mentions that BCBS may make further adjustments to the LR framework in footnote 22 of part IV of the Notice, it makes no mention of whether MAS will reopen the LR framework for further consultation after such adjustments. While our members support the 3% LR minimum as a transitional arrangement, we seek clarification from MAS on whether the LR framework will be reopened for consultation once BCBS finalizes the LR framework. As the BCBS may make further adjustments to the LR framework, we ask MAS to consult on adopting the finalized LR framework once this has agreed upon by BCBS members. We have highlighted our member's concerns with the current LR framework in the Specific Comments section of this response.</p> <p>We would also like to highlight that BCBS have indicated in the 2016 Proposed Framework that further analysis is needed to assess the impact of the LR framework on centrally cleared client derivative transactions. We request that MAS consider this analysis before implementing any final LR framework. The Associations hope to continue the constructive ongoing dialogue between MAS and market participants to assist MAS in developing the LR framework. We note that our members may have feedback which they may wish to provide separately to MAS.</p>

		<p>1. SA-CCR's Replacement Cost in the LR</p> <p>The 2016 Proposed Framework proposes to reflect derivative exposures as an exposure at default (“EAD”), including both RC and the PFE, calculated based on a modified version of SA-CCR. With respect to RC, we appreciate that the modifications are intended to ensure general alignment with accounting where only cash VM is reflected. We believe, however, that the reflection of the on-balance sheet component of derivatives through a modified RC component as part of the SA-CCR EAD appears inconsistent with the underlying principle that the on-balance sheet assets, and not a risk-based measure, should be the basis for the LR.</p> <p>Therefore, we think that the calculation of the on-balance sheet exposure component should largely follow the process of other assets by directly referencing the balance sheet with certain modifications that ensure jurisdictional consistency. This would have the benefit of introducing further simplicity in the LR framework. This can be achieved by aligning the calculation of the on-balance sheet component with the current methodology. This implies that the Alpha factor of 1.4 would not be applied to the RC. In addition, this also means that netting of derivatives within the RC would not follow risk-based considerations in relation to multiple credit support annexes (“CSAs”) and multiple netting sets but would be consistent with current rules aligned with accounting standards. The points below set out our reasoning underlying our suggestion.</p> <p>i. Consistent approach to on-balance sheet components with other exposure types</p> <p>An alpha factor of 1.4 in the context of the LR would call into question the accuracy of derivative valuations. However, there is no inherent reason to believe that the valuation of derivative assets is less reliable than the valuation of other assets on the balance sheet. Derivative valuations are subject to stringent</p>
--	--	--

	<p>independent price verification controls and procedures. They are also subject to independent third party audit, just like all other asset and liability values on the balance sheet.</p> <p>ii. Consistent approach to the on-balance sheet component of cash VM</p> <p>We understand that netting of derivative assets against cash VM received or derivative liabilities against cash VM posted is only allowed under certain conditions in accordance with underlying accounting principles. Since this is an accounting driven determination, cash VM should be treated consistently outside the SA-CCR EAD calculation with general accounting standards and not as proposed as part of the EAD calculation if the criteria for cash VM netting are met and as part of the standard on-balance sheet asset calculation if the criteria are not met.</p> <p>iii. Application of alpha factor inconsistent with a non-risk balance sheet driven exposure amount</p> <p>We understand that the alpha factor was initially introduced to produce loan-equivalent EAD for the purpose of calculating credit risk RWAs for derivative transactions. It was meant to take into account model risk, potentially high correlations of exposures across counterparties as well as the potential lack of granularity across counterparties (as the capital parameters are calibrated assuming an infinitely diversified portfolio). A reflection of these considerations would be inconsistent with the basic underlying principle of determining exposures in the LR based on the actual on-balance sheet exposure amounts unadjusted for risk. Furthermore, applying the 1.4x alpha factor to RC will particularly penalize derivatives transacted with uncollateralized counterparties, mainly corporates and sovereigns, given that positive present value (“PV”) will be particularly significant in these cases as it cannot be offset with any collateral. This is particularly magnified by the directional nature of exposures of certain end-users, for example, exposure on a pension fund portfolio. Finally,</p>
--	--

	<p>the alpha factor will also amplify the effect of market volatility in PV (e.g. move of interest rates) in the LR exposure (“LRE”), despite LR meant to be non-risk-based. This will create more difficulties for banks to manage the volatility of LRE, especially at times of significant market stress.</p> <p>We would also like to highlight here that we believe that this conservatively calibrated alpha factor, which should not apply to a standardized and already conservatively calibrated framework such as SA-CCR, should be further reviewed. The alpha factor was set in 2003 to 1.4x using industry estimates, however, this is no longer reflective of current market and regulatory environments as has been highlighted in the ISDA SA-CCR Quantitative Impact Study (“QIS”), submitted to BCBS on 20 March, 2017⁷. We therefore urge MAS to remove the alpha factor. We also request that MAS consider these concerns when modifying the SA-CCR framework for the LR framework.</p> <p>2. Recognition of IM for cleared and uncleared derivatives</p> <p>The Associations welcome the decision by BCBS in the 2016 Proposed Framework to collect data to study the impact of the LR on client clearing, with a view to potentially recognizing the exposure-reducing effect of IM. We think that, in the context of a bank exposure created by a cleared derivative transaction, the LR framework should recognize the exposure-reducing effect of IM, particularly as it is not used to increase the bank’s leverage. Treating IM for client clearing as additional LRE, as under the current LR framework, unnecessarily and significantly overstates LRE, acting against client clearing businesses, and contradicting the G20 mandate by creating an economic disincentive for clearing brokers to offer clearing services. Preliminary results from the industry LR QIS, based on aggregated results from 21 international banks, show that ignoring the exposure-reducing effect of IM for client clearing results in a 79% increase in client cleared transactions LRE compared to recognizing the exposure-reducing effect of IM.</p>
--	---

		<p>We regret, however, that the BCBS has not taken the opportunity to consult on the recognition of IM outside the case of client cleared transactions, typically in the case of uncleared bilateral trades. Under the current BCBS rules on non-centrally cleared derivatives, which the MAS has adopted effective 1 March 2017⁸, the mandatory IM requirements have the effect of grossing up the balance sheet and increasing LRE through either the cash IM posted to the counterparty (which will be a receivable) or through the additional securities inventory that must be held to meet requirements. Meanwhile, there will be no derivative exposure mitigation from the IM received under the proposed framework, as the PFE multiplier is being set to 1 for any amount of IM exchanged. We believe that this is inconsistent with the objectives of the margin requirements for non-centrally cleared OTC derivatives which include establishing “a robust regulatory framework by improving prudential regulation so that non-centrally cleared derivatives are bilaterally collateralised and subject to either margin or capital requirements”.</p> <p>Preliminary results from the industry LR QIS show that ignoring the exposure-reducing effect of IM for uncleared bilateral derivatives currently results in a 9% increase in bilateral OTC derivatives LRE compared to recognizing the exposure-reducing effect of IM. As indicated by the significant offset associated with the recognition of IM for client cleared exposures, it is expected that the impact of not recognising IM offset for non-cleared OTC derivatives is likely to become much more pronounced as the implementation of margin requirements progresses.</p> <p>The lack of a specific treatment to address IM requirements artificially overstates leverage on a system wide basis because only one party can ever be in-the-money on a derivatives contract and since non-centrally cleared OTC derivatives rules require two-way margin there will always be a surplus of IM relative to default risk. Furthermore, due to the segregation requirements, banks cannot use IM received to leverage themselves. We therefore think that</p>
--	--	---

	<p>MAS should give further consideration to the coherence between non-centrally cleared OTC derivatives rules and the LR framework, particularly regarding the exposure reducing effect of IM.</p> <p>Furthermore, even recognition of any exposure-reducing benefit of IM through the PFE multiplier, as currently formulated in SA-CCR, will only result in reduction that is not in line with the level of risk mitigation provided by IM. In the formulation, the PFE will not fall accordingly as it is dependent on the exponential multiplier which is significantly more conservative than the model-based multiplier (BCBS WP26). We understand the choice of the exponential multiplier is based on MTM value of real netting sets being likely to exhibit heavier tail behavior than the one of the normal distribution. While fatter tails than those implied by a normal distribution do exist, the conservative calibration of the AddOn^{aggregate} calculation already compensates for this. This means that the introduction of the exponential multiplier constitutes a double count of fat tails.</p> <p>This is even more problematic as the 5% floor and the application of collateral haircuts to the collateral values (please see comment below) introduce additional factors in reducing the risk mitigating benefits of overcollateralization. This undermines the stated regulatory efforts to increase the level of collateralization of exposures as a means to decrease counterparty credit risk. This has become even more important for the industry given the margin requirements for uncleared derivatives and the associated considerable funding costs. The same calibration issue also applies when derivative transactions are not in a netting set, where the non-netting set transactions will receive relatively high add-ons but the multiplier will provide little relief. As such, even transactions with significantly negative MTM will have large add-ons even when there is little chance of them to go in-the-money.</p> <p>The Associations also note that negative MTM is currently reflected through the net-to-gross ratio (“NGR”) in CEM, and therefore finds it difficult to justify that negative MTM for</p>
--	--

	<p>unmargined transactions is not recognized in the calculation of PFE in the revised LR framework. We believe that negative MTM should be reflected in the calculation of the PFE add-on for derivatives transactions.</p> <p>Finally, under SA-CCR, the collateral haircut approach is used to reflect the volatility of collateral where market price volatility and foreign exchange haircuts are applied to incoming and outgoing collateral as appropriate. Generally, such a simplistic approach seems problematic as on the one hand it models the volatility of collateral in isolation of other collateral or the overall trade population and does not recognize any diversification benefits while on the other hand it fails to reflect the uniqueness of certain types of collateral.</p> <p>3. Recognition of high quality government bond securities to offset replacement cost in OTC derivatives exposure calculation</p> <p>The inability to offset the replacement cost in the calculation of exposures associated with OTC derivatives with high quality liquid assets (“HQLA”) received as VM incentivises banks to receive cash VM. This will likely have a disproportionate negative impact on certain types of end-users – such as pension funds and insurers – because many typically rely on the ability to post high quality securities as collateral. Such end users use derivatives to manage their financial solvency and, as a result of such treatment, could abandon the use of derivatives as hedging instruments or be forced to post cash VM resulting in significant cost and liquidity risk.</p> <p>For example, European pension funds are typically fully invested and minimise their allocation to cash to generate long term returns that better match their liabilities. This has already been recognised by European policymakers in the context of the European Markets Infrastructure Regulation (EMIR)⁹, where European pension funds have been exempted¹⁰, under Article 89(1), from clearing OTC</p>
--	---

		<p>derivative contracts that are objectively measurable as reducing investment risks directly relating to the financial solvency of pension scheme arrangements.</p> <p>This temporary exemption was granted to ensure that European pension funds were not forced to post cash VM as required by clearing houses for cleared trades, but instead be allowed to carry on using OTC derivatives using the non-cleared markets while posting high quality securities as VM. The temporary exemption has already been extended once as no solution has been found for European pension funds to use high quality securities for posting VM for cleared trades as was hoped during the initial transitional period. Given the lack of any robust solution being found for this issue that could be relied upon in stressed market conditions, this temporary exemption could be extended again to 2018.</p> <p>Without changes to the LR, punitively treating such derivative exposures collateralised with HQLAs is likely to have the effect of forcing pension funds, and other types of counterparties that rely on the ability to post securities as collateral, to instead post cash as VM. It also conflicts with the policy objectives that allow European pension funds to benefit from a clearing exemption.</p> <p>Europe Economics and Bourse Consult, independent consultants commissioned by the European Commission estimated that an extra €205 billion to €420 billion (approximately SGD 325 billion to SGD 670 billion) of cash collateral would be needed if European pension funds were required to post cash VM, and cost European pensioners €2.3 billion to €4.7 billion annually¹¹ (approximately SGD 3.6 billion to SGD 7.5 billion).</p> <p>The effect will be compounded for these same end users as the BCBS Net Stable Funding Ratio (“NSFR”) limits VM received to cash that meets the LR netting standards and prohibits a bank from reducing its derivative assets with non-cash HQLA VM received from a counterparty, even when the securities received have cash-like liquidity characteristics (e.g., German Bunds or UK Gilts). This</p>
--	--	---

	<p>means that Bunds or Gilts, which are treated as cash equivalents for liquidity ratio purposes, are treated as if they were illiquid assets with no funding value.</p> <p>Moreover, under stressed market conditions – where HQLAs are not permitted to offset derivative exposures – this could potentially lead to a significant increase in demand for cash associated with large VM calls. This is likely to significantly increase liquidity risk and exacerbate downward pressure on falling asset prices as market participants sell out of physical assets in order to meet cash VM calls. This could therefore increase pro-cyclicality risk and reduce financial stability.</p> <p>While we recognise that the BCBS chose to allow the recognition of cash VM (subject to certain conditions) as it could be viewed as a form of pre-settlement payment, and that there are potential accounting issues associated with received non-cash VM, given the potential impacts the lack of recognition of HQLA VM on end users, we believe the issue requires further consideration by the BCBS and should be reviewed by MAS, given the implementation of margin and risk-mitigation standards for non-centrally cleared OTC derivatives in Singapore. We believe that it is crucial that potential impacts on end users are taken into consideration before finalising the framework in order to mitigate the risk that different jurisdictions transpose the LR differently. Divergent implementation would undermine the objectives of a globally consistent and coherent capital framework.</p> <p>4. PFE calculation for cleared transactions</p> <p>The 2016 Proposed Framework proposes that derivative exposures be calculated in accordance with SA-CCR. SA-CCR sets the Margin Period of Risk (“MPoR”) for margined transactions to a minimum of 10 business days for non-centrally cleared transactions. SA-CCR allows a lower MPoR of 5 days only for centrally cleared transactions that are subject to daily margin agreements that clearing members perform as an agent for their clients. However,</p>
--	---

	<p>the 2016 Proposed Framework does not specify the MPoR for the cleared transaction that the clearing member engages in from its own account.</p> <p>As proposed, it appears that clearing members would have to use a 10 day MPoR for cleared transactions, the same as for non-cleared transactions. We believe this is inconsistent with the treatment for cleared transactions that a clearing member performs as an agent for their clients. The closeout risk of a cleared transaction that is on behalf of a client is no different from a cleared transaction out of a clearing member's own account.</p> <p>While this dichotomy also exists in the risk-based capital framework, it is mitigated by the lower risk weights (2% or 4%), which is in part a recognition of the shorter close-out period involved in cleared transactions. The low risk weights do account for the shorter close out periods in the risk-based capital framework, however, because the LR framework is an exposure based measure, there is no recognition for the shorter close out periods. We therefore ask that the MPoR for cleared transactions for both client activity and clearing members' own transactions be set at a minimum of 5 days for the LR to ensure consistency and to recognize the shorter close out periods for all cleared transactions.</p> <p>5. No haircut should be applied to cash VM exchanged</p> <p>A foreign exchange mismatch haircut is being introduced in the LR proposals to reduce the amount of cash VM that can be used to offset the derivative on-balance sheet MTM where the currency of cash VM does not match the termination currency of the netting set. We believe it is relevant to set out current business practice of termination currency and variation margin currencies:</p> <ul style="list-style-type: none">• In the case of centrally cleared derivatives, CCP rules typically spell out a single "base" currency which would be used for determining a termination payment upon a CCP default. CCPs typically mandate the exchange of VM in the
--	---

		<p>currency of the cleared transaction on a “gross” basis per currency silo, rather than net across currencies. This requirement is driven by CCP rules and regulations in certain jurisdictions (e.g., EU).</p> <ul style="list-style-type: none"> • In the case of non-centrally cleared derivatives, standard ISDA agreements include “termination currency” as a defined term, which typically specifies a single currency as the termination currency. Currently, a typical netting agreement (if margined) generally is associated with one CSA and VM is typically exchanged on a net basis for the agreement. However, we highlight that with the adoption of margin requirements for non-centrally cleared derivatives by regulators globally, including MAS, a new CSA construct has been introduced that includes two VM CSAs (prospective trades vs. existing trades) and IM CSAs. Margin calls associated with each CSA will likely be settled on a gross basis per CSA, which may result in multiple currencies of VM payments. <p>Therefore, the existence of multiple VM currencies would appear to require that “FX mismatch” be determined on the VM currency level, rather than on a netting agreement level. We outline illustrative examples below for centrally cleared derivatives and bilateral (non-centrally cleared) derivatives, showing that the FX haircut as proposed is unworkable.</p> <p>In the case of centrally cleared transactions, VM exchanges based on the underlying currency are not only a CCP rule requirement, but also mandated by regulation in certain jurisdictions (e.g. EU EMIR Article 38(b)¹². London Clearing House (“LCH”), a CCP that clears approximately two thirds of global OTC derivatives, requires VM to be exchanged in the currency of the cleared transaction on a “gross” basis per currency silo. The practice is driven by both the CCP rulebook and EMIR regulation. The same is true for the Chicago Mercantile Exchange (“CME”), a US CCP that clears approximately one third of OTC derivatives. The reason for</p>
--	--	---

	<p>exchanging VM in the currency of the transaction is to eliminate the FX mismatch risk, we therefore believe that the proposed haircut is neither necessary nor warranted. The imposition of FX haircut to the gross MTM for a given currency can actually lead to significant haircuts that are unintended. For example, applying FX mismatch to the gross mark could lead to VM haircut being greater than the net MTM of a portfolio of cleared transactions in several cases.</p> <p>Regarding non-centrally cleared derivative transactions subject to mandatory margin requirements, the industry and ISDA have been worked on developing a new set of CSA constructs in response to the requirements. The new CSA construct includes at least two VM CSAs, where each would spell out eligible VM currencies and the margin calls are expected to be issued or exchanged separately for the operational ease and monitoring purposes:</p> <ul style="list-style-type: none">• Existing trades in a CSA that may include terms not necessarily new rules compliant (this CSA may also cover out of scope prospective trades)• Prospective trades in a new CSA that is compliant with the margin rules <p>As a result, it is possible that there will be at least 2 currencies of VM exchanges within one netting agreement. VM collateral in multiple currencies under the CSAs will lead to FX haircuts applied to gross marks, similarly to cleared derivatives. This means that, here as well, applying FX mismatch to the gross mark could lead to VM haircut being greater than the net MTM of a portfolio of uncleared transactions.</p> <p>In light of our above concerns on the likely unintended consequences of imposing FX haircuts to the gross MTM for a given currency, we believe that FX haircuts as proposed are unworkable. The risk-based capital framework already captures FX mismatches in practice, and implementing FX haircuts would introduce unnecessary complexity in the LR framework. Furthermore, the introduction of a risk-based haircut would be inconsistent with the</p>
--	---

		<p>basic premise that the on-balance sheet exposures should be aligned with accounting for the LR as stated above. We would therefore propose that the concept of FX mismatch be removed from the LR framework. This would also help to ensure that the LR framework remains simple. Finally, preliminary results from the industry LR QIS show that applying an 8% haircut for FX mismatch on CVM results in a significant RC increase of 12%.</p> <p>If, however, the BCBS decided to retain a haircut in such cases, “termination currency” should be defined as the ISDA close-out currency (parenthetical reference to bankruptcy claim should be removed).</p> <p>6. Reduction of the effective notional amount of a written credit derivative</p> <p>The 2016 Proposed Framework includes additional restrictions on the ability to use credit options by which a banking organization has the right to purchase credit protection as an eligible hedge. Notably, the strike price of the purchased protection must be less than or equal to the strike price of the written protection in order for a banking organization to achieve hedge recognition. Beyond these limited instances, credit options that have not been exercised cannot be recognized as “credit protection purchased through credit derivatives.”</p> <p>We are concerned that the deficiencies in the proposed approach will overstate the level of credit exposure that a banking organization has, thereby penalizing prudent risk management practices by disconnecting hedges from true underlying risk. In fact, we believe these restrictions could have the perverse impact of increasing systemic risk. We appreciate the concerns that indiscriminately recognizing purchased protection through credit options as hedges could result in residual risk that is not accounted for. However, addressing this concern through strike prices is inappropriate given the nature of credit options and how they are used.</p>
--	--	--

		<p>Credit options predominantly reference credit indices; very rarely do they reference a single reference name. Therefore, market participants do not typically use credit options to hedge long-term banking book exposures or to gain long-term exposure to the credit markets. Rather, market participants use credit options to hedge short-term credit exposures or to gain short-term exposure to the credit market. The proposed restriction on strike price may be appropriate for long-term exposures and hedges in the banking book, however, it is inappropriate for the short-term market making positions that comprise banking organizations' "trading books", which are fundamentally different in their nature and risk profile.</p> <p>Banking organizations act as market makers to facilitate client demand and therefore provide liquidity to the credit index market, rather than to take directional positions. Therefore, banking organizations' market making portfolios of credit indices and credit index options typically consist of a large number of client-driven positions and associated hedges. Little aggregate net risk exists because these positions offset each other, as measured by a variety of risk metrics. They are actively risk managed on an intraday basis and are subject to multiple risk limits. These aspects of credit options make them inappropriate for the restrictions around strike price.</p> <p>The proposal further does not allow offsetting the effective notional of a written credit default swap ("CDS") with the effective notional of an option where credit protection is purchased on the same underlying CDS; vice versa, it would not allow offsetting of the effective notional of an option where credit protection is sold with the effective notional of a purchased CDS. Limiting the scope of offsetting only to options is not justified. Economically, the exposure from an option where credit protection is sold may be offset by credit protection purchased through a CDS; equally, the exposure from protection sold through a CDS may be offset by an option where credit protection is purchased.</p>
--	--	--

		<p>Furthermore, the proposed restrictions on strike price would be difficult to operationalise and implement because they are divorced from banking organisations' own risk management. Consider the following example:</p> <ul style="list-style-type: none"> • <u>Trade 1</u>: Bank A sells a 3-month \$10Mn notional call option with a strike of 90 and a delta of 0.4. The bank therefore has a sold credit derivative gross-up of \$10Mn <ul style="list-style-type: none"> ○ From a risk perspective, the bank's exposure is \$4Mn (\$10Mn notional * delta of 0.4) <u>Trade 2</u>: To hedge the economic risk, Bank A could buy a 3-month \$5Mn notional call option with a strike of 70 and a delta of 0.8. <ul style="list-style-type: none"> ○ From a risk perspective, the bank's exposure is \$4Mn (\$5Mn notional * delta of 0.8) <p>While fully hedged from a risk perspective, Bank A has only hedged half of its sold credit derivative gross-up. Bank A would have to purchase double the size of the hedge they would normally do in order to fully offset the sold credit derivative gross-up of \$10Mn. The proposed rule will therefore force banks to make the trade-off between prudent risk management and managing the LR Capital. This could have deleterious market impacts. Banks are able to provide liquidity and act as market makers across the range of strikes for credit options because they are able to "connect" them through delta. If delta cannot be used, banks would need to cross clients strike by strike, which would result in a decrease in liquidity in credit options. Liquidity in credit options is important because they provide observability on tail risk and because they provide information on the distribution of an index. For example, an index with a 50% probability to finish at 90 and a 50% probability to finish at 110 will price the same way as the same index with a 50% probability to finish at 20 and a 50% probability to finish at 180. However, the credit options will price differently, which therefore allows clients and banks to better understand potential downside risks and hedge appropriately. The proposed change could</p>
--	--	---

therefore result in a less robust market and make banks more susceptible to tail risks.

To avoid market disruptions and to align the hedge recognition with prudent risk management, we believe it is more effective to use a delta-based exposure¹³. A delta-based exposure would be consistent with the Market Risk Rules and standard risk management practices. Delta is widely used as a measure of trading book exposures and hedge effectiveness. Each instrument's delta is a function of a variety of risk factors at a point in time, including maturity, volatility, and strike price. As such, deltas yield a more appropriate measure of exposure that is not limited to just strike price and would correspond with the way that banking organizations manage risk.

We recognize that the use of delta would incorporate a risk metric into the non-risk based LR. However, the Basel Committee has introduced a measure of risk through the strike price and we only ask that a more appropriate measure of risk be used. Furthermore, the Basel Committee has already integrated the use of deltas elsewhere into the Basel regulatory framework for measuring the potential exposure for derivatives transactions, with supervisory options volatility of 80%:

δ_i	Bought	Sold
Call Options ¹³	$+\Phi\left(\frac{\ln(P_i / K_i) + 0.5 * \sigma_i^2 * T_i}{\sigma_i * \sqrt{T_i}}\right)$	$-\Phi\left(\frac{\ln(P_i / K_i) + 0.5 * \sigma_i^2 * T_i}{\sigma_i * \sqrt{T_i}}\right)$
Put Options ⁷	$-\Phi\left(\frac{-\ln(P_i / K_i) + 0.5 * \sigma_i^2 * T_i}{\sigma_i * \sqrt{T_i}}\right)$	$+\Phi\left(\frac{-\ln(P_i / K_i) + 0.5 * \sigma_i^2 * T_i}{\sigma_i * \sqrt{T_i}}\right)$
With the following parameters that banks must determine appropriately: P_i : Underlying price (spot, forward, average, etc) K_i : Strike price T_i : Latest contractual exercise date of the option		

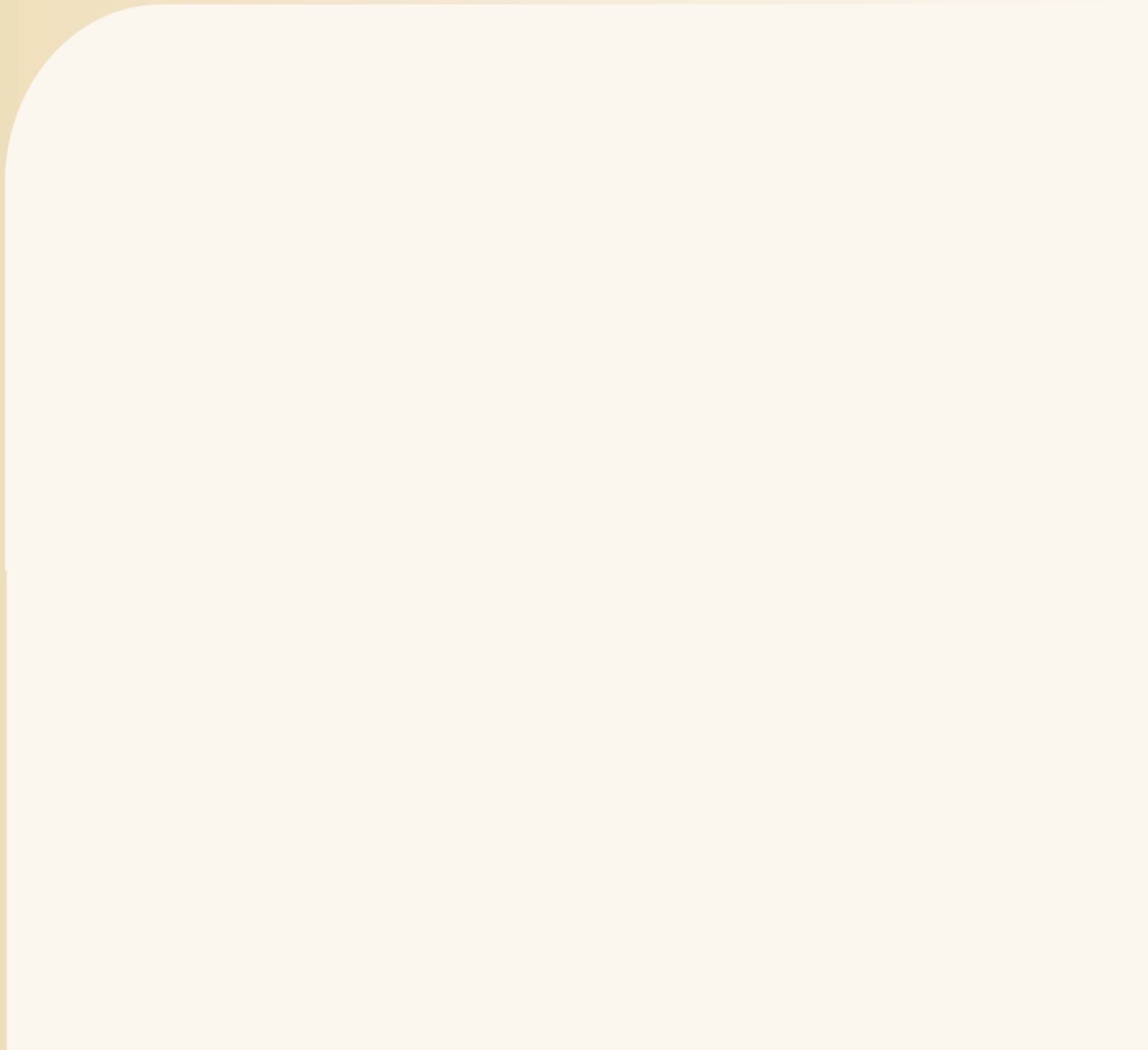
We ask that deltas be applied consistently for all derivatives, rather than restricting their use to non-credit derivatives. While the use of deltas would normally add variability to the calculation because each individual bank will have their own unique approach to calculating deltas, using the supervisory and standard delta calculations would mitigate this concern entirely and would have

	<p>the benefit of introducing further simplicity in the LR framework. The industry notes that the above is only one of the possible approaches to standard delta adjustments, we would be happy to work together with the BCBS to design a regulatory delta adjustment approach based on the Black and Scholes framework, satisfying the necessary requirements for the LR framework.</p> <p>Alternative:</p> <p>However, if a delta methodology was to be rejected, an alternative approach could be to consider the worst case scenario exposure where all names default with zero recovery, or equivalently all names trade at an infinite spread. It follows in this scenario that all options with the right to purchase credit protection would be exercised. The value of all options with the right to sell protection would reduce to zero. Since credit options are physically settled, the owner of the option always has the right to exercise their option regardless of its moneyness at option expiry thereby validating the assumption of all options being exercised, and showing how overly conservative the strike condition is in the 2016 Proposed Framework.</p> <p>Consider a portfolio of options where a bank owns an option to buy credit protection on an index at upfront strike of 10%. The option has a MTM of 1%. The bank has also sold another option where the bank has an obligation to sell credit protection on the same underlying index at an upfront strike of 5% which has an MTM of -2%. The default exposure of the portfolio under the alternative approach would be 4% which should correspond to its written credit protection exposure as demonstrated below:</p> $\text{Option exposure} = \text{MtM of all options} + (1 - \text{upfront strike of sold puts/payers (options to buy protection)}) - (1 - \text{upfront strike of bought puts/payers (options to buy protection)}) = -0.02 + 0.01 + (1 - 0.05) - (1 - 0.1) = -0.01 + 0.95 - 0.9 = 0.04$
--	--

	<p>Comparatively, under the current Basel III proposal the sold protection exposure of this portfolio would be 100% significantly overstating the maximum loss on the portfolio.</p> <p>We believe that the delta approach offers a more suitable and complete solution as out of the money options would then have a lower delta thereby limiting their ability as hedging instruments. The delta approach should be extended to include options with the right to sell protection to better represent the true risk of the business. This follows naturally when one considers Put-Call Parity where the underlying asset can be created synthetically via combinations of put & call options.</p> <p>7. Treatment of cash and cash equivalents</p> <p>A stated purpose of the LR is to avoid contributing to the vicious cycle of “fire sales” of certain types of assets during periods of market stress. Cash does not fall into this category and on the contrary, in times of economic stress, customers tend to flood the banking system with deposits rather than deploy their resources in riskier assets. Banks have little control over their balance sheets, including for custody banks that maintain the primary operational accounts of institutional investors with large and diversified global investment portfolios, when customers choose to deposit cash rather than invest in other assets.</p> <p>In this context, we note that on 5 July 2016, the Bank of England’s Financial Policy Committee (“FPC”) published the conclusions of its review of its leverage ratio framework in its Financial Stability Report¹⁴. The FPC expressed strong concerns regarding the inclusion of central bank cash balances in the leverage ratio, noting that “there is no direct benefit to funding holdings of reserves with capital” and that their inclusion in the leverage ratio can “affect the ability of the banking system to cushion shocks and to draw on central bank liquidity facilities, as necessary, to maintain the supply of credit and support for market functioning”.</p>
--	---

		<p>The Associations share the FPCs concerns. Similarly, cash is used as collateral by most market participants for central clearing and other financing transactions and as liquidity reserves by small and large banks, investment funds and corporates. Cash plays a critical role in the smooth functioning of financial markets. If market participants' ability to generate liquidity through this asset is impaired due to constraints on bank balance sheet capacity, particularly during stress periods, it may have serious ramifications for the stable functioning of financial markets. Keeping in mind these broad systemic safety concerns, we strongly encourage the MAS to consider carefully the way cash and unencumbered cash equivalent assets are treated in the LR.</p> <p>⁷http://www2.isda.org/attachment/OTI0MQ==/ISDA%20Letter%20to%20the%20BCBS%20on%20SA-CCR%20-%20March%202017.pdf, ISDA, ISDA Letter to the BCBS on the Standardized Approach for Measuring Counterparty Credit Risk Exposures.</p> <p>⁸http://www.mas.gov.sg/~media/MAS/Regulations%20and%20Financial%20Stability/Regulations%20Guidance%20and%20Licensing/Securities%20Futures%20and%20Fund%20Management/Regulations%20Guidance%20and%20Licensing/Circulars/MPI%202016%20Circular%20on%20Margin%20Req%20for%20NonCentrally%20Cleared%20OTC%20Deriv%20Contracts.pdf, MAS, MAS Guidelines on Margin Requirements for Non-Centrally Cleared Over-the-counter Derivatives Contracts.</p> <p>⁹http://ec.europa.eu/finance/financial-markets/docs/derivatives/20150605-delegated-act_en.pdf, European Commission</p> <p>¹⁰ Temporarily until August 16, 2017. The exemption may be extended again to August 16, 2018.</p> <p>¹¹http://ec.europa.eu/finance/financial-markets/docs/derivatives/150203-external-study_en.pdf, European Commission, Baseline report on solutions for the posting of non-cash collateral to central counterparties by pension scheme arrangements: a report for the European Commission prepared by Europe Economics and Bourse Consult, Page 10.</p> <p>¹² Article 38 Cash collateral: For the purposes of Article 46(1) of Regulation (EU) No 648/2012 [EMIR], highly liquid collateral in the form of cash shall be denominated in one of the following:</p>
--	--	---

		<p>(a) a currency for which the CCP can demonstrate to the competent authorities that it is able to adequately manage the risk;</p> <p>(b) a currency in which the CCP clears transactions, in the limit of the collateral required to cover the CCP's exposures in that currency.</p> <p>¹³ Delta for non-tranched products will be between zero and one. An out-of-the-money stock option with a longer maturity would typically have a higher delta (closer to one than to zero) than would a shorter-dated option. This is because the likelihood that the stock price and strike price will align increases with time (among other factors). If a market maker were long \$100 in a financial institution's stock, which has a delta of one, then the market maker would be more effectively hedged by buying a \$100 notional position in a short option with a delta of one rather than by buying a short option with a delta of zero, such that the value of the short position would be as tied to the stock price as the long position in the stock itself. Yet, the Proposal would treat both short positions as either equally effective or ineffective offsets to the long position, depending only on the maturity date of the short positions.</p> <p>¹⁴http://www.bankofengland.co.uk/publications/Documents/fsr/2016/fsrjul16.pdf, Bank of England, Financial Stability Report.</p>
--	--	--



Monetary Authority of Singapore