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September 20, 2021

Mr. Pablo Hernández de Cos, Chairman
Ms. Carolyn Rogers, Secretary General
Basel Committee on Banking Supervision
Bank for International Settlements
Centralbahnplatz 2
CH-4002 Basel
Switzerland

Re: Comments in Response to the Consultative Document on the Prudential Treatment of Cryptoasset Exposures

Dear Mr. Hernández de Cos and Ms. Rogers:

The Global Financial Markets Association, the Financial Services Forum, the Futures Industry Association, the Institute of International Finance, the International Swaps and Derivatives Association and the Chamber of Digital Commerce (collectively, the “Associations”)¹ appreciate the opportunity to respond to the Basel Committee on Banking Supervision’s (“Basel Committee”) consultative document on the “Prudential treatment of cryptoasset exposures” (the “consultation”). The Associations welcome the Basel Committee’s continued focus on designing a prudential framework for cryptoassets.² Furthermore, we support the Basel Committee’s decision to engage in an iterative approach related to the prudential treatment of cryptoassets. At the same time, we call attention to the need for prudential regulatory certainty in the near to medium term, particularly given the pace of evolution and client demand for cryptoassets.

¹ See Appendix 6 for information regarding each of the Associations.

² See *Designing a prudential treatment for crypto-assets*, Basel Committee on Banking Supervision (Dec. 2019) and *Consultation response, Basel Committee on Banking Supervision – Designing a prudential treatment for crypto-assets*, Global Financial Markets Association (Mar. 2020).

As the Basel Committee notes, banks' exposures to cryptoassets are currently limited, despite the fact that, as an asset class, cryptoassets have grown exponentially over the last several years. That limited exposure, however, is neither desirable nor sustainable in the view of the Associations for several reasons.

- First, the underlying technology for cryptoassets, distributed ledger technology (“DLT”), holds promise to make it possible to deliver financial services more quickly, securely and at lower cost. This is true across payments, the provision of financing, trade processing and other capital markets activities. That type of economic efficiency would lead to tangible benefits for the real economy and it is critical, from a public policy perspective, that these benefits are able to be delivered by financial institutions within the regulatory perimeter. These efficiencies should be able to be realized across various products and services, including through the use of cryptoassets, albeit with the same safety and soundness tools that the Basel Committee has instilled in the current capital and liquidity framework.
 - For example, the speed by and transparency with which transactions can be recorded on a distributed ledger, combined with the ability to swap and record assets and cash simultaneously, (1) allow for efficiencies in collateral management, (2) would help mitigate counterparty, liquidity and settlement risk (thereby improving risk management tools) and, more generally, (3) allow transactions to settle, and funds and assets to reach their intended recipient, more quickly.
 - These efficiencies should translate to lower transactions costs, ultimately benefitting end users and facilitating a more competitive marketplace.
- Second, the Associations believe, as expounded below, that these benefits will be realized most widely and transparently when regulated banks, with a long history of existing customer relationships and experience with regulatory compliance standards relative to newer entities, are able to play a meaningful role. In particular, the public and the regulatory community would benefit from bank involvement in the cryptoasset space because of this long history of identifying, monitoring and managing risks from both a prudential and conduct perspective on an ongoing basis.
- Third, there is significant demand for products and services related to these cryptoassets from customers, and the prudential framework should avoid precluding banks' ability to meet that demand.

In contrast to these benefits, the prudential framework envisaged by the consultation would create material impediments to regulated bank participation in cryptoasset markets. Not only do certain elements of the proposal make bank involvement in the cryptoasset market cost-prohibitive from a capital perspective, other elements, such as operational requirements for tokenized assets, are unlikely to be able to be satisfied in practice. This approach is especially concerning given the rapid growth of cryptoasset-related market activity with participants that fall outside the perimeter of prudential and market regulations.

We welcome that the Basel Committee stated that this consultation will be an iterative process building upon industry insights and further market analysis; however, there is a certain measure of urgency in ensuring that supervised banks can participate in these markets with necessary prudential regulatory certainty, while leveraging other existing safety and soundness guardrails, in the near to medium term.

As a result, the Associations believe that the changes we propose are necessary to ensure that the benefits of this new technology can be fully realized by businesses and households across all levels of the global economy. These changes would not dilute the proposal's conservatism as it relates to the prudential treatment of lesser-known, more volatile cryptoassets (*e.g.*, novel cryptoassets that do not trade in markets with depth and price transparency) but rather would facilitate a safer and more sound avenue by which the benefits of cryptoassets can be accessed by society.

The Associations further believe that making it practical to bring these activities within the banking sector will have benefits for the regulatory community more broadly, for example, by providing a clear line-of-sight into these activities by leveraging banks' current due diligence and reporting capabilities. Another example of the benefits available to be realized is that banks will be able to offer cryptoasset-related products and services more widely and in a safe and sound manner, leveraging their existing relationships with, and knowledge of, customers and clients. Banks have a long track record of integrating new and emerging technologies in their product offerings, increasing accessibility to customers and providing robust customer protections.

Banks also would benefit from a prudential framework that is risk-sensitive and appropriately calibrated as it would provide appropriate incentives for innovation and meeting customer demand. To achieve this result, we urge the Basel Committee to recognize hedging in the prudential framework; otherwise underlying exposures would be significantly overstated (which, of course, would be contrary to a risk-sensitive approach).

If, on the other hand, the prudential framework for cryptoassets is too punitive for bank involvement in this market, competition may be stifled. Therefore, the Associations believe the prudential framework for cryptoassets should be appropriately calibrated to facilitate robust bank involvement in a manner that is nevertheless consistent with the Basel Committee's overarching policy objectives.

To this end, while the Associations support the following principles underpinning the consultation, we recommend that the Basel Committee adjust the consultation's approach in order to be more fully consistent with those principles. Specifically:

- We agree with the Basel Committee that the approach should follow the principle of “**same risk, same activity, same treatment**” and that the prudential framework should be **technology neutral**. However, as we suggest below, adjustments are needed to achieve true technological neutrality.

- We also believe the framework should be as **simple** as possible; however, there are some aspects of the proposal that should be further simplified, while other aspects should be made more risk sensitive.
- Lastly, given the cross-border nature of the cryptoasset markets, the Associations support having **minimum global standards**, supported by coordination across jurisdictions to help ensure an approach that is consistent and comparable.

The Associations believe that making greater use of the existing international prudential framework (*i.e.*, Basel III)³ is the best way to achieve such principles. For example, using the existing international prudential framework should help: (1) enable a consistent application across jurisdictions of “same risk, same activity, same treatment”; (2) leverage a framework that is designed to be product agnostic and, therefore, avoid added complexity through the introduction of new methodologies; and (3) support existing established principles of separately capitalizing banking and trading book risks. This approach also would mitigate unwelcome regulatory fragmentation, as well as limit the prospect of risk concentrating outside a regulatory perimeter.

In sum, the Associations believe that the consultation should be revised to help realize the benefits that DLT can deliver across the real economy, to facilitate regulated bank involvement in cryptoasset markets and to provide an appropriately regulated and level playing field across the globe (through use of the existing prudential framework).

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³ See *Basel III: Finalising post-crisis reforms*, Basel Committee on Banking Supervision (Dec. 2017).

Table of Contents

	<u>Page</u>
I. Executive Summary	7
II. The Prudential Framework Should Encourage Bank Involvement in the Development of Safe and Efficient Cryptoasset Markets.....	8
A. Bank Involvement Will Increase Transparency	9
B. Without Bank Involvement, Market Fragmentation Will Increase.....	9
C. Bank Involvement in DLT Can Reduce Operational Risk	10
D. Banks Can Bring Strong Risk Management Practices to Cryptoasset Markets	10
E. Banks Can Reduce Volatility in Cryptoasset Markets	10
III. Out of Scope Assets	11
IV. Group 1 Cryptoassets	12
A. The Classification Conditions for Group 1 Cryptoassets are Unduly Restrictive and Should be Revised to Avoid Unnecessarily Limiting the Scope of Group 1 Cryptoassets	12
1. Classification condition No. 3 is overly broad, would impose unworkable requirements and is not necessary for safety and soundness purposes.....	12
2. Classification condition No. 4 would result in a requirement that is unlikely to be met in practice and therefore should be adjusted.	13
3. Banks should be responsible for determining whether a cryptoasset qualifies as a Group 1 cryptoasset, subject to satisfying specified, clear classification criteria.	14
B. The Existing Operational Risk Capital Framework Should Be Applied to Cryptoasset Exposures and Activities	14
C. The General Approach to Capitalizing Group 1a Cryptoassets for Market and Credit Risk is Appropriate, But Should Apply to Both Individual Assets and Pools of Underlying Assets	15
D. Group 1b Cryptoassets.....	15
1. The 10 bps peg criterion is overly restrictive, creating a cliff effect, and should be modified to 25 bps with a risk-weighted multiplier.....	15
2. The stabilization mechanism should be tested according to the value of the peg rather than the value of the underlying assets.....	17
3. The approach to capitalizing Group 1b cryptoassets should clearly distinguish between structures that include credit exposure to the redeemer and those that do not; there should be clear circumstances under which banks can demonstrate adequate mitigation of step-in risk.	17

4.	Group 1b cryptoassets should be recognized as eligible collateral if their underlying assets are eligible.	20
V.	Group 2 Cryptoassets	21
A.	The Capital Treatment of Group 2 Exposures Should Not Be Dependent On the Applicable Accounting Framework.....	21
B.	Risk-Based Capital Requirements Should Vary Based On the Economic Risks Posed By Different Group 2 Cryptoasset Exposures.....	22
C.	Group 2 Cryptoassets Should Be Further Divided Into Two Subcategories, Reflecting the Active and Liquid Market for Some Group 2 Cryptoassets	24
1.	Group 2a should include cryptoassets with a liquid two-way market and also include commonly traded indices based on reference obligations that qualify for the subgroup.....	24
2.	Group 2b should consist of all other Group 2 cryptoassets.	26
D.	The Existing Prudential Framework and Principles Should Be Applied To Group 2a Cryptoassets, With Certain Modifications As Necessary	26
1.	FRTB SA.	26
2.	FRTB IMA.....	28
3.	CVA.....	29
4.	SA-CCR.	29
5.	Collateral Eligibility.	30
6.	Cleared Transactions.	32
E.	Certain Cryptoassets Should Be Treated As Prepaid Expenses.....	33
F.	The Scope of Equity Investments Subject to the Consultation is Unclear and May Not Reflect Drivers of Change in Value of These Investments	33
VI.	Other Regulatory Requirements.....	34
A.	The Associations Agree With the Leverage Ratio Proposal.....	34
B.	The Associations Agree With the Large Exposures Framework Proposal.....	34
C.	The Basel Committee Should Not Preempt the Development of the Cryptomarket By Prematurely Establishing Punitive Liquidity Ratio Requirements For Cryptoassets.....	35
VII.	Disclosure Requirements	35
VIII.	Conclusion	36

I. Executive Summary

The Associations recommend that the Basel Committee consider the following propositions as they develop an appropriately designed and calibrated prudential framework for the treatment of cryptoasset exposures:

- A framework that is overly conservative will have the effect of precluding regulated bank involvement in cryptoasset markets, which may significantly slow the types of technological improvements to market structures that can be developed by banks and discourage such activities from being conducted within the regulatory perimeter with its attendant benefits of improved market transparency and regulatory supervision. The Associations stand ready to work collaboratively with the global regulatory community as a mutual understanding of new products and markets develops and as the questions for the prudential framework are formulated and, ultimately, resolved.
- The framework for cryptoassets should utilize the existing prudential framework for all other bank exposures that has been developed over many years taking into account the following criteria.
 - This framework would allow for technological neutrality and be designed to reflect underlying risk.
 - Along similar lines, the availability and use of effective hedging should be recognized in any prudential framework. Effective hedging reduces risks and costs, and empirical analysis shows that the ability to hedge is central to reducing volatility within a given asset class. Currently, a key concern of regulators as it relates to bank involvement in cryptoassets is the volatility of the underlying assets; however, these hedges are key to mitigating the risk of volatility in these assets for banks. In addition, banks are best positioned to both risk-manage and reduce the overall volatility of this market. If these benefits are not recognized, the activity may not be economically viable, with end users ultimately bearing the costs.
 - The need for differences in the capital treatment of cryptoassets held in the banking book versus the trading book should be recognized in the framework as it is for other bank exposures, so that the different risks of trading and banking book activities are appropriately capitalized. That said, for certain Group 2 cryptoassets, the exposure to changes in price is best captured through the market risk framework. Thus, for banking book exposures to this set of cryptoassets, applying the market risk framework would be appropriate, similar to the treatment of foreign exchange (“FX”) and commodities risk in the banking book under the current framework and net short credit and equity risk in the banking book in the future.
 - The capital treatment of Group 2 cryptoassets should be tied to the risks of the assets, not their accounting treatment. This approach should help avoid disparate treatment across jurisdictions resulting from different accounting regimes. Assets with different risk profiles should be subject to correspondingly different capital standards.

- As noted, the Basel Committee should work within the existing framework to develop standards that are agile by design – the framework should be able to be updated promptly when necessary to keep pace with developments.

In light of these propositions, the Associations respectfully submit the comments that follow.

For reference, a summary chart of our comments and taxonomy of the different categories of cryptoassets to which we believe a distinct prudential treatment should be ascribed is included at Appendix 1. Importantly, as discussed in more detail below and as reflected in the Appendix, we believe it is critical that the framework (1) clearly identifies out-of-scope assets and (2) recognizes that the broad category of Group 2 cryptoassets includes a diverse range of activities and exposures that cannot be adequately addressed through application of a single, undifferentiated 1250% risk weight. In respect of this latter point, we propose that Group 2 cryptoassets distinguish between cryptoassets for which there is a liquid two-way market (which we refer to as Group 2a) and all other cryptoassets (which we refer to as Group 2b).

In addition, Appendix 2 includes a mapping of our response to the questions set forth in the consultation. Further, the following appendices provide quantitative and other technical analysis to support the proposals and calibrations we put forward in this response (each such appendix is referenced, where relevant, in the discussion below):

- Appendix 3: Analysis Demonstrating the 10 bps Peg Criterion is Overly Restrictive
- Appendix 4: Group 2 Cryptoasset Volatility and Correlation and Analysis Supporting Proposed SA-CCR Modifications
- Appendix 5: Sample Group 2 Calculations

Appendix 6 provides background information on each of the Associations. Following the appendices, we include an index of defined terms.

II. The Prudential Framework Should Encourage Bank Involvement in the Development of Safe and Efficient Cryptoasset Markets

With the rise of cryptoassets, regulators globally have expressed concern over (among other things) financial stability, consumer protection, money laundering and terrorist financing. As an initial matter, and as discussed throughout this response, it is important to distinguish between different types of cryptoassets, the risks they present and how bank involvement in these markets might ameliorate some of these risks.

While noting the Basel Committee is of the view that policy development for cryptoasset exposures is likely to be an iterative process, involving more than one consultation, and that it believes “there is merit in starting with a simple and cautious treatment that could, in principle, be revisited in the future depending on the evolution of cryptoassets”, we find the proposals in the consultation to be so overly conservative and simplistic that they, in effect, would preclude bank involvement in cryptoasset markets.

If the prudential framework effectively precludes banks from serving as financial intermediaries in these markets, unregulated sectors will continue to grow, which could lead to market fragmentation. Market fragmentation, in turn, could lead to inefficiencies, brittleness in times of stress and higher costs for customers due to the less transparent nature of an unregulated sector. This result is not necessary because a treatment can be outlined within the existing prudential framework that facilitates regulated bank involvement in cryptoasset markets and, at the same time, advances safety and soundness. The recommendations put forward by the Associations in this response would provide such a framework, as our recommendations are based on conservative calibrations developed through empirical analysis and evidence.

Moreover, financial stability concerns are sometimes cited as one of the drivers of a cautious approach to cryptoasset regulation. In this regard, we ask that due consideration be given to the improvements to system stability from activities in the cryptoasset market being undertaken by regulated banks. In particular, the public and the regulatory community would benefit from bank involvement in the cryptoasset space because banks identify, monitor and manage risks from both a prudential and conduct perspective on an ongoing basis.

A. Bank Involvement Will Increase Transparency

As the Basel Committee is well aware, banks are not only subject to comprehensive and robust prudential regulation, but they are also supervised and examined on an ongoing basis by numerous regulators globally. For example, banks provide periodic reporting to their supervisors and, even beyond that formal reporting, supervisors have access to information on an ongoing basis, both as a result of the examination and onsite supervisory process and through formal and informal data calls. As a result, activities conducted within a regulated bank are fully transparent to supervisors and supervisors can use information regarding that activity to inform analyses about potential financial stability concerns, as well as regarding conduct matters. For instance, in the past, supervisors have been able to garner information about leveraged lending and sales practices from regulated institutions and used that information to inform views about whether any particular regulatory or supervisory action is warranted to address potential issues. This same type of transparency that informs the supervisory and regulatory process would be available to the extent banks participate in cryptoasset markets.

B. Without Bank Involvement, Market Fragmentation Will Increase

Without the meaningful involvement of regulated banks in the cryptoasset space, consumers and institutional clients will seek cryptoasset-related products and services, which have considerable potential for economies of scale relative to traditional banking products and services, from nonbank financial intermediaries. This result would have the effect of concentrating risk in unregulated sectors of financial services, while fragmenting existing customer relationships among banking service providers. As a result of that fragmentation, customers would not have the full opportunity to benefit from the robust consumer and client protections that traditional banks provide. Finally, a lack of bank involvement would reduce the incentives for regulated banks to seek solutions for current

anti-money laundering (“AML”)/know-your-customer (“KYC”) concerns (*e.g.*, enhanced due diligence practices through the use of “hosted wallets”).

C. Bank Involvement in DLT Can Reduce Operational Risk

The consultation fails to recognize that DLT—as a technology—has the potential to actually lower operational risk. Cryptoassets are just one example of an asset and service that can benefit from DLT. Further, banks already have robust risk management and compliance programs and are subject to extensive regulatory requirements such as capital and liquidity standards, operational resilience and consumer protection laws. In addition, banks must maintain comprehensive AML and KYC programs, and they have extensive experience with introducing emergent technologies in their products and businesses in a safe and sound manner.

Banks harnessing DLT for cryptoassets and other services/products also could bring considerable efficiency to capital markets-related processes such as collateral management and trading and settlement. Faster settlement times, where appropriate, will reduce trade breaks and reconciliations required and also would mitigate counterparty and settlement risk, reducing overall risk to the system.

D. Banks Can Bring Strong Risk Management Practices to Cryptoasset Markets

Banks have a track record of bringing expertise and strong risk management practices to nascent technologies (*e.g.*, mobile banking and remote capture for retail banking customers). Banks also have found innovative and low-cost ways to provide exposure to certain markets for retail clients that were previously inaccessible (*e.g.*, self-directed brokerage accounts with access to a broad range of investment and exchange-traded funds (“ETFs”). These products maintain strict limits and ensure that customer activity is both traceable and reportable.

The same expertise and safety could be extended to the offering of cryptoasset-related products and services (*e.g.*, investment funds, custody and payments). These types of activities provide banks with fee-based revenues, similar to current product and service offerings, and limit activity that could compromise market stability (*e.g.*, by reducing the availability for retail clients to trade on leverage, which has been a driver of Bitcoin (“BTC”) volatility in 2021).

E. Banks Can Reduce Volatility in Cryptoasset Markets

As adoption and saturation of cryptoassets continue, banks can play a pivotal role in ensuring liquidity, transparency and operational resilience of the market. This result would be accomplished, in part, by providing clients (including institutional clients) with access to risk management tools including hedging products (*e.g.*, futures contracts linked to certain cryptoassets). Empirical analysis shows that the ability to hedge is central to reducing the volatility within a given asset class. Currently, it appears that a key concern of regulators as it relates to bank involvement in cryptoassets is the volatility of the

underlying assets; however, banks are well positioned to both risk-manage and reduce the overall volatility of this market.

III. Out of Scope Assets

As a starting point, the Associations request that the Basel Committee clarify that the following assets and uses of DLT are outside the scope of a prudential framework for cryptoassets. They should be subject to the existing international prudential framework.

- As noted by the consultation, central bank digital currencies (“CBDCs”), including CBDCs issued and held under any of the various structures being contemplated (*e.g.*, direct holding or holdings through intermediary banks or financial market infrastructures).⁴
- Financial assets or instruments (*e.g.*, deposit claims, debt securities, asset-backed securities, fund shares, other equity interests, derivatives contracts, foreign exchange contracts and regulated e-money or stored value instruments) that are created in a “traditional manner”⁵, where the transfer thereof between owners is undertaken with or through one or more regulated entities, or otherwise within a legally recognized or regulated framework, through the use of some form of DLT.
- The digital representation of rights and obligations of one party against another party, where at least one such party is a regulated entity (*e.g.*, depository, custodian, securities intermediary, etc.), and has the ability to transfer such rights and obligations using DLT.
- Similarly, non-financial assets where blockchain-based records are used to record and facilitate transfer of ownership. This group of assets includes physical assets like non-financial commodities, blockchain-based records of trade financing documents, as well as title to real estate, art and other collectibles, where the transfer of the asset between owners is undertaken with or through one or more regulated entities, or otherwise within a legally recognized or regulated framework, through the use of some form of DLT.
- Consistent with the above, investment funds with traditional underlying assets. For this purpose, an investment fund should have the same meaning as in the current Basel framework, irrespective of whether the interest in the fund is held in tokenized form. These exposures should be risk-weighted using the Equity

⁴ See *Annual Economic Report 2021 (Chapter III. CBDCs: an opportunity for the monetary system)*, Bank for International Settlements (Jun. 2021). See also *Press Release, Federal Reserve Chair Jerome H. Powell outlines the Federal Reserve’s response to technological advances driving rapid change in the global payments landscape*, Federal Reserve Board (May 20, 2021).

⁵ “Traditional manner” refers to the execution of a legally binding or otherwise enforceable agreement or instrument, whether represented in, or embodied by, a paper instrument that will be held in custody or dematerialized form, and recorded or held using traditional means.

Investment in Funds (“EIF”) approach, as applied under the existing Basel framework.⁶

IV. Group 1 Cryptoassets

A. The Classification Conditions for Group 1 Cryptoassets are Unduly Restrictive and Should be Revised to Avoid Unnecessarily Limiting the Scope of Group 1 Cryptoassets

The Associations believe some of the classification requirements that determine whether a cryptoasset qualifies as a Group 1 cryptoasset are unduly restrictive and do not fully recognize the disaggregated nature of the underlying technologies and networks that support tokenized assets. Moreover, as we discuss, these conditions are not necessary to support the safe and sound facilitation of cryptoasset markets.

1. Classification condition No. 3 is overly broad, would impose unworkable requirements and is not necessary for safety and soundness purposes.

Classification condition No. 3 provides that: *the functions of the cryptoasset and the network on which it operates, including the distributed ledger or similar technology on which it is based, are designed and operated to sufficiently mitigate and manage any material risks.*

The Associations’ members are committed to robust and ongoing risk management to mitigate any material risks presented by cryptoassets they hold and the DLT networks in which they participate. Doing so supports bank safety and soundness, while also creating appropriate conditions for clients and counterparties to hold and trade Group 1 cryptoassets with confidence.

Classification condition No. 3, however, would require the functions of the cryptoasset and the network on which it operates to be designed and operated to sufficiently mitigate any material risks. Banks cannot uniformly attest to the operation of aspects of a distributed and decentralized network that they do not own or otherwise maintain any contractual or other rights to operate and administer. Banks can be expected to dynamically assess the design of such networks, including the design of their operation, but the global and disaggregated nature of these networks would make full oversight of all aspects of their operation wholly infeasible.

Banks should, of course, maintain robust risk management procedures to understand and monitor all material risks associated with Group 1 cryptoassets and the networks upon which they operate, consistent with existing supervisory expectations for third party risk management.⁷ Banks also should seek to ensure that such structures are designed to

⁶ *Equity investments in funds*, Basel Committee on Banking Supervision (Dec. 2019).

⁷ See, e.g., *Guidance on Managing Outsourcing Risk*, Federal Reserve Board (Dec. 5, 2013, rev. Feb. 26, 2021); *Third-Party Relationships: Risk Management Guidance*, Office of the Comptroller of the Currency (Oct. 30, 2013); *Guidance for Managing Third-Party Risk*, Federal Deposit Insurance

mitigate all material risks and that their participation in the operation of such networks is conducted in a manner that mitigates all material risks. Finally, banks also will monitor these structures and put mitigation measures in place to respond to any material risks that arise and are outside of their control. These steps are consistent with the approach to the risk management of other financial network utilities in which banks participate but do not have full operational control, such as exchanges and central counterparties (“CCPs”). Accordingly, using existing risk management expectations to manage risks of cryptoassets and networks upon which they operate should be sufficient to support safety and soundness and would be consistent with the technology neutral principle of the consultation.

2. *Classification condition No. 4 would result in a requirement that is unlikely to be met in practice and therefore should be adjusted.*

Classification condition No. 4 provides that: *all entities that execute redemptions, transfers or settlement finality of the cryptoasset be regulated and supervised*. Similar to the Associations’ comment in regard to classification condition No. 3, the condition is overly broad and inconsistent with existing regulatory approaches. The text of the condition indicates that it applies to “operators of the transfer and settlement systems”. Unlike traditional trading networks, such as CCPs and exchanges, where the number and type of participants is relatively small and homogeneous, many of these emerging networks are, in concept, characterized by a large number of participants across the globe. Accordingly, the requirement that all “operators of the transfer and settlement” of such cryptoassets be supervised and regulated would limit unduly the scope of Group 1 cryptoassets.

Moreover, if all entities that actively participate in the operation of a cryptoasset and related network were not supervised and regulated, this would not necessarily jeopardize safety and soundness. Such requirements are not applied to existing, more traditional, financial market infrastructures. It is appropriate for safety and soundness purposes to require that banks engaging with such distributed networks have a robust and transparent risk management framework for monitoring these networks and that they take appropriate mitigation actions as necessary. Indeed, existing supervisory expectations for third party risk management require such an approach.⁸ Such robust risk management practices may consider, as part of the due diligence process, whether “operators of the transfer and settlement systems” are regulated and supervised, but regulation and supervision should not be an explicit requirement.

Corporation (Jun. 6, 2008); Article 76(1) of Directive 2013/36/EU (Capital Requirements Directive), as implemented in individual member states; Rule 2.3 of the Risk Control Chapter of the Prudential Regulation Authority Rulebook; *Principles for Operational Resilience*, Basel Committee on Banking Supervision (Mar. 2021); and *Revisions to the Principles for the Sound Management of Operational Risk*, Basel Committee on Banking Supervision (Mar. 2021).

⁸ *See id.*

Fundamentally, the Associations support the development of a regulated ecosystem for certain cryptoassets, with bank capital standards designed to be workable within current regulatory frameworks (*i.e.*, capital treatment should not require additional regulation, but rather reflect extant regulation). In the interim, while the regulatory framework for cryptoassets is being developed, banks should not be precluded from participating in cryptoasset markets. In fact, the evolution of a regulatory framework would be facilitated more efficiently through the active participation of regulated banks throughout the development process. Banks participate in a range of markets – all of which have differing degrees of regulation – and are able to manage the attendant risks. The same should be the case for cryptoasset markets.

3. *Banks should be responsible for determining whether a cryptoasset qualifies as a Group 1 cryptoasset, subject to satisfying specified, clear classification criteria.*

The consultation states that supervisors should be responsible for reviewing and approving whether a cryptoasset qualifies as a Group 1 cryptoasset. The Associations, however, believe that banks should be responsible for making this determination, based on specified, clear classification criteria, in the same way that banks make determinations regarding the appropriate capital treatment for other asset classes. These determinations, of course, would be subject to review in the ordinary course of the supervisory process.

Our suggested approach would help to ease administrative and operational burden and support global consistency in cryptoasset treatment. For example, the consultation’s proposed approach would result in an impractical framework for banks and supervisors, as it would require supervisors to review cryptoassets on an ongoing basis as new products emerge. We believe that it would be more efficient for supervisors and banks to update applicable criteria as appropriate, rather than reviewing individual products one-by-one.

B. The Existing Operational Risk Capital Framework Should Be Applied to Cryptoasset Exposures and Activities

Section 2 of the consultation argues for the need to impose a Pillar 1 operational risk add-on due to the “unanticipated” nature of the risks that cryptoassets pose. The consultation provides three examples of potential ways to set an operational risk add-on: “a flat percentage of the exposure amount”; “a variable amount that depends on the specific features of the cryptoasset”; or “an amount that reduces over a period of time as the underlying technology becomes more established and conditional on it demonstrating robustness through stressed events”.

Consistent with the broader comments we provide, the Associations believe that a singular operational risk add-on charge only for cryptoassets, as contemplated by the consultation, is inconsistent and unnecessary because existing and future operational risk capital frameworks, including internal and supervisory assessments, are already capable of taking into account such risks. An asset-specific add-on charge would be fundamentally inconsistent with the design of and rationale for the new standardized

approach for operational risk (“SMA”). That standard reflects the Basel Committee’s view that “the combination of a simple standardised measure of operational risk and bank-specific loss data provides a sufficiently risk sensitive measure of operational risk.”⁹ The emergence of a new asset class does not warrant a fundamental revision to this recently finalized standard. Taking a different approach and applying a product-specific operational risk add-on would undermine the design of both the operational risk framework and the broader capital framework. Therefore, the existing operational risk capital framework should be applied to cryptoasset exposures and activities.

C. The General Approach to Capitalizing Group 1a Cryptoassets for Market and Credit Risk is Appropriate, But Should Apply to Both Individual Assets and Pools of Underlying Assets

The consultation provides that Group 1a cryptoassets would be subject to minimum credit and market risk capital requirements that are equivalent to those for the related traditional asset. The Associations consider this Group to include financial assets or instruments that are analogous to traditional financial assets or instruments but which are “natively digital” (that is, are legally constituted solely in digital form and the ownership of which is exclusively and definitively determined using DLT).

The Associations generally agree with the proposed approach to capitalizing credit and market risks. Further, the Associations believe that this treatment should apply both whether there is a single underlying asset or a pool of underlying assets; in the latter case, the EIF should be used, as applied under the existing Basel framework.

D. Group 1b Cryptoassets

1. The 10 bps peg criterion is overly restrictive, creating a cliff effect, and should be modified to 25 bps with a risk-weighted multiplier.

The consultation provides that for a stablecoin to qualify as a Group 1b cryptoasset, a bank holding such a stablecoin would need to monitor daily the difference between the value of the cryptoasset and the underlying traditional asset(s). If the difference in value exceeds 10 bps of the value of the underlying asset more than three times in a one-year period, the stabilization mechanism would be deemed ineffective and the stablecoin would not qualify as a Group 1b cryptoasset. The effectiveness of the stabilization mechanism would be able to be reassessed only when the bank has demonstrated to the satisfaction of supervisors that the cause of the breach of the threshold has been addressed and will not reoccur.

The Associations view this criterion as a foundational issue and believe the 10 bps threshold is unnecessarily restrictive, which would lead to likely breaches that exceed the three per-year cap and, therefore, would create a “cliff effect” as cryptoassets fall to Group 2. Further, the proposed framework also likely would lead to a significant

⁹ See *Standardised Measurement Approach for operational risk*, Basel Committee on Banking Supervision (Mar. 2016) at 1.

administrative burden on supervisors to reassess the effectiveness of stabilization mechanisms after a breach of the 10 bps peg, potentially delaying supervisory determinations and therefore lengthening the time until the cryptoasset could re-qualify for Group 1b capital treatment.

An analysis of stablecoins and equity, commodity and bond ETFs demonstrates that the consultation’s proposed 10 bps peg criterion is conservatively calibrated, even when allowing for three breaches annually. The table below illustrates that it is an unrealistic standard that even the largest and most liquid funds would fail to meet. The table shows the number of breaches of the 10 bps threshold using the delta between stablecoins and their intended price (\$1) and the delta between daily returns of ETFs and daily returns of the underlying index to measure yearly breaches.

Yearly Number of 10 bps Threshold Breaches		
Fund – ETF	2020	2021¹⁰
Tether (“ <u>USDT</u> ”)	124	43
USD Coin (“ <u>USDC</u> ”)	15	6
SPDR S&P 500 ETF (“ <u>SPY</u> ”)	41	10
United States Oil Fund (“ <u>USO</u> ”)	220	115
SPDR Gold Trust (“ <u>GLD</u> ”)	224	134
iShares Core U.S. Aggregate Bond ETF (“ <u>AGG</u> ”)	70	10
Vanguard Total Bond Market ETF (“ <u>BND</u> ”)	71	10

Notably, USDC has performed the best over the past two years, with the least number of breaches beyond a 10 bps threshold. Even over the course of some of the most tumultuous market conditions in 2020 and 2021, USDC was able to maintain its peg better than the most liquid ETFs to their respective reference indices. In addition, as seen in Appendix 3, the stabilization mechanisms of both USDT and USDC have improved significantly since their inception.

Our analysis indicates that 25 bps is a reasonable threshold. This would keep USDC within the scope of Group 1b cryptoassets and exclude USDT based on the time horizons we have used. Please see [Appendix 3](#) for additional detail on this analysis.

Thus, we propose that the Basel Committee revises the criteria in the following ways:

- 1) Increase the peg range to 25 bps; and
- 2) Incorporate a risk weighted asset (“RWA”) multiplier based on the number of breaches above the increased peg.

Consultation Proposal

Alternate Proposal

¹⁰ Data is year-to-date as of August 6, 2021. See the discussion at Section IV.D.2 for information on how we calculated the breaches.

Peg Threshold	Number of Breaches	RW treatment		Peg Threshold	Number of Breaches	RW treatment
10 bps	3	Look-through	→	25 bps	3	Look-through
	4 or more	Group 2			4 to 9	2x Look-through
					10 or more	Group 2 ¹¹

This proposed approach would help smooth the cliff effect and reduce administrative burden, while also increasing the RWAs that exposures to a cryptoasset attract, to account for any incremental risk illustrated by the variance in the value of the cryptoasset relative to the underlying assets.

2. *The stabilization mechanism should be tested according to the value of the peg rather than the value of the underlying assets.*

When determining the effectiveness of the stabilization mechanism, the consultation compares the value of the Group 1b cryptoasset to the value of the underlying traditional assets. However, the true measure of whether the stabilization mechanism is functioning as intended is whether it minimizes fluctuations between the value of the Group 1b cryptoasset and the value of the peg. For example, a stablecoin with a \$1 peg should be viewed as having an effective stabilization mechanism if that stablecoin trades near \$1. Measuring against the value of the underlying assets would penalize those Group 1b cryptoassets that are over-collateralized because it would fail to meet the consultation's requirement even though the over-collateralization would help to ensure that the peg is maintained. Therefore, we request that the Basel Committee clarify that the value of the Group 1b cryptoasset be compared to the value of the peg in determining the effectiveness of the stabilization mechanism. The quantitative examples above are consistent with this approach.

3. *The approach to capitalizing Group 1b cryptoassets should clearly distinguish between structures that include credit exposure to the redeemer and those that do not; there should be clear circumstances under which banks can demonstrate adequate mitigation of step-in risk.*

The consultation provides two examples of stablecoin transaction structures and corresponding capital treatments. In the first illustrative example, cryptoasset holders transact directly with the entity that commits to exchange the cryptoasset for an underlying traditional asset or cash equal to the value of the underlying traditional asset (entities referred to in the consultation as the “redeemers” and such a transaction referred

¹¹ Stablecoins that no longer qualify for Group 1b would be assessed based on the suggested Group 2 taxonomy described in Section V.

to as “illustrative example 1”). In the second illustrative example, only a subset of cryptoasset holders transact directly with the redeemer (“members”) and other cryptoasset holders would rely on such members for their cryptoassets to maintain value relative to the underlying asset (“non-member holders”) and such a transaction referred to as “illustrative example 2”).

In illustrative example 1, where the cryptoasset holder transacts directly with the redeemer, the bank would calculate its RWAs based on the sum of (1) the RWAs applicable to a direct holding of the underlying traditional asset, using the EIF approach and (2) the value of the cryptoasset holding multiplied by the risk weight applicable to an unsecured loan to the redeemer.

In illustrative example 2, banks that are members would calculate RWAs in the same way as for holders in illustrative example 1 above. In addition, if a bank that is a member has made a commitment to buy cryptoassets from non-member holders, the bank would be required to include within credit RWAs an amount equal to the total current value of all existing cryptoassets that the bank could be obliged to purchase from non-member holders multiplied by the risk weight applicable to an unsecured loan to the redeemer.

Non-member holders in illustrative example 2 would calculate RWAs based on whether the members in such transactions have committed to buy cryptoassets in unlimited amounts.

- If members have not committed to buy cryptoassets in unlimited amounts, RWAs for a non-member holder would be required to account for the risk that all the members default (because if all members default, the non-member holders would not have a way to redeem their assets). RWAs also would account for the same risks as in illustrative example 1.
- If members have committed to buy cryptoassets in unlimited amounts, the cryptoasset exposure would attract an RWA that is equal to the sum of (1) the RWAs applicable to a direct holding of the underlying traditional assets and (2) an RWA to account for the default of members.
 - If there is just one member, the latter component would be calculated as the cryptoasset holding multiplied by the RWA applicable to a loan to the member.
 - If there are multiple members, the RWA would be the risk weight that would be applicable to the member with the highest credit rating (*i.e.*, the lowest risk weight) because additional members with lower credit ratings do not increase the risk that a non-member holder would be unable to redeem.

As noted, we agree with the “same risk, same activity, same treatment” approach that the Basel Committee states is a guiding principle of the consultation. The illustrative transaction structures appear designed to follow this principle. Along those lines, we agree with the primary risks that the illustrative examples seem to address, specifically: (1) the changing value or potential default of the underlying assets (relevant to both examples); (2) the potential default of the redeemer (relevant to both examples); (3) any

legally binding commitments to purchase cryptoassets from others (relevant to illustrative example 2); and (4) the risk to a holder who does not transact directly with the redeemer that the member who does transact with the redeemer defaults (relevant to illustrative example 2). Within this framework, and consistent with the “same, risk, same activity, same treatment” principle, we believe the Basel Committee should simplify and modify the proposed framework to address particular mitigating factors, as detailed below.

- a. The prudential framework should clearly distinguish between structures that include credit exposure to the redeemer and those that do not.

The Associations believe that the prudential framework should distinguish, in a clear and simple manner, between structures that include credit exposure to the redeemer and those that do not. Where there is credit exposure to the redeemer, that credit exposure should be risk-weighted as contemplated by the illustrative examples.

However, there may be structures where there is no credit exposure to the redeemer, due to, for example: the presence of a bankruptcy remote special purpose vehicle (“SPV”) that holds the underlying pool of assets; trust or other legally robust structure that insulates the assets from the credit risk of the redeemer; some form of collateralization; or regulatory requirements that effectively eliminate or substantially mitigate any such exposure. The consultation appears to recognize this principle in sections 2.3 and 2.4 (which discuss, respectively, the treatment of bankruptcy remote SPVs and the use of the EIF where there is “full collateralization”), but how this principle and these sections were intended to apply across the illustrative examples is not clear to the Associations. Therefore, to provide clarity, the Associations suggest adoption of this straightforward principle: in any such circumstance where there is no credit exposure to the redeemer, the EIF approach should be applied to risk-weight the underlying assets, and there should be no additional risk weight in respect of the redeemer.¹² Further, the final framework should provide flexibility to take into account potential future structures, such as a structure where a stablecoin benefits from a guarantee, liquidity facility or similar mechanism to mitigate the exposure to the underlying assets.

- b. Capital treatment for illustrative example 2 should allow banks to demonstrate adequate mitigation of step-in risk.

When discussing illustrative example 2 and the circumstance where banks act as members, the consultation notes that banks should include within RWAs amounts related to “step-in” risk, which the consultation refers to as the risk that a bank would purchase cryptoassets from non-member holders absent a legal obligation to do so, in order to satisfy the expectations of non-member holders and protect the bank’s reputation. The consultation goes on to note that an exception to this treatment “would only be made if it is clear that such step-in risk does not exist.”

¹² The Associations acknowledge that this would result in the same capital treatment as proposed for Group 1a cryptoassets with a pool of underlying assets. That result is appropriate because in both cases the only exposure the bank has is to the pool of underlying assets.

The Associations suggest that the Basel Committee explains when it would be clear that step-in risk does not exist and, thus, when an arrangement would not attract additional RWAs. For instance, we believe that there should be no step-in risk present if a bank provides, on its own volition or pursuant to a regulatory requirement, clear disclosure to non-member holders that these holders should expect to bear any risk of loss if the redeemer defaults and that the arrangement is not guaranteed or insured by the bank that is a member.¹³

As a point of clarification, we encourage the Basel Committee to distinguish the concept of step-in risk that may be present for a bank that is a member of a stablecoin arrangement from a stablecoin issuer's obligations to increase the reserves backing its stablecoin when the value of the asset pool backing such stablecoins declines.

4. Group 1b cryptoassets should be recognized as eligible collateral if their underlying assets are eligible.

Under the consultation's framework, Group 1b cryptoassets that can be redeemed for traditional instruments included in the list of eligible collateral under Chapter CRE22 of the Basel Framework¹⁴ are not eligible by themselves for the purposes of recognition as credit risk mitigation because the consultation notes that "the process of redemption adds counterparty risk that is not present in a direct exposure to a traditional asset".

We believe, where there is no credit exposure to the redeemer, this treatment should align with the treatment of Undertakings for Collective Investments in Transferable Securities and mutual funds under Chapter CRE22 of the Basel Framework. In particular, such funds qualify as eligible collateral where a price for the fund is publicly quoted daily and the fund is limited to investing in instruments that otherwise qualify as eligible collateral.¹⁵ Group 1b cryptoassets should be treated in a similar manner; if a stablecoin's price is publicly available daily and if the assets backing up the value of the stablecoin, either verified through an investment mandate or a periodic review of the assets held, are eligible financial collateral, the Group 1b cryptoassets should be as well.¹⁶

Of course, other core tenets of collateral recognition would need to be met, namely that the collateral arrangement is legally enforceable in all relevant jurisdictions, the bank has conducted a sufficient legal review to verify this enforceability and the bank has a well-founded legal basis to reach this conclusion (and undertakes such further review as

¹³ This approach would be consistent with the Basel Committee's 2017 guidelines regarding step-in risk. See *Indemnification and management of step-in risk*, Basel Committee on Banking Supervision (Oct. 2017).

¹⁴ See *Standardised approach: credit risk mitigation*, Basel Committee on Banking Supervision (Dec. 2019).

¹⁵ See *id.* at 22.39.

¹⁶ A de minimis amount of other assets held by the stablecoin should not preclude this treatment.

necessary to ensure continuing enforceability).¹⁷ If those criteria are met, and the underlying assets would be eligible collateral, so too should a Group 1b cryptoasset.

V. Group 2 Cryptoassets

Group 2, as proposed, lacks appropriate granularity, would not recognize the different risk profiles of different cryptoassets and is likely to create a cliff effect when moving from Group 1 to Group 2. Furthermore, the use of a single, punitive risk weight for Group 2 cryptoassets, rather than incorporating the existing risk treatments under the Basel framework, compromises longstanding prudential framework principles.

We believe the consultation's proposed treatment of Group 2 cryptoassets is overly blunt and unnecessary to achieve safety and soundness goals. To address these issues, we suggest establishing an additional Group 2 subcategory and propose corresponding classification conditions for the subcategories. Finally, we provide approaches to leveraging the following elements of the existing prudential framework for market risk and derivatives to apply to Group 2 cryptoassets:

- Standardized Approach (“FRTB SA”) and Internal Models Approach (“FRTB IMA”);
- Standardized Approach for Credit Valuation Adjustment (“SA-CVA”) and Basic Approach for Credit Valuation Adjustment (“BA-CVA”);
- Standardized Approach for Counterparty Credit Risk (“SA-CCR”);
- collateral eligibility;
- cleared transactions framework; and
- equity framework.

A. The Capital Treatment of Group 2 Exposures Should Not Be Dependent On the Applicable Accounting Framework

The consultation states its capital requirements only apply to those assets which have not already been deducted from common equity tier 1 (“CET1”) capital, for example due to classification as intangibles under the applicable accounting framework. We believe, for the reasons described below, that the capital treatment of Group 2 cryptoassets should not be dependent on the applicable accounting framework and that the prudential framework should be agnostic to accounting classifications.

Intangible assets are generally deducted from CET1 because of the high level of uncertainty regarding the ability of banks to realize value from these assets, especially under adverse financial conditions. This rationale is compelling, for example, in the case of goodwill. Group 2 cryptoassets are fundamentally dissimilar from this type of intangible asset. Group 2 cryptoassets can be liquidated and sold in normal or stress market conditions. Although their market values may fluctuate and demonstrate volatility, there is price discovery and market depth, particularly for Group 2a (which is

¹⁷ See *id.* at 22.9.

further described below). In addition, as discussed elsewhere in this response, the nature of banks' exposures to Group 2 cryptoassets may vary widely with materially different results in risk profiles.

This approach is also prudent in light of the evolving, and potentially inconsistent, approaches taken by different accounting frameworks. It would be an anomalous outcome if, for example, banks subject to International Financial Reporting Standards ("IFRS") or generally accepted accounting principles ("GAAP") standards in the United States, became subject to inconsistent capital requirements for the same activities.¹⁸ Applying an accounting-neutral approach generally would be consistent with similar efforts to create a globally consistent leverage framework that is agnostic to accounting standards that vary by jurisdiction.

B. Risk-Based Capital Requirements Should Vary Based On the Economic Risks Posed By Different Group 2 Cryptoasset Exposures

The broad category of Group 2 cryptoassets includes a diverse range of activities and exposures that cannot be adequately addressed through application of a single, undifferentiated 1250% risk weight with limited recognition of any hedging or netting benefits. Where banks have directional exposure to illiquid Group 2 cryptoassets that are more difficult to hedge and there is a less established price history or derivatives market function, a more conservative approach using the proposed 1250% risk weight and recognizing limited hedging and netting benefits can be used; in other cases, with sufficient depth of liquidity in the underlying position and more established controls on market functions, banks should be able to recognize market risk hedging, collateralization arrangements and counterparty netting. We believe that standards in the existing prudential framework can be applied to Group 2 cryptoassets to make these distinctions.

In designing a prudential framework for Group 2 cryptoassets, distinctions should be drawn based on:

- Whether the underlying exposure trades in a liquid two-way market (*e.g.*, positions in BTC and Ether ("ETH") clearly have a different risk profile than other Group 2 cryptoassets);
- The ability to hedge market risk associated with a Group 2 cryptoasset exposure;
- The extent and nature of collateralization arrangements, including whether a bank has received cash or high-quality sovereign securities as collateral in connection with a Group 2 cryptoasset transaction;
- Legal netting rights, including whether a Group 2 cryptoasset exposure is governed by a qualifying master netting agreement;
- Whether a bank's Group 2 cryptoasset exposure arises in the trading book or banking book; and

¹⁸ For example, the Financial Accounting Standards Board ("FASB") may reevaluate specific areas of existing GAAP in order to reduce complexity, pursuant to a June 2021 Invitation to Comment. *See Invitation to Comment: Agenda Consultation*, FASB (Jun. 24, 2021).

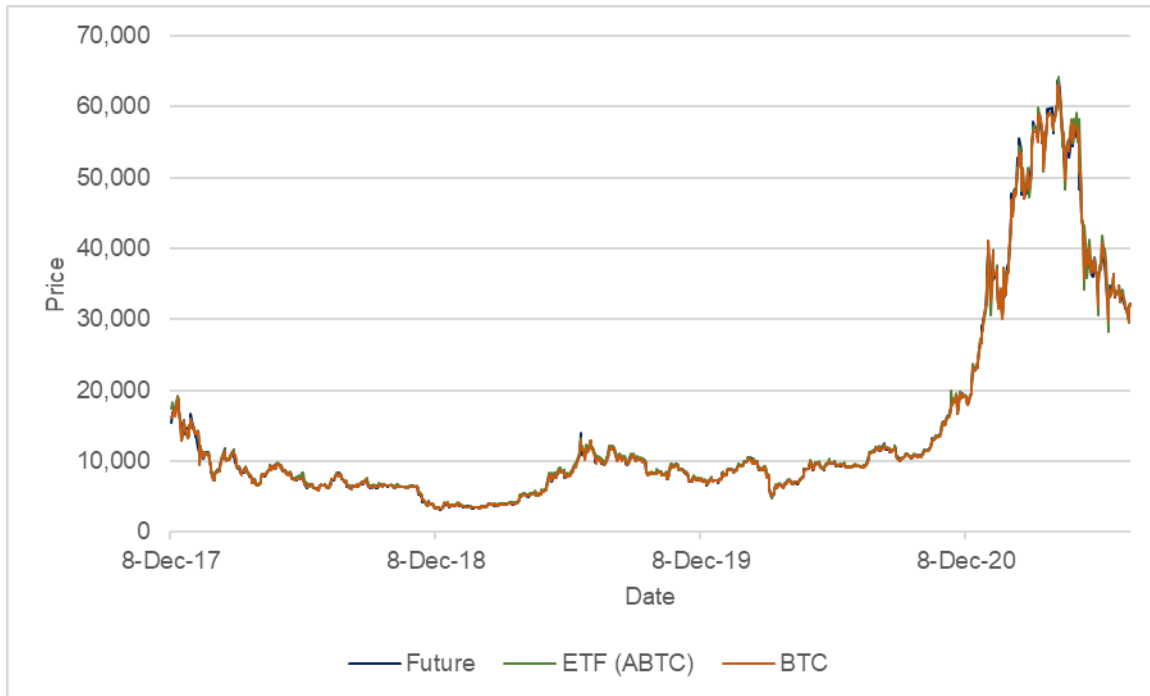
- Whether a derivative that references a Group 2 cryptoasset is cleared through a Qualifying Central Counterparty (“QCCP”).

As an example of the application of this approach, a bank might provide a client with long exposure to an established Group 2 cryptoasset’s performance through an uncleared derivative. Where the bank collects a large amount of initial margin in the form of cash, exchanges daily variation margin and has legally enforceable close-out rights in the event of counterparty default, the bank’s management of counterparty credit risk is similar to other derivative exposures. Moreover, in this example, the bank might hedge its resulting market risk through offsetting cleared or uncleared derivative transactions or by holding the Group 2 cryptoasset as a hedge. In this example, application of a 1250% risk weight to the greater of the long and short exposure with no recognition of the hedge for market risk plus the additional counterparty credit risk impact would clearly misstate the bank’s actual risk profile as the hedge would increase the bank’s RWA.

By contrast, in other cases, a bank might have unhedged exposures to unproven or illiquid Group 2 cryptoassets without the benefit of collateral or netting rights. In these cases, the prudential framework should apply more conservative requirements in the form of higher risk weights and more conservative hedging and netting recognition. While the examples above are illustrative, they highlight that the existing principles of the prudential framework can be adapted for application to Group 2 cryptoasset activities and exposures.

We also believe it is important to highlight as an initial matter that the more established Group 2 cryptoassets have exhibited high degrees of correlation against their derivatives, even in times of volatility. Given this high degree of correlation, these well-established Group 2 cryptoassets are very well-suited to common market risk hedging techniques. **The proposal to apply a punitive risk weight to the greater of the absolute value of long and short positions, disregards this high degree of observed correlation and discourages, rather than encourages, appropriate risk mitigation.** The post-crisis prudential framework for capital and liquidity has developed to incorporate a range of techniques to manage risks, and those techniques can be applied to this emerging asset class as well.

The following chart demonstrates how closely prices of BTC, BTC futures and BTC ETF have tracked with each other during recent periods of high and low volatility.



Sources: Bitcoin Reference Rate (for ETF and exchange traded product) and Chicago Mercantile Exchange (for futures).

C. Group 2 Cryptoassets Should Be Further Divided Into Two Subcategories, Reflecting the Active and Liquid Market for Some Group 2 Cryptoassets

As contemplated by the consultation, the Group 2 cryptoasset category is overly broad—it includes established assets with observed market liquidity, including BTC and ETH, together with unproven assets that lack market liquidity and have negligible values. Applying a uniform prudential framework fundamentally misrepresents the nature of risks faced by banks from these different assets. We believe that the prudential framework should recognize distinct treatments for established cryptoassets with a liquid two-way market (Group 2a) from nascent or illiquid cryptoassets (Group 2b). In making this distinction, the prudential framework should rely on objective criteria and permit specific cryptoassets to migrate from the Group 2b category to the Group 2a category (or vice versa) as the market evolves and the cryptoasset meets (or fails to meet) the relevant criteria.

1. Group 2a should include cryptoassets with a liquid two-way market and also include commonly traded indices based on reference obligations that qualify for the subgroup.

A liquid two-way market should be deemed to exist where there are independent bona fide offers to buy and sell so that a price reasonably related to the last sales price or current bona fide competitive bid and offer quotations can be determined within one day and settled at such price within a relatively short time conforming to trade custom. This

standard is based on existing Basel Committee standards.¹⁹ There are a number of measures and criteria that are applied by regulated entities to identify assets that meet this criteria today, such as market depth, size of bid-offer spread, number of available quotes and traded volume, and could similarly be applied to cryptoassets in the future. In addition, any Group 2 cryptoasset that is referenced in a derivative that is clearable at a QCCP should be considered for inclusion in Group 2a given the liquidity requirements imposed by QCCPs.

We propose that this subgroup also include the following other key attributes and prudential treatment.

- *Ongoing requirement.* Cryptoassets assigned to this category would be required to continue to meet the Group 2a standard on an ongoing basis.
- *Reclassification permitted.* Cryptoassets initially assigned to Group 2b could, over time, be reclassified to Group 2a if the cryptoassets later met the liquid, two-way market criteria, and vice versa. Although the scope of Group 2a cryptoassets could initially be limited, it could be expected that additional assets would qualify for Group 2a as trading markets develop.
- *Consistent operational resilience standards.* The operational resilience standards for Group 2a should be similar to those that apply to Group 1a and 1b (e.g., AML, operational resilience, third party risk management).
- *Trading and banking book distinction.* Group 2a cryptoassets could be held in the banking book or trading book.
 - Although we believe it is important to distinguish between trading book and banking book instruments that reference Group 2a cryptoassets, consistent with the existing framework, we think that the exposure to changes in price of Group 2a cryptoassets is best captured through the market risk framework, regardless of this classification. For banking book Group 2a cryptoassets, this proposal is still conceptually consistent with our overarching preference to treat cryptoassets through the existing framework, to the extent possible, because it is similar to the treatment of FX and commodities risk in the banking book under the current framework and net short credit and equity risk in the banking book in the future.
 - The treatment through the market risk framework and proposed calibration is discussed further below (see Section V.D).
 - These risk weightings should be subject to an exception for certain de minimis holdings that act as prepaid expenses (see Section V.E below).
- *FRTB framework applies.* FRTB should apply to exposures to this subgroup.
- *CVA framework applies.* SA-CVA and BA-CVA should apply to calculate CVA risk of exposures to this subgroup where relevant.

¹⁹ See *Minimum capital requirements for market risk*, Basel Committee on Banking Supervision (Jan. 2019, rev. Feb. 2019) ¶ 20.5 (standards applicable to correlation trading portfolios).

- *SA-CCR applies.* SA-CCR should apply to derivatives with reference exposures in this subgroup to calculate counterparty credit risk.

2. *Group 2b should consist of all other Group 2 cryptoassets.*

These cryptoassets could be held in the banking book or trading book, but would be assigned a 1250% risk weight applied to the greater of the absolute value of the aggregate long and the absolute value of the aggregate short positions, as proposed in the consultation, regardless of this classification.²⁰ Although the FRTB framework could be applied to Group 2b cryptoassets, given the less-established and illiquid nature of these assets as well as the current volatility exhibited in this market, we believe such a conservative treatment is appropriate in the near term to allow for further public and private collaboration and analysis as the market evolves. As with Group 2a, the risk weighting should be subject to an exception for certain de minimis holdings that act as prepaid expenses (see Section V.E below). In addition, SA-CCR should apply to derivatives with a Group 2b reference exposure.

D. The Existing Prudential Framework and Principles Should Be Applied To Group 2a Cryptoassets, With Certain Modifications As Necessary

1. *FRTB SA.*

Group 2 cryptoassets can be volatile, but some (*e.g.*, those that would be included in our proposed Group 2a) are directly hedgeable with exchange traded products or futures and exhibit a high degree of correlation and have high price transparency. **Leveraging the FRTB SA framework would maintain simplicity, better align RWA with risk and recognize the characteristics of the assets.** Group 2a cryptoassets could be added to the FRTB sensitivities-based method (“SBM”), with the following characteristics:

- FRTB SBM risk factors for Group 2a cryptoassets should be defined as one unit of the Group 2a cryptoasset in the bank’s reporting currency. This definition enables the sensitivity to each individual Group 2a cryptoasset to be segregated from any other risks in the transaction (*e.g.*, for a USD reporting currency bank, a trade referencing BTC against EUR should result in BTC risk as well as EUR-USD risk).
- Two sensitivities to the same Group 2a cryptoasset (*e.g.*, BTC versus BTC future) should be netted before application of risk weight, as prescribed by the FRTB standard. As shown in the chart in Section V.B, different exposures to the same Group 2a cryptoassets have shown a high degree of price correlation and very limited basis even during periods of high volatility. For example, BTC and BTC futures have correlations consistently above 99% in the period October 1, 2017 – June 30, 2021.

²⁰ A bank subject to a CET1/RWA capital ratio above 8% should be permitted to assign a risk weight capped at an RWA value equal to a deduction (*e.g.*, application of a 1000% risk weight to a bank subject to a 10% CET1/RWA ratio is effectively the same outcome as a deduction).

- Risk weights of potentially 90-95% should apply to Group 2a based on price movements in a sample of more established Group 2 cryptoassets²¹ with an assumed liquidity horizon of 20 days during the period October 1, 2017 – June 30, 2021. Note that FRTB SA is a capital requirement measure, so it is multiplied by 12.5 to calculate RWA. Thus, a risk weight of 90-95% in capital charge terms corresponds to a risk weight of 1125%-1188% in RWA terms.²² Although the traded volume of cryptoassets that would be expected to fall in Group 2a is relatively high compared to certain other traded instruments and would support a liquidity horizon of as low as 10 days, we are proposing initially using 20 days as a measure of conservativeness while the market is still evolving. We do, however, feel that the appropriateness of this liquidity horizon and the resulting risk weights should be reassessed over time in line with market changes and the collection of data history over a longer time period. See the data in Section V.D.5 below on Collateral Eligibility comparing average daily volume of a sample of Group 2 cryptoassets, supporting comparability to traded instruments with liquidity horizons already established in the FRTB framework.
- Correlation should be recognized among different Group 2a cryptoassets, consistent with the FRTB framework. Based on analysis of the correlation of 10-day price returns for sample Group 2a cryptoassets over the same October 1, 2017 – June 30, 2021 time period, we believe a correlation factor of 75-80% would be appropriate for Group 2a cryptoassets. However, given the relatively nascent nature of this market, we believe it is appropriate to set an interim correlation parameter that recognizes less hedging benefit among different cryptoassets than what this empirical data analysis would support. This correlation factor should be reassessed when a consistently observed correlation among Group 2a cryptoassets is sustained over a longer time period.
- Although cryptoassets may be incorporated into an existing asset class in other contexts, for risk-weighted asset calculations under the FRTB framework, we believe that there is not sufficient correlation currently exhibited between Group 2a cryptoassets and any existing risk class to justify its incorporation. We believe that this approach is the most prudent option for determining required capital while the market is still relatively new because it limits the hedging and diversification benefit with other asset classes. This approach is particularly important in the context of FRTB IMA, as discussed below. As with other elements of the proposed framework, it may be appropriate to revisit this classification over time as the market in Group 2a cryptoassets further evolves.

See [Appendix 4](#) for analysis on cryptoasset volatility and correlation. See [Appendix 5](#) for sample calculations for hypothetical portfolios including Group 2a cryptoassets demonstrating the appropriateness of FRTB SBM compared to the Basel Committee's

²¹ The sample in this analysis consisted of BTC cash, BTC, BTC futures and ETH.

²² Please see the example calculations in [Appendix 4](#) for a more detailed illustration of how RWA compares in our proposal to the consultation.

proposal. These analyses demonstrate that the prudential framework should reflect hedging and, thereby, encourage appropriate risk management.

2. *FRTB IMA.*

Group 2a cryptoassets should be eligible for FRTB IMA based on the same set of supervisory model review standards, model performance tests and risk factor modellability tests as other types of financial instruments. As highlighted elsewhere in this response, many cryptoasset exposures are fundamentally similar to other activities engaged in by banks in trading markets today. While Group 2 cryptoassets have exhibited greater price volatility than some other financial instruments, those that would be classified as Group 2a are highly liquid by definition and would have a high degree of price transparency, making them good candidates for IMA. As an example, FRTB equates liquidity with the availability of “real prices”. Group 2a cryptoassets, by definition, will have a liquid two-way market and so would likely have more than enough real prices available to satisfy the risk factor eligibility test. In addition, an expansion of product offerings, such as the launch of Micro-BTC futures contract by CME Group Inc. in April 2021 to increase accessibility for retail investors, is likely to ensure sufficient market depth and ongoing liquidity.

Aside from the likelihood that banks will be able to build accurate market risk models for Group 2a cryptoassets based on the liquidity and price transparency of these products, the FRTB IMA framework already has built-in standards and requirements to include only those products, strategies and risk factors that can be modelled sufficiently accurately. In some ways, the need for banks to adjust their models over time to meet eligibility requirements makes this approach more suited to still-evolving markets such as those for Group 2a cryptoassets. If banks do not accurately value or capture all material basis risks associated with different Group 2a cryptoassets as the market changes over time, backtesting and P&L attribution test results will reflect this inaccuracy and the bank potentially will lose model approval unless they enhance their models. Similarly, if a particular Group 2a cryptoasset were to exhibit a reduction in transaction volume or price transparency, the associated risk factors would become non-modellable and be subject to an add-on. As acknowledged in the FRTB framework, provided that market risk models can meet these standards, market risk models would be expected to produce a more accurate reflection of the market risk of a product or strategy. Overall, given these controls built into the framework and the benefits of IMA to better reflect hedge strategies and effectiveness and evolve with markets over time, there is sufficient justification to allow Group 2a cryptoassets to be eligible for IMA.

In order for banks to include Group 2a cryptoassets in IMA, a liquidity horizon and risk class needs to be determined. As discussed in the FRTB SA section above, we are proposing to use a 20-day liquidity horizon for Group 2a cryptoassets to be conservative despite data on trading volume justifying a 10-day liquidity horizon. See the data in Section V.D.5 below on Collateral Eligibility comparing average daily volume of a sample of Group 2 cryptoassets, supporting comparability to traded instruments with liquidity horizons already established in the FRTB framework. Similarly, we are proposing to include Group 2a cryptoassets in their own risk class for FRTB IMA

purposes consistent with FRTB SA. In the context of IMA, this will sufficiently constrain the observed correlations with any other risk classes in FRTB IMA through the internally modelled capital charge calculation. This proposed classification is conservative only due to the mechanics of the FRTB IMA capital calculation and is not a statement on the appropriate asset class of Group 2a cryptoassets more broadly. In addition, similar to other elements of the framework, we believe that this classification should be reassessed over time as necessary, should the market evolve.

3. *CVA.*

The CVA risk of derivatives on Group 2a cryptoassets is not fundamentally different from the CVA risk on derivatives with other underliers. Therefore, the risk can be captured based on CVA guidance. Banks should be able to use SA-CVA with the same bucketing, risk weight and correlations proposed for FRTB SBM. BA-CVA does not include the non-counterparty credit risks of CVA, so it can be applied to derivatives on Group 2a cryptoassets with no modifications.

4. *SA-CCR.*

The counterparty credit risk of derivatives with Group 2 cryptoasset reference assets is fundamentally similar to counterparty credit risk of derivatives involving other types of reference assets. Derivatives referencing Group 2 cryptoassets are subject to the same ISDA legal netting agreements and the same Credit Support Annex margin agreements. Other than the reference asset, the derivatives are no different than any other derivative.

In each case, the bank is exposed to the risk of non-performance or default by its counterparty on the derivative contract. The bank may or may not have a qualifying master netting agreement (“QMNA”) governing the derivative transactions; where the bank has a QMNA, it has enforceable netting rights against the counterparty. In addition, a bank may collect substantial initial margin from its counterparty in the form of cash or high-quality sovereign securities to manage its credit risk. Finally, the exchange of daily variation margin reduces jump-to-default risk in reference assets with higher volatility.

For the reasons summarized above, a bank’s counterparty credit risk in these derivatives is similar to counterparty credit risk in derivatives involving equity, credit, commodity or other traditional reference assets. The economic exposure resulting from the derivative may be different, but not the nature of the counterparty credit risk. Accordingly, SA-CCR should be adapted for application to these derivatives.

The SA-CCR framework includes various asset class-specific calibrations. Thus, SA-CCR necessarily would need to be adapted for application to these reference assets. We propose the following calibrations for consideration:

- The supervisory factor for Group 2a cryptoassets should be around 37% to 39% based on converting proposed FRTB SBM risk weights.

- The supervisory factor for Group 2b cryptoassets should be in the range of 62% to 70% based on analysis of 10-day price returns of a sample of Group 2 cryptoassets and conversion to the SA-CCR supervisory factor.
- Group 2a cryptoassets should be treated as a hedging set. Similar to FRTB SA, this would mean that exposure from derivative transactions referencing the same Group 2a cryptoasset would net, and exposure from derivative transactions referencing different Group 2a cryptoassets would be aggregated according to the SA-CCR rule using a correlation parameter. Given the relatively nascent nature of this market, we believe it is appropriate to set an interim correlation parameter that may be lower than what empirical data analysis would support. However, initial calibration should be reassessed over time as more data becomes available. Any derivative exposure based on the exchange of two Group 2a cryptoassets (e.g., BTC-ETH swap) would be treated as a basis transaction as defined under SA-CCR.
- Each Group 2b cryptoasset can be conservatively treated as its own hedging set for potential future exposure (“PFE”).
- The replacement cost calculation should follow legal opinions on netting and the accounting and financial reporting treatment.
- Traditional forms of initial and variation margin should be recognized as exposure-reducing in the same manner as other derivative asset classes.

See [Appendix 5](#) for sample calculations for hypothetical portfolios including Group 2 cryptoassets demonstrating the appropriateness of SA-CCR compared to the consultation’s proposal (the example assumes commodity supervisory factors). See [Appendix 4](#) for analysis supporting our proposed modifications.

5. Collateral Eligibility.

While we acknowledge that cryptoassets are an emerging asset class, we believe that an explicit exclusion of Group 2 cryptoassets from recognition as eligible financial collateral does not sufficiently recognize differences in risk profile and liquidity among Group 2 cryptoassets and is inconsistent with Basel Committee principles. Instead, we believe the framework should permit Group 2 cryptoassets to qualify as financial collateral if and to the extent they satisfy general principles for collateral eligibility within the Basel framework, as we believe would be the case for Group 2a cryptoassets. In those cases, Group 2a cryptoassets should be added to the list of eligible financial collateral.

The consultation summarizes the current framework for identifying eligible financial collateral, the preconditions for which are “whether the collateral can be liquidated promptly and there is legal certainty of access to the collateral”. As this framework has been used to determine the current list of eligible financial collateral, it should also be used when evaluating cryptoassets.

The principles for financial collateral recognition outlined in the consultative document emphasize that any asset classified as eligible financial collateral must be or have:

- Subject to legally enforceable documentation that gives a bank the right to liquidate or take legal possession of the collateral in a timely manner;
- Subject to legal arrangements in which a bank has a perfected, first-priority security interest; and
- Sufficient levels of liquidity and price transparency.

As long as banks can demonstrate that the Group 2a cryptoassets meet the above criteria, banks should be allowed to use these assets as a credit risk mitigant. Further, a bank extending credit through repo-style transactions and margin loans involving Group 2a cryptoassets should be permitted to calculate capital charges using the comprehensive approach in place for these types of exposures with any other form of eligible collateral.

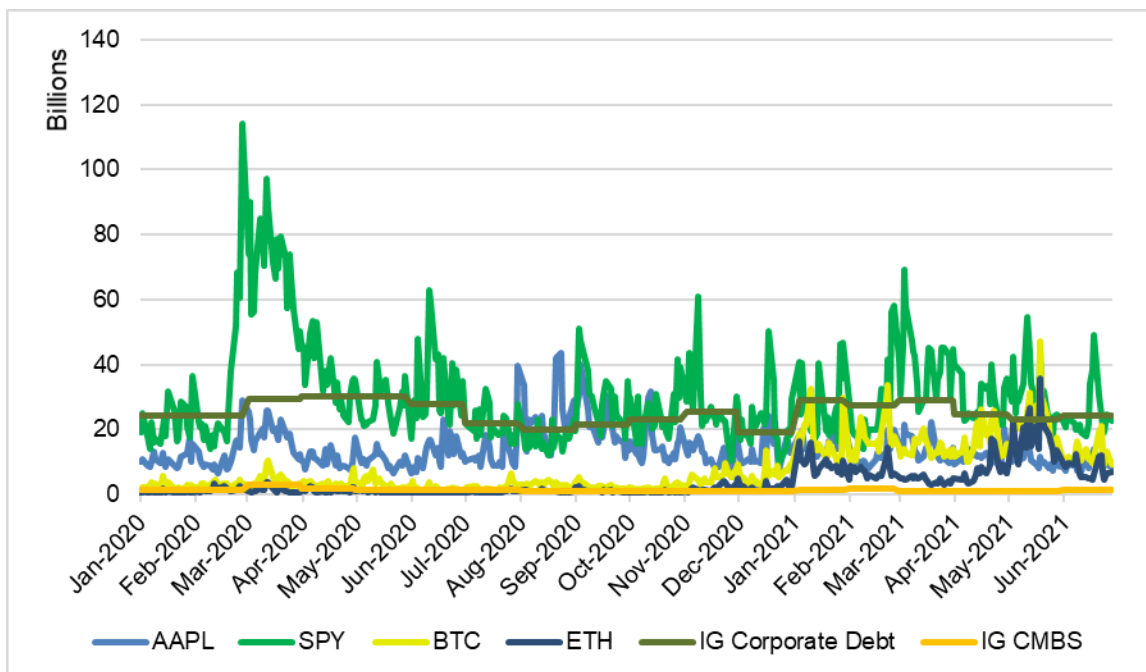
a. Group 2a assets align with the financial collateral criteria.

Legal enforceability is critical for any collateralized transaction, as it enables banks that are party to such transactions to claim possession of the collateral during a credit event. The legal framework for Group 2 cryptoassets continues to develop, but provided that enforceable legal provisions exist, Group 2 cryptoassets that demonstrate observable liquidity and price transparency (*i.e.*, our proposed Group 2a) should be eligible to be financial collateral.

With regards to the principle of liquidity, it is critical for banks to have the capacity to liquidate seized collateral. Price transparency is also critical as the mark-to-market value of collateral must be readily determinable and realizable in order to properly assess overall exposure, and thereby manage risk. Although not all Group 2 cryptoassets are traded with sufficient levels of volume to provide appropriate liquidity, assets such as BTC and ETH compare well to other asset classes that are considered eligible financial collateral this year. For example, both have demonstrated volume levels comparable to those of major publicly traded equities in recent time periods. Throughout most of 2021, BTC has had higher average daily trading volume (“ADV”) than Apple, Inc. (“AAPL”). In particular, in June 2021, BTC’s ADV was \$12.3bn, while AAPL’s was \$9.6bn, an almost 30% difference. A bank would be able to recognize AAPL as financial collateral, and thereby reduce their overall exposure, but it could not do so with BTC—despite BTC having approximately 30% higher ADV and comparable price transparency during that time period. Although ETH does not have as sustained a period of higher ADV than AAPL, it has exhibited periods with higher ADV and its ADV is trending upwards.

The graph below compares liquidity across select assets and compares ADV from January 2020 through June 2021.²³

²³ AAPL and SPY ADV sourced from Bloomberg, BTC and ETH from Coin Metrics, Corporate Debt and CMBS from SIFMA (U.S. only).



Although the above data analysis is limited only to two of the most highly traded Group 2 cryptoassets, it demonstrates that there are examples of Group 2 cryptoassets, particularly Group 2a cryptoassets, that have the same liquidity as other assets that are recognized as financial collateral. Should this comparison become less favorable to BTC and ETH, or were there to be a significant change in ADV or other indications of liquidity, under our proposals banks would need to reassess and determine that these assets are no longer eligible. Therefore, excluding all Group 2 cryptoassets, rather than allowing for potential qualification on a case-by-case basis, is inappropriate.

- b. The volatility of Group 2a cryptoassets should not preclude recognition as eligible financial collateral.

The comprehensive approach in the capital rules already incorporates volatility in the supervisory haircuts applied to collateral. Haircuts applied to Group 2a cryptoassets should, in turn, appropriately reflect their volatility.

The cryptoasset market is still developing, and we believe that outright prohibition is misaligned with the risk-based principles in place today. To ensure that the capital rules remain relevant as the market grows, we believe it is critical that the same principles-based framework be applied to Group 2a cryptoassets in determining financial collateral eligibility, rather than an outright prohibition.

6. Cleared Transactions.

We expect that over time a market for cleared derivatives, beyond the existing futures market, with cryptoasset exposures may develop. In that case, we believe those derivatives transactions would be fundamentally similar to cleared derivatives transactions with other traditional reference assets. Clearing firms serve an important

intermediary role on behalf of clients – providing access to central clearing and transparent, regulated markets, often for risk mitigation and hedging purposes. Clearing firms should not be penalized for performing this critical role, which also reduces systemic risk in the financial system, and the capital treatment should be, in principle, no different to the one that applies to other cleared derivatives.

Therefore, the existing prudential framework for cleared transactions should be available to reflect differences in risk and market functioning of cleared derivatives transactions with cryptoasset reference obligations, as compared to bilateral transactions. The risk of this activity is no different, in legal or economic substance, from counterparty credit risk in a cleared derivative with any reference asset. The guidance for exposure calculations, risk weights and default fund contributions could follow the proposals outlined above in this section. In this context, we would note that it is crucial for QCCPs to be able to calculate the hypothetical capital requirements, in particular the underlying exposures for derivatives referencing cryptoassets, using SA-CCR. In addition, the general QCCP protocols and guidelines can continue to be used to determine QCCP given the suitability of BCBS-IOSCO-PFMI standards and well-established processes for identification of QCCP across different jurisdictions.

E. Certain Cryptoassets Should Be Treated As Prepaid Expenses

We suggest one exception to our proposed risk weights for Group 2a and Group 2b cryptoassets. Specifically, in some cases participation on a distributed ledger network can require the participant to hold and provide a de minimis amount of cryptoassets as a fee for transacting on the network, sometimes referred to as “gas” fees. These fees are, quite simply, transaction costs that must be paid using a cryptoasset. For this reason, we believe the appropriate treatment for risk-weighting the de minimis amount of cryptoassets held to pay such fees would be to treat the cryptoassets as prepaid expenses.

F. The Scope of Equity Investments Subject to the Consultation is Unclear and May Not Reflect Drivers of Change in Value of These Investments

The requirement to treat entities “the material value of which is primarily derived from Group 2 cryptoassets” in the same manner as Group 2 cryptoassets may have unintended consequences without further clarification. As written, the scope of this requirement could apply to a large number of start-ups and well-established companies and would also likely lead to inconsistent application. For example, the initial investment in a start-up company and cash reserves may be denominated in Group 2 cryptoassets, but the changes in value of this company are much more likely to be based on the business model and potential for growth of the company than the Group 2 cryptoasset. Similarly, it could be argued that the value of a company that provides crypto data solutions derives its material value from Group 2 cryptoassets. However, the drivers of value will be the quality of, and demand for, the solution. Therefore, the normal course rules for equity exposures would be more appropriate. For an investment in or seeding of a fund that invests in Group 2 cryptoassets, the existing EIF approach would maintain consistency with treatment of the actual Group 2 cryptoassets. However, an investment in speculative

unlisted exposure would continue to receive a 400% risk weight even when the company receiving the investment itself has cryptoasset-related business activities or exposures.

VI. Other Regulatory Requirements

Section 4 of the consultation outlines “other regulatory requirements” for all cryptoassets. The Basel Committee does not propose to prescribe any new regulatory treatment for Group 1a, 1b or Group 2 cryptoassets under the leverage ratio, large exposures framework or liquidity ratio requirements.

A. The Associations Agree With the Leverage Ratio Proposal

The consultation proposes including cryptoassets in the leverage ratio exposure measure according to their value for financial reporting purposes, based on applicable accounting treatment for exposures with similar characteristics, consistent with the leverage ratio standard. Where the cryptoasset exposure is an off-balance sheet item, the applicable credit conversion factor provided in the leverage ratio framework would be used to calculate the exposure measure. Exposures for cryptoasset derivatives would follow the proposed risk-based capital framework applicable to Group 2 cryptoassets.

We generally agree with the Basel Committee’s proposed approach, although we note two points of clarification. Consistent with the comments above regarding the use of SA-CCR, the SA-CCR methodologies should be used for determining the exposure amount of derivatives with a cryptoasset reference obligation for purposes of calculating a bank’s total leverage exposure. In addition, as noted in Section V.A above, we believe that the capital treatment of Group 2 exposures should not be dependent on the applicable accounting framework. Thus, Group 2 exposures should attract RWAs irrespective of the applicable accounting treatment and should not be deducted from CET1. In that case, it is sensible to include cryptoasset exposures in the leverage ratio exposure measure based on carrying value. If a cryptoasset, however, were to be deducted from CET1, the carrying value of that asset should not be included in the leverage ratio exposure measure.

B. The Associations Agree With the Large Exposures Framework Proposal

The consultation proposes that the treatment of cryptoassets, for large exposures purposes, will follow the same principles as for other exposures. Cryptoasset exposures that result in credit risk exposure are included in the large exposure measure based on their value for financial reporting purposes, consistent with the large exposures standard. The bank must identify and apply the large exposure limits to each counterparty, or group of connected counterparties, to which it is exposed. If the cryptoasset exposes the bank to the risk of default of more than one counterparty, the bank must calculate the respective amount to which it is exposed to default risk for large exposure purposes, for each counterparty. This principle also applies to the default risk arising from any exposure to underlying asset(s). Assets that do not expose banks to default risk do not give rise to a large exposures requirement.

We agree with the Basel Committee’s proposed approach. The Associations also suggest that a large exposure limit of 15% of tier 1 capital should apply to a bank’s net exposures to all Group 2 cryptoassets. This would treat cryptoasset exposures in the same way as exposures of a global systemically important bank (“GSIB”) to another GSIB under the large exposure framework. We believe this limitation is justified, in light of the relatively nascent nature of cryptoasset markets.

C. The Basel Committee Should Not Preempt the Development of the Cryptomarket By Prematurely Establishing Punitive Liquidity Ratio Requirements For Cryptoassets

Although the Associations agree that a cryptoasset and a traditional asset with the same underlying will not automatically have the same liquidity characteristics, we appreciate that the cryptoasset market is still evolving with many facets, particularly related to market behavior, still unknown. It is therefore difficult to make a categorical assessment with regards to the liquidity element, even less so under stress, which is why we would recommend the Basel Committee avoids preempting the development of the market, and bank entrants especially, by setting a punitive treatment of these assets before having enough evidence to support it.

In that respect, we recommend the same treatment be afforded to cryptoassets as with traditional assets in relation to qualifying as high-quality liquid assets (“HQLA”). In other words, should the eligibility criteria defined by the Basel Committee for all assets be met by a cryptoasset, there is no reason for it not to be considered as HQLA, provided of course that this can be substantiated. Therefore, we suggest that Group 1a and 1b cryptoassets be eligible to qualify as HQLA.

Group 2 cryptoassets do not share legal, economic or regulatory characteristics of Level 1 or 2a HQLA. Group 2a cryptoassets may, however, resemble Level 2b HQLA in some respects, although price volatility could be a limiting factor. That said, we recommend that the prudential framework permit Group 2a cryptoassets potentially to qualify as Level 2b HQLA if specific cryptoassets meet applicable Liquidity Coverage Ratio (“LCR”) standards.

As such, further guidance by both the Basel Committee and regional regulators would be welcome as long as it can also be supported by clear evidence. In the meantime, the Basel Committee should ensure that a review date is set to reassess its current position once more data becomes available. This would allow for a more realistic calibration of the LCR and net stable funding ratio factors.

VII. Disclosure Requirements

The consultation notes that the “disclosure requirements for banks’ exposures to cryptoassets or related activities should follow the general guiding principles for banks’ Pillar 3 disclosures.” The Associations agree with this approach. In particular, we underscore that for disclosures to be meaningful to users, a materiality threshold should be applied. The Associations also agree that Group 2 cryptoasset exposures should be

disclosed pursuant to the relevant existing disclosure standards for the underlying traditional asset. In all events, before Pillar 3 disclosure requirements are finalized, the Basel Committee should consult publicly on the particulars of the disclosure templates that would be applicable to Group 1b, Group 2a and Group 2b disclosure requirements.

VIII. Conclusion

We support the Basel Committee's development of a framework for prudential treatment of cryptoassets. In connection with this framework, we respectfully request that the Basel Committee ensures that the framework: (1) is not overly conservative, so that it does not preclude regulated bank involvement in certain segments of cryptoasset markets; (2) recognizes effective hedging; (3) separately capitalizes the banking book and trading book; (4) ties capital treatment of cryptoassets to the risks of the assets, rather than the accounting treatment; and (5) is agile by design.

* * *

The Associations appreciate your consideration of our comments and proposals and remain at your disposal to discuss any of these views in greater detail.


Respectfully submitted,



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cc: Jens Weidmann, Chair, Bank for International Settlements
Sir Jon Cunliffe, Chair, Committee on Payments and Market Infrastructures
Randal K. Quarles, Chair, Financial Stability Board
Ashley Ian Alder, Chair, International Organization of Securities Commissions

Simon Gleeson, Clifford Chance LLP
David L. Portilla, Cravath, Swaine & Moore LLP
Jai Massari, Davis Polk & Wardwell LLP
Lewis Cohen, DLx Law

Appendix 1
Summary of Comments and Cryptoasset Taxonomy²⁴

Out of Scope Assets	
Suggested Out of Scope Assets	Page Reference
<p>The Associations request that the following assets be considered outside the scope of a prudential framework for cryptoassets:</p> <ul style="list-style-type: none"> • CBDCs; • financial assets or instruments (<i>e.g.</i>, deposit claims, debt securities, asset-backed securities, fund shares, other equity interests, derivatives contracts, foreign exchange contracts and regulated e-money or stored value instruments) that are created in a “traditional manner”²⁵, where the transfer thereof between owners is undertaken with or through one or more regulated entities, or otherwise within a legally recognized or regulated framework, through the use of some form of DLT; • the digital representation of rights and obligations of one party against another party, where at least one such party is a regulated entity (<i>e.g.</i>, depository, custodian, securities intermediary, etc.), and has the ability to transfer such rights and obligations using DLT; • non-financial assets where blockchain-based records are used to record and facilitate transfer of ownership; and • investment funds with traditional underlying assets, irrespective of whether the interest in the fund is held in tokenized form. 	See page 11

²⁴ Please refer to the Associations’ full letter for the Associations’ complete comments and further details.

²⁵ “Traditional manner” refers to the execution of a legally binding or otherwise enforceable agreement or instrument, whether represented in, or embodied by, a paper instrument that will be held in custody or dematerialized form, and recorded or held using traditional means.

Group 1 Classification Conditions	
Suggested Modifications to Proposed Conditions	Page Reference
<p>Condition No. 1. The consultation proposes that the cryptoasset either is a tokenized traditional asset or has a stabilization mechanism that is effective at all times in linking its value to an underlying traditional asset or a pool of traditional assets. For the stabilization mechanism to satisfy the “effective at all times” condition, banks must monitor daily the difference between the value of the cryptoasset and the underlying traditional asset(s), the difference of which must not exceed 10 bps of the value of the underlying traditional asset more than three times over a one-year period.</p> <p><i>Group 1a:</i> The Associations agree that tokenized traditional assets must be digital representations of traditional assets using cryptography, DLT or similar technology rather than recording ownership through the account of a central securities depository/custodian. Group 1a should include financial assets or instruments that are analogous to traditional financial assets or instruments but which are “natively digital” (that is, are legally constituted solely in digital form and the ownership of which is exclusively and definitively determined using DLT).</p> <p><i>Group 1b:</i> The Associations believe the 10 bps peg criterion should be modified to 25 bps. Further, the stabilization mechanism should be tested according to the value of the peg rather than the value of the underlying assets.</p>	See page 15
<p>Condition No. 2. The consultation proposes that all rights, obligations and interests arising from cryptoasset arrangements that meet Condition No. 1 (above) are clearly defined and legally enforceable in jurisdictions where the asset is issued and redeemed. In addition the applicable legal framework(s) ensure(s) settlement finality.</p> <p>The Associations generally agree with this condition.</p>	N/A
<p>Condition No. 3. The consultation proposes that the functions of the cryptoasset and the network on which it operates, including the distributed ledger or similar technology on which it is based, are designed and operated to sufficiently mitigate and manage any material risks.</p> <p>The Associations suggest using existing risk management expectations to manage risks of cryptoassets and networks upon which they operate.</p>	See page 12

<p>Condition No. 4. The consultation proposes that entities that execute redemptions, transfers or settlement finality of the cryptoasset are regulated and supervised.</p> <p>The Associations recommend requiring banks engaging with DLT to have a robust and transparent risk management framework for monitoring these networks and to take appropriate mitigation actions as necessary; such robust risk management practices may consider, as part of the due diligence process, whether “operators of the transfer and settlement systems” are regulated and supervised, but regulation and supervision should not be an explicit requirement.</p>	See page 13
Group 1a	
Suggested Definition	Page Reference
Financial assets or instruments that are analogous to traditional financial assets or instruments but which are “natively digital” (that is, are legally constituted solely in digital form and the ownership of which is exclusively and definitively determined using DLT).	See page 15
Suggested Capital Treatment	Page Reference
<p><u>Credit and Market Risk</u> The Associations generally agree with the consultation’s proposal. Group 1a cryptoassets would be subject to minimum credit and market risk capital requirements that are equivalent to those for the related traditional asset. This treatment should apply both whether there is a single underlying asset or pool of underlying assets; in the latter case, EIF should be used, as applied under the existing Basel framework.</p> <p><u>Operational Risk</u> A singular operational risk add-on charge only for cryptoassets, as contemplated by the consultation, is inconsistent and unnecessary because existing and future operational risk capital frameworks, including internal and supervisory assessments, are already capable of taking into account such risks. The existing operational risk capital framework should be applied to Group 1a cryptoasset exposures and activities.</p>	<p>See page 15</p> <p>See page 14</p>

Group 1b	
Suggested Definition	Page Reference
Cryptoassets that have an effective stabilization mechanism such that the difference between the value of the cryptoasset and the value of the peg does not exceed 25 bps more than nine times in a one-year period, and to which an RWA multiplier would apply if the difference in value exceeds the 25 bps peg threshold more than three times in the one-year period, as described below.	See page 15
Suggested Capital Treatment	Page Reference
<p><u>Credit and Market Risk</u> The prudential framework should distinguish between structures that include credit exposure to the redeemer and those that do not. Where there is credit exposure to the redeemer, that credit exposure should be risk-weighted as contemplated by the consultation's illustrative examples. Where there is no credit exposure to the redeemer, the EIF approach, as applied under the existing Basel framework, should be used to risk-weight the underlying assets, and there should be no additional risk weight in respect of the redeemer.</p> <p>With respect to illustrative example 2, the Basel Committee should explain when it would be clear that step-in risk does not exist and, thus, when an arrangement would not attract additional RWAs. For instance, there should be no step-in risk present if a bank provides clear disclosure to non-member holders that these holders should expect to bear any risk of loss if the redeemer defaults and that the arrangement is not guaranteed or insured by the bank that is a member.</p> <p>A look-through risk-weight treatment would apply to Group 1b cryptoassets that breach the 25 bps peg threshold three times or fewer within a one-year period. Where a Group 1b cryptoasset breaches the 25 bps peg threshold between four and nine times in a one-year period, the risk weight of the underlying assets would be subject to a 2x multiplier. At ten breaches, a cryptoasset would not qualify as Group 1b and would be assessed based on the suggested Group 2 framework described below.</p> <p><u>Operational Risk</u> A singular operational risk add-on charge only for cryptoassets, as contemplated by the consultation, is inconsistent and unnecessary because existing and future operational risk capital frameworks, including internal and supervisory assessments,</p>	<p>See page 17</p> <p>See page 19</p> <p>See page 16</p> <p>See page 14</p>

are already capable of taking into account such risks. The existing operational risk capital framework should be applied to Group 1b cryptoasset exposures and activities.	
<u>Collateral Eligibility</u> Group 1b cryptoassets should be recognized as eligible collateral if their underlying assets are eligible.	See page 20
Group 2a	
Suggested Definition	Page Reference
Cryptoassets with a liquid two-way market and commonly traded indices based on reference obligations that qualify for the subgroup. A liquid two-way market should be deemed to exist where there are independent bona fide offers to buy and sell so that a price reasonably related to the last sales price or current bona fide competitive bid and offer quotations can be determined within one day and settled at such price within a relatively short time conforming to trade custom. There are a number of measures and criteria that are applied by regulated entities to identify assets that meet this liquid market criteria today, such as market depth, size of bid-offer spread and number of available quotes and traded volume. These factors could similarly be applied to cryptoassets to determine whether an asset qualifies as Group 2a. In addition, any Group 2 cryptoasset that is referenced in a derivative that is clearable at a QCCP should be considered for inclusion in Group 2a given the liquidity requirements imposed by QCCPs.	See page 24
Suggested Capital Treatment	Page Reference
The capital treatment of Group 2a exposures should not be dependent on the applicable accounting framework, and the prudential framework should be agnostic to accounting classifications.	See page 21
As detailed below, the existing prudential framework and principles should be applied to Group 2a cryptoassets, with certain modifications as necessary.	
<u>Credit and Market Risk</u> <ul style="list-style-type: none"> Group 2a cryptoassets could be held in the banking book or trading book.²⁶ 	See page 25

²⁶ Although we believe it is important to distinguish between trading book and banking book instruments that reference Group 2a cryptoassets, consistent with the existing framework, we think that the exposure to changes in price of Group 2a cryptoassets is best captured through the market risk framework,

<ul style="list-style-type: none"> • The FRTB framework should apply. • SA-CVA and BA-CVA should apply. • SA-CCR should apply to derivatives with reference exposures in this subgroup to calculate counterparty credit risk. 	
<p><u>Operational Resilience Standards</u> The operational resilience standards for Group 2a should be similar to those that apply to Group 1a and 1b (<i>e.g.</i>, AML, operational resilience, third party risk management).</p>	See page 25
<p><u>Collateral Eligibility</u> The framework should permit Group 2a cryptoassets to potentially qualify as financial collateral if and to the extent they satisfy general principles for collateral eligibility within the Basel framework.</p>	See page 30
<p><u>Cleared Transactions</u> The existing prudential framework for cleared transactions should be available for cleared derivatives transactions with cryptoasset reference obligations.</p>	See page 32
<p><u>Prepaid Expenses</u> De minimis holdings that are required to transact on a network, sometimes referred to as “gas” fees, should be risk weighted as prepaid expenses.</p>	See page 33
<p><u>Ongoing Requirements and Reclassification</u></p> <ul style="list-style-type: none"> • Cryptoassets assigned to this category would be required to continue to meet the Group 2a standard on an ongoing basis. • Cryptoassets initially assigned to Group 2b could, over time, be reclassified to Group 2a if the cryptoassets later met the liquid two-way market criteria, and vice versa. Although the scope of Group 2a cryptoassets could initially be limited, it could be expected that additional assets would qualify for Group 2a as trading markets develop. 	See page 25

regardless of this classification. For banking book Group 2a cryptoassets, this proposal is still conceptually consistent with our overarching preference to treat cryptoassets through the existing framework, to the extent possible, because it is similar to the treatment of FX and commodities risk in the banking book under the current framework and net short credit and equity risk in the banking book in the future.

Group 2b	
Suggested Definition	Page Reference
All cryptoassets that do not qualify for another category.	See page 26
Suggested Capital Treatment	Page Reference
The capital treatment of Group 2b exposures should not be dependent on the applicable accounting framework.	See page 21
<u>Credit and Market Risk</u> Group 2b cryptoassets could be held in the banking book or trading book, but would be assigned a 1250% risk weight applied to the greater of the absolute value of the aggregate long and the absolute value of the aggregate short positions, as proposed in the consultation, regardless of this classification. SA-CCR should apply to derivatives with a Group 2b reference exposures.	See page 26
<u>Cleared Transactions</u> The existing prudential framework for cleared transactions should be available for cleared derivatives transactions with cryptoasset reference obligations.	See page 32
<u>Prepaid Expenses</u> De minimis holdings that are required to transact on a network, sometimes referred to as “gas” fees, should be risk weighted as prepaid expenses.	See page 33
Leverage Ratio	
Suggested Approach	Page Reference
The Associations generally agree with the consultation’s leverage ratio proposal, with the following two clarifications: First, SA-CCR methodologies should be used for determining the exposure amount of derivatives with a cryptoasset reference obligation for purposes of calculating a bank’s total leverage exposure. Second, the capital treatment of Group 2 exposures should not be dependent on the applicable accounting framework. Thus, Group 2 exposures should attract RWAs irrespective of the applicable accounting treatment and should not be deducted from CET1. In that case, it is sensible to	See page 34

include cryptoasset exposures in the leverage ratio exposure measure based on carrying value. If a cryptoasset, however, were to be deducted from CET1, the carrying value of that asset should not be included in the leverage ratio exposure measure.	
Large Exposures	
Suggested Approach	Page Reference
The Associations generally agree with the consultation’s large exposures framework proposal; however the Associations suggest that a large exposure limit of 15% of tier 1 capital should apply to a bank’s net exposure to all Group 2 cryptoassets.	See page 34
Liquidity Ratios	
Suggested Approach	Page Reference
The same treatment should be afforded to cryptoassets as with traditional assets in relation to qualifying as HQLA, and Group 1a and 1b cryptoassets should be eligible to qualify as HQLA. The prudential framework should permit Group 2a cryptoassets potentially to qualify as Level 2b HQLA if specific cryptoassets meet applicable LCR standards.	See page 35
Supervisory Review and Adjustments to Pillar 1 Requirements	
Suggested Approach	Page Reference
<p><u>Responsibilities of Banks</u> Banks have a track record of bringing expertise and strong risk management practices to nascent technologies, and they should extend the same expertise and safety to cryptoasset-related products and services offerings. Banks should maintain robust risk management procedures to understand and monitor all material risks associated with Group 1 cryptoassets and the networks upon which they operate, consistent with existing supervisory expectations for third party risk management. Banks should be responsible for determining whether a cryptoasset qualifies as a Group 1 or Group 2a/2b cryptoasset, subject to satisfying specified, clear classification criteria.</p>	<p>See page 10</p> <p>See page 12</p> <p>See page 14</p>

<p><u>Operational Risk</u> As mentioned above, a singular operational risk add-on charge only for cryptoassets, as contemplated by the consultation, is inconsistent and unnecessary.</p>	See page 14
Disclosure Requirements	
Suggested Approach	Page Reference
<p>The Associations agree with the consultation's proposed approach and recommend that, before Pillar 3 disclosure requirements are finalized, the Basel Committee consult on the particulars of the disclosure templates that would be applicable to Group 1b, Group 2a and Group 2b disclosure requirements.</p>	See page 35

Appendix 2

Mapping of Responses to Consultation Questions

Consultation Question	Response Section	Response Page
Q1. What are your views on the Committee's general principles?	Introduction, Section II	Page 3, 8
Q2. What are your views on the Committee's approach to classify cryptoassets through a set of classification conditions? Do you think these conditions and the resulting categories of cryptoassets (Group 1a, 1b and 2) are appropriate? Which existing cryptoassets would likely meet the Group 1 classification conditions?	Section III, IV, V.C	Page 11, 12, 24
Q3. What are your views on the classification conditions? Are there any elements of these conditions that should be added, clarified or removed in order to: <ul style="list-style-type: none"> - ensure full transferability, settlement finality, and/or redeemability; - limit regulatory arbitrage, cliff effects and market fragmentation; and - take account of new and emerging cryptoassets? 	Section III, IV, V.C	Page 11, 12, 24
Q4. For the first classification condition, is there an alternative methodology to assess the effectiveness of the stabilisation mechanism of Group 1b cryptoassets? Would this proposed methodology be consistent with ensuring the effectiveness of the stabilisation mechanism while also being practical?	Section IV.D.1	Page 15
Q5. For the third classification condition, (i) would risk governance and risk control practices for Group 1 and Group 2 cryptoassets differ; and (ii) are there alternatives to the required risk governance and risk control practices that would ensure that material risks of the network are sufficiently mitigated and managed?	Section IV.A.1	Page 12
Q6. For the fourth classification condition, (i) to what extent would the regulation and supervision of entities that execute redemptions, transfers, or settlement finality of the cryptoasset reduce risk in cryptoasset exposures held by banks; (ii) which entities should/ should not be in scope of regulation or supervision? For instance, are there entities involved in the transfer and settlement systems of cryptoassets (such as nodes, operators and/or validators) that should be excluded from the condition of required regulation and supervision?	Section IV.A.2	Page 13
Q7. Do you consider the responsibilities of banks and supervisors to be clear and appropriate? Are there any other responsibilities for banks or supervisors that the Committee should consider?	Section IV.A.3	Page 14

Q8. Are there ways in which the increased operational risk relating to cryptoassets (relative to traditional assets) can be measured? How should a pillar 1 add-on be designed to capture additional operational risks arising from exposures to cryptoassets?	Section IV.B	Page 14
Q9. Are there further aspects of the credit risk and market risk requirements that could benefit from additional guidance on how they should apply to Group 1a cryptoassets?	Section IV.C	Page 15
Q10. Do you have any views on the Committee's current thinking on the capital requirements for Group 1b cryptoassets?	Section IV.D.3	Page 17
Q11. What further aspects of the credit risk and market risk requirements could benefit from additional guidance on how they should apply to Group 1b cryptoassets?	Section IV.D.2, IV.D.3	Page 17
Q12. Do you think the proposed capital treatment of Group 2 cryptoassets, including the application of a 1250% risk weight instead of deducting the asset from capital (for the reasons explained above), appropriately reflects the unique risks inherent in these assets?	Section V.A, V.B, V.C, V.D.5, V.D.6, V.F	Page 21, 22, 24, 30, 32, 33
Q13. Are there alternative approaches that the Committee should consider that are simple, conservative and easy to implement? For exposures in the trading book, would it be appropriate to permit recognition of hedging via the application of a modified version of the standardised approach to market risk?	Section V	Page 21
Q14. Do you have any views on the Committee's current thinking regarding the leverage ratio, large exposures framework and liquidity ratio requirements? Are there further aspects of these requirements that could benefit from additional guidance?	Section VI	Page 34
Q15. Do you have any views on the responsibilities of banks? Are there any other responsibilities or aspects that should be covered by banks for the purposes of the supervisory review?	Section II, IV.A	Page 8,12
Q16. Do you have any views on the responsibilities of supervisors? Are there any other responses that could be considered by supervisors when conducting supervisory review?	Section IV.A.2, IV.A.3	Page 13, 14
Q17. Do you have any views on the adjustments to minimum Pillar 1 capital requirements to capture additional credit and/or market risk? Are there any other potential modifications that supervisors may need to consider?	Section IV, V	Page 12, 21
Q18. Do you have any views on the potential design of disclosure requirements?	Section VII	Page 35

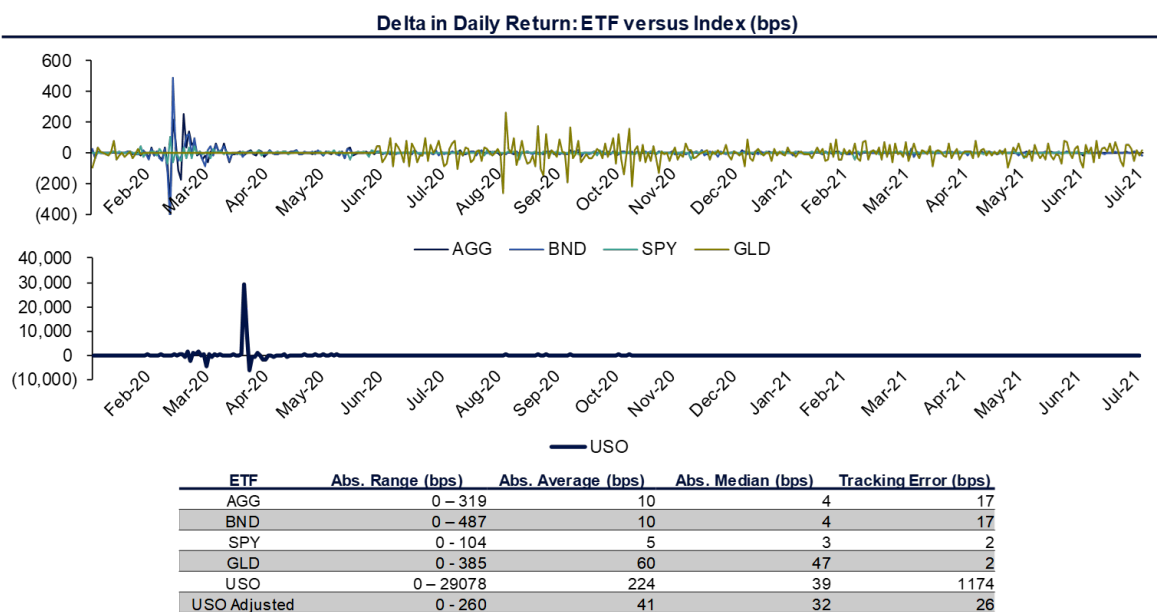
Appendix 3

Analysis Demonstrating the 10 bps Peg Criterion is Overly Restrictive

Comparison of Tracking Error in ETFs / Indices

As illustrated below, two major ETFs used as financial collateral have exhibited de-pegging from their corresponding indices in the past, especially during the onset of the COVID-19 pandemic. The tracking error between two major fixed income ETFs, AGG and BND, are as high as 17 bps.

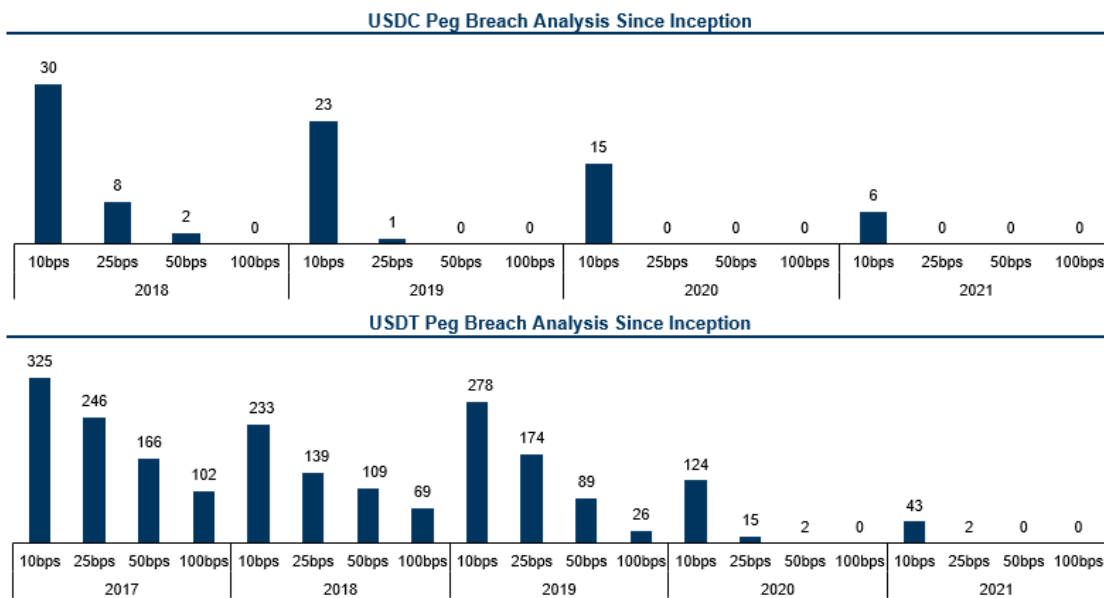
Delta in Daily Return: ETF versus Index (bps)²⁷



²⁷ The graph shows the difference in daily return between ETF and respective indices. AGG vs. Bloomberg Barclays U.S. Agg. Total Return Value, BND vs. Bloomberg Barclays U.S. Aggregate Float Adjusted, SPY vs. SPX, GLD vs. GLD LDN Fixing PM Spot and USO vs. WTI. The tracking error column in the table shows the standard deviation of difference in daily return. The USO Adjusted data in the table does not include volatility in the period from February 26, 2020 to June 26, 2020.

Breaches by Peg Threshold

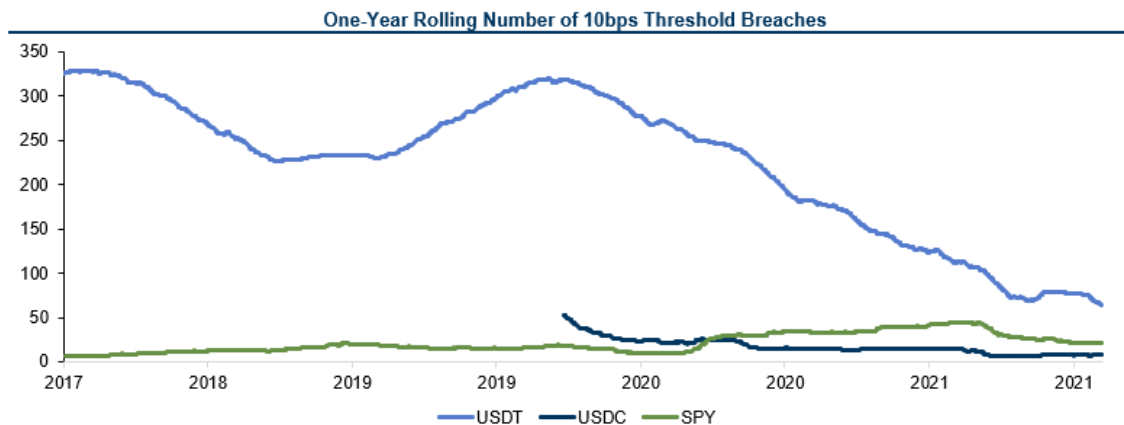
The below graphs display historical breaches between two data sets for USDC and Tether.²⁸



Rolling Number of Breaches

An analysis of stablecoins and SPY shows that the consultation’s 10 bps threshold is conservatively calibrated, even when allowing for three breaches over a one-year period. The below chart uses the delta between stablecoins and their intended price (\$1) and delta between daily returns of SPY and daily returns of SPX to measure breaches.

One-Year Rolling Number of 10 bps Threshold Breaches



²⁸ Data was sourced from CoinMetrics, which gathers data from “trusted” exchanges only.

Appendix 4

Group 2 Cryptoasset Volatility and Correlation

We performed data analysis on nine cryptoassets’ 10-day price returns between October 1, 2017 and June 30, 2021 using volatility, two-sided 99% value at risk (“**VaR**”), and two-sided 97.5% expected shortfall (“**ES**”). Although the determination of Group 2a and Group 2b cryptoassets will be made by each bank, for the sake of the analysis, the cryptoassets have been broken into two representative groups, with the sample for Group 2a consisting of BTC cash, BTC, BTC futures and ETH, and the sample of Group 2b consisting of Litecoin, BAT, Neo, XRP and Dogecoin. We believe that focusing on the most established Group 2 cryptoassets is the best sample to estimate forward-looking volatilities and correlation for Group 2a, as any Group 2 cryptoassets that maintain a liquid two-way market would be expected to behave more in line with the current established and longer-standing Group 2 cryptoassets. We submit that, while this analysis provides insights into the most appropriate current estimates of initial FRTB SA risk weights, SA-CCR supervisory factors and correlations, this analysis should be updated and these parameters potentially recalibrated over time, given this market is still evolving.

To determine an appropriate risk weight relative to existing risk factors in the FRTB SBM framework, as a starting point for the data analysis, 10-day price return and volatility data were collected and two-sided 99% VaR and 97.5% ES were calculated for the sample of potential Group 2a and Group 2b cryptoassets.

Historical Group 2 cryptoasset risk measures

Time Horizon	Group 2a		Group 2b	
	99% VaR	97.5% ES	99% VaR	97.5% ES
10 days	65%	68%	109%	123%

Although the precise method of calibrating the existing FRTB SBM risk weights is not known, the “Explanatory note on the revised minimum capital requirements for market risk”²⁹ provides an overview of the intended approach: “The standardised ‘bucket’ risk weights within each risk class under the standardised approach have been calibrated to stressed market conditions using an ES methodology, while the concept of varying liquidity horizons which has been incorporated into the revised internal models approach is also mirrored in the calibration of the standardised risk weights.” Therefore, the 10-day risk measures above can be converted to potential FRTB SBM risk weights for Group 2a through scaling using the square root of time approach.

²⁹ See *Explanatory note on the revised minimum capital requirements for market risk*, Basel Committee on Banking Supervision (Jan. 2016).

The below table shows risk weights obtained with this approach for potential liquidity horizons:

Group 2a cryptoasset risk weights under different liquidity horizons

Liquidity Horizon	Group 2a	
	99% VaR	97.5% ES
10 days	65%	68%
20 days	92%	95%

Given the highly liquid nature of Group 2a cryptoassets and favorable comparison of average daily volume to many large cap equity stocks, a liquidity horizon as low as 10 days would be justifiable (see data on average daily volumes in Section V.D.5 above on Collateral Eligibility). However, for conservativeness, we initially suggest using a liquidity horizon of 20 days, resulting in a risk weight of approximately 90-95%.

In addition to price volatility and risk weights analysis, we also used the same price return data to analyze correlation among different exposures to the same Group 2 cryptoasset and among different Group 2 cryptoassets. The analysis on correlations for the same Group 2a cryptoasset was limited to BTC and BTC futures, but shows sufficiently high correlation between 10-day price returns (greater than 99% over the observation window) to justify full netting for exposures to the same cryptoasset as proposed. Different Group 2a cryptoassets (excluding BTC futures from the sample) also show a relatively high degree of correlation to justify potential hedging benefits across cryptoassets, with estimated correlation factors as high as 75-80%. However, as discussed above, we initially suggest setting a lower interim correlation factor between different Group 2a cryptoassets for impact estimates and analysis for both FRTB SBM and SA-CCR, with the understanding that the data should be reanalyzed over time. Note that the data also shows a high measure of correlations among potential Group 2b cryptoassets.

Correlation of 10-day price returns among different Group 2 cryptoassets

		Group 2a			Group 2b				
		BTC-USD	BCH-USD	ETH-USD	LTC-USD	BAT-USD	NEO-USD	XRP-USD	DOGE-USD
Group 2a	BTC-USD		80%	76%					
	BCH-USD	80%		82%					
	ETH-USD	76%	82%						
Group 2b	LTC-USD	83%	85%	83%		60%	73%	76%	74%
	BAT-USD	54%	60%	67%	60%		69%	69%	60%
	NEO-USD	66%	74%	81%	73%	69%		75%	69%
	XRP-USD	67%	78%	81%	76%	69%	75%		73%
	DOGE-USD	71%	73%	74%	74%	60%	69%	73%	


Having established the above approach for risk weights and correlations for FRTB SBM, these can be adjusted for use consistently in SA-CCR. Based on the approach described in Working Paper No 26 on Foundations of the standardised approach for measuring counterparty credit risk exposures³⁰ and the approach for calibrating FRTB SBM risk weights, FRTB SBM risk weights can be converted to SA-CCR supervisory factors using the following formula:

$$SF_{SA-CCR} = \frac{RW_{FRTB} \sqrt{\frac{250}{LH_{FRTB}}}}{\frac{3}{2} * 2.33\sqrt{2\pi}}$$

Although we are not proposing the use of FRTB SBM for Group 2b, the conversion formula above can be applied to the 10-day risk measures as the FRTB SBM risk weights with 10 days as the liquidity horizon (for conversion purposes only). Similarly, although Group 2a FRTB SBM risk weights are proposed to use a 20-day liquidity horizon, as these are derived from 10-day risk measures through the same time-scaling approach as the conversion formula above, using the 10-day risk measures for Group 2a for SA-CCR supervisory factor estimation gives the same result as using the proposed FRTB SBM risk weights and a 20-day liquidity horizon. Based on this analysis, we suggest SA-CCR supervisory factors of 37-39% for Group 2a cryptoassets and 62-70% for Group 2b cryptoassets.

³⁰ See Working Paper No 26, Foundations of the standardised approach for measuring counterparty credit risk exposures, Basel Committee on Banking Supervision (Aug. 2014, rev. Jun. 2017).

10-day risk measures			
Group 2a		Group 2b	
99% VaR	97.5% ES	99% VaR	97.5% ES
65	68	109	123



SA-CCR SF			
Group 2a		Group 2b	
99% VaR	97.5% ES	99% VaR	97.5% ES
37.10	38.81	62.21	70.20

Appendix 5 Sample Group 2 Calculations

Below is a comparison of the proposed treatment in the consultation and calculations under our proposal for four examples including Group 2 cryptoasset exposures.

Example 1: Market Risk RWA on Group 2a Cryptoassets

A client goes long on a one-year, BTC forward and long on a one-year ETH forward, resulting in short delta exposure for the bank. The bank hedges this exposure with a long one-year BTC total return swap (“TRS”) matching the total short delta. Assume that delta equals exposure, risk weights are 90% and the correlation factor is 75%³¹.

Trade	Maturity	Direction	Asset	Exposure
1	1 year	Short	BTC	-\$35,000
2	1 year	Short	ETH	-\$65,000
3	1 year	Long	BTC	\$100,000

	Consultation	FRTB SA
Individual cryptoasset	<ul style="list-style-type: none"> ■ RWA is calculated for each cryptoasset as $1250\% \times \max[\text{abs}(\text{long}), \text{abs}(\text{short})]$ ■ $RWA_{\text{BTC}} = 1250\% \times \max(\\$35,000, \\$100,000) = \\$1,250,000$ ■ $RWA_{\text{ETH}} = 1250\% \times \max(\\$65,000) = \\$812,500$ 	<ul style="list-style-type: none"> ■ WS_K is calculated as $90\% \times S_K$ for each cryptoasset k ■ $WS_{\text{BTC}} = 90\% \times (\\$100,000 - \\$35,000) = \\$58,500$ ■ $WS_{\text{ETH}} = 90\% \times -\\$65,000 = -\\$58,500$
Across cryptoassets	<ul style="list-style-type: none"> ■ RWA is calculated across cryptoassets as the sum of RWA for each individual cryptoasset ■ $RWA = \\$1,250,000 + 812,500 = \\$2,062,500$ 	<ul style="list-style-type: none"> ■ The capital across cryptoassets is calculated using the FRTB prescribed aggregation formula with a correlation parameter, assumed to be 75% for this example ■ $(\\$58,500^2 + -\\$58,500^2 + 2 \times 0.75 \times \\$58,500 \times -\\$58,500)^{1/2} = \\$41,365$
RWA	<ul style="list-style-type: none"> ■ $RWA = \\$2,062,500$ 	<ul style="list-style-type: none"> ■ $12.5 \times \\$41,365 = \\$517,072$

³¹ As discussed in Section V.D.1, empirical data supports a correlation in the range of 75-80%. We chose a correlation factor of 75% for example purposes; we believe a different interim calibration may be appropriate while further data analysis is performed.

Example 2: Counterparty Credit Risk on Derivative Exposure on Long/Short Group 2a Cryptoassets

A client goes long on a one-month, BTC forward and offsets the trade by shorting a BTC forward and ETH forward to reduce exposure under the same QMNA. Assume no margin or collateral for simplicity, a supervisory factor of 38% and a supervisory correlation factor of 87%³².

Trade	Maturity	Direction	Asset	Notional	NPV
1	1 month	Long	BTC	\$100,000	\$25,000
2	1 month	Short	BTC	\$35,000	-\$8,750
3	1 month	Short	ETH	\$65,000	-\$16,250

	Consultation	SA-CCR
Replacement Cost (“RC”)	<ul style="list-style-type: none"> ■ Provided cryptoasset is identical, net present value (“NPV”) can be fully offset calculating RC ■ Different cryptoassets cannot be netted within the same netting set ■ RC = \$16,250 	<ul style="list-style-type: none"> ■ Full offset of NPV within same asset bucket ■ RC = \$0
PFE	<ul style="list-style-type: none"> ■ PFE is 50% of gross notional ■ Gross notional = \$200,000; 50% X \$200,000 = \$100,000 ■ PFE = \$100,000 	<ul style="list-style-type: none"> ■ Apply 0.29 maturity factor to reflect one month maturity and 38% supervisory factor to cryptoasset ($M = (21/250)^{1/2} \approx 0.29$) ■ $PFE_{BTC} = (\\$100,000 - \\$35,000) \times 0.29 \times 38\% = \\$7,163$ and $PFE_{ETH} = -\\$65,000 \times 0.29 \times 38\% = -\\$7,163$ ■ When calculating the PFE add-on, there is partial offset for long / shorts in different assets ■ $PFE = [(87\% \times (\\$7,163 + -\\$7,163))^2 + (1 - (87\%)^2) \times (\\$7,163^2 + -\\$7,163^2)]^{1/2} = \\$4,995$

³² A SA-CCR correlation factor of 87% is used for example purposes for consistency with the correlation of 75% used in the FRTB SA calculation in example 1. The SA-CCR supervisory correlation factor can be approximated to the square root of the FRTB correlation factor, given the different aggregation formulae between FRTB and SA-CCR.

Exposure at Default (“EAD”)	■ $RC + PFE = \$116,250$	■ $1.4 \times (RC + PFE) = \$6,992$
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Example 3: Derivative Exposure on Margined and Unmargined Long Single Group 2a Cryptoasset

A client goes long on a one-year, BTC forward. Collateral received is \$25,000. Under SA-CCR, there is differentiation between the trade depending on whether it is margined or unmargined, while the consultation does not differentiate. Assume a supervisory factor of 38%.

	Consultation	SA-CCR Margined	SA-CCR Unmargined
RC	■ $RC = \max[(\$25,000) - (\$25,000), 0] = \$0$	■ $RC = \max[(\$25,000) - (\$25,000), 0] = \$0$	■ $RC = \max[(\$25,000) - (\$25,000), 0] = \$0$
PFE	<ul style="list-style-type: none"> ■ PFE is 50% of gross notional ■ Gross notional = \$100,000; 50% X \$100,000 = \$50,000 ■ PFE = \$50,000 	<ul style="list-style-type: none"> ■ Apply 0.3 maturity factor assuming daily margining and 38% supervisory factor to notional; \$100,000 X 0.3 X 38% ■ PFE = \$11,400 	<ul style="list-style-type: none"> ■ Apply 38% supervisory factor to notional; \$100,000 X 38% ■ PFE = \$38,000
EAD	■ $RC + PFE = \$50,000$	■ $1.4 \times (RC + PFE) = \$15,960$	■ $1.4 \times (RC + PFE) = \$53,200$

Example 4: RWA on Banking Book Loan in Cryptoasset With and Without Hedge

A BBB-rated corporate client requests a loan in a Group 2 cryptoasset. To meet this demand, the bank obtains the Group 2 cryptoasset and loans it to the client, resulting in a credit risk exposure to the corporate and exposure to the Group 2 cryptoasset through a series of receivables for the loan repayment. The consultation and our proposals for Group 2a and Group 2b cryptoassets would result in similar RWA if the bank does not hedge the Group 2 cryptoasset exposure. However, our proposal would result in much

lower RWA for Group 2a cryptoassets if the bank hedges this exposure by entering into a derivative referencing the cryptoasset with another bank.

Assume a 75% risk weight for the credit risk to the loan obligor and a 20% risk weight for the derivative exposure to the bank consistent with the Basel III finalization guidance. Assume notional and delta are equal, the derivative is fully collateralized, meaning RC is zero, and the risk weights and supervisory factors for Group 2a and Group 2b are as described in our proposal.

Trade	Maturity	Direction	Instrument	Notional/Delta
1	1 year	Long	Loan	\$100,000
2	1 year	Short	Hedge	-\$100,000

Without hedge:

	Consultation	Group 2a	Group 2b
Obligor Credit Risk	<ul style="list-style-type: none"> ■ $RWA_{CR} = 75\% \times \\$100,000 = \\$75,000$ 	<ul style="list-style-type: none"> ■ $RWA_{CR} = 75\% \times \\$100,000 = \\$75,000$ 	<ul style="list-style-type: none"> ■ $RWA_{CR} = 75\% \times \\$100,000 = \\$75,000$
Market Risk	<ul style="list-style-type: none"> ■ $RWA_{MR} = 1250\% \times \\$100,000 = \\$1,250,000$ 	<ul style="list-style-type: none"> ■ Apply a 90% risk weight to the delta exposure to Group 2a cryptoasset of \$100,000 ■ $k_b = \\$90,000$ ■ $RWA_{MR} = 12.5 \times \\$90,000 = \\$1,125,000$ 	<ul style="list-style-type: none"> ■ $RWA_{MR} = 1250\% \times \\$100,000 = \\$1,250,000$
Total RWA	<ul style="list-style-type: none"> ■ $RWA_{CR} + RWA_{MR} = \\$1,325,000$ 	<ul style="list-style-type: none"> ■ $RWA_{CR} + RWA_{MR} = \\$75,000 + \\$1,125,000 = 1,200,000$ 	<ul style="list-style-type: none"> ■ $RWA_{CR} + RWA_{MR} = \\$1,325,000$

With hedge:

	Consultation	Group 2a ³³	Group 2b
Obligor Credit Risk	<ul style="list-style-type: none"> ■ $RWA_{CR} = 75\% \times \\$100,000 = \\$75,000$ 	<ul style="list-style-type: none"> ■ $RWA_{CR} = 75\% \times \\$100,000 = \\$75,000$ 	<ul style="list-style-type: none"> ■ $RWA_{CR} = 75\% \times \\$100,000 = \\$75,000$
Market Risk	<ul style="list-style-type: none"> ■ The consultation does not give credit for the hedge of the cryptoasset exposure ■ $RWA_{MR} = 1250\% \times \max(\text{abs}(\\$100,000), \text{abs}(-\\$100,000)) = \\$1,250,000$ 	<ul style="list-style-type: none"> ■ The delta exposure of the loan is netting with the delta exposure of the hedge for Group 2a cryptoassets, resulting in a net delta exposure of \$0 ■ $RWA_{MR} = \\$0$ 	<ul style="list-style-type: none"> ■ We are proposing not to give credit for the hedge for Group 2b cryptoasset exposures ■ $RWA_{MR} = 1250\% \times \max(\text{abs}(\\$100,000), \text{abs}(-\\$100,000)) = \\$1,250,000$
Counterparty Credit Risk	<ul style="list-style-type: none"> ■ The addition of the hedge only increases the RWA through the additional CCR RWA ■ $RWA_{CCR} = \\$0 + 20\% \times 50\% \times \text{abs}(-\\$100,000) = \\$10,000$ 	<ul style="list-style-type: none"> ■ CCR RWA is calculated leveraging SA-CCR calculation, taking advantage of the 0.3 multiplier for daily margining ■ $RWA_{CCR} = 20\% \times 1.4 \times (\\$0 + 0.3 \times 38\% \times \text{abs}(-100,000)) = \\$3,192$ 	<ul style="list-style-type: none"> ■ The hedge still increases the total RWA, but by a lesser amount since SA-CCR is leveraged and the exposure has daily margining ■ $RWA_{CCR} = 20\% \times 1.4 \times (\\$0 + 0.3 \times 62\% \times \text{abs}(-100,000)) = \\$5,208$
Total RWA	<ul style="list-style-type: none"> ■ $RWA_{CR} + RWA_{MR} + RWA_{CCR} = \\$1,335,000$ 	<ul style="list-style-type: none"> ■ $RWA_{CR} + RWA_{MR} + RWA_{CCR} = \\$78,192$ 	<ul style="list-style-type: none"> ■ $RWA_{CR} + RWA_{MR} + RWA_{CCR} = \\$1,330,208$

³³ Note that CVA would also apply to the derivative hedge, but has not been included in this example calculation.

Appendix 6

Overview of the Associations

The **Global Financial Markets Association** (“[GFMA](#)”) represents the common interests of the world’s leading financial and capital market participants, to provide a collective voice on matters that support global capital markets. We advocate on policies to address risks that have no borders, regional market developments that impact global capital markets and policies that promote efficient cross-border capital flows, benefiting broader global economic growth. [GFMA](#) brings together three of the world’s leading financial trade associations to address the increasingly important global regulatory agenda and to promote coordinated advocacy efforts. The Association for Financial Markets in Europe (“[AFME](#)”) in London, Brussels and Frankfurt, the Asia Securities Industry & Financial Markets Association (“[ASIFMA](#)”) in Hong Kong and the Securities Industry and Financial Markets Association (“[SIFMA](#)”) in New York and Washington are, respectively, the European, Asian and North American members of GFMA.

The **Financial Services Forum** (“[FSF](#)”) is an economic policy and advocacy organization whose members are the chief executive officers of the eight largest and most diversified financial institutions headquartered in the United States. Forum member institutions are a leading source of lending and investment in the United States and serve millions of consumers, businesses, investors and communities throughout the country. The Forum promotes policies that support savings and investment, deep and liquid capital markets, a competitive global marketplace and a sound financial system.

The **Futures Industry Association** (“[FIA](#)”) is the leading global trade organization for the futures, options and centrally cleared derivatives markets, with offices in London, Brussels, Singapore and Washington, DC. FIA’s mission is to support open, transparent and competitive markets; protect and enhance the integrity of the financial system; and promote high standards of professional conduct. FIA’s membership includes clearing firms, exchanges, clearinghouses, trading firms and commodities specialists from more than 48 countries, as well as technology vendors, lawyers and other professionals serving the industry.

The **Institute of International Finance** (“[IIF](#)”) is the global association of the financial industry, with more than 400 members from more than 70 countries. Its mission is to support the financial industry in the prudent management of risks; to develop sound industry practices; and to advocate for regulatory, financial and economic policies that are in the broad interests of its members and foster global financial stability and sustainable economic growth. IIF members include commercial and investment banks, asset managers, insurance companies, sovereign wealth funds, hedge funds, central banks and development banks.

Since 1985, the **International Swaps and Derivatives Association** (“[ISDA](#)”) has worked to make the global derivatives markets safer and more efficient. Today, ISDA has over 960 member institutions from 78 countries. These members comprise a broad range of derivatives market participants, including corporations, investment managers,

government and supranational entities, insurance companies, energy and commodities firms and international and regional banks. In addition to market participants, members also include key components of the derivatives market infrastructure, such as exchanges, intermediaries, clearing houses and repositories, as well as law firms, accounting firms and other service providers. Information about ISDA and its activities is available on the Association's website: www.isda.org. Follow us on [Twitter](#), [LinkedIn](#), [Facebook](#) and [YouTube](#).

The **Chamber of Digital Commerce** (the "Chamber") is the world's largest global blockchain trade association, representing over 200 companies working in the digital asset and blockchain industry. The Chamber's mission is to promote the acceptance and use of digital assets and blockchain technology, and it is supported by a diverse membership that represents the blockchain industry globally. Through education, advocacy and close coordination with policymakers, regulatory agencies and industry across various jurisdictions, the Chamber's goal is to develop a pro-growth legal environment that fosters innovation, job creation and investment. The Chamber represents the world's leading innovators, operators and investors in the blockchain ecosystem, including leading edge start-ups, software companies, global IT consultancies, financial institutions, insurance companies, law firms and investment firms. Consequently, the Chamber and its members have a significant expertise and interest in blockchain technology and ensuring that the blockchain ecosystem continues to grow and thrive.

Index of Defined Terms

Defined Terms	Page No. for Definition
AAPL: Apple, Inc.	31
ADV: Average daily trading volume	31
AFME: Association for Financial Markets in Europe	60
AGG: iShares Core U.S. Aggregate Bond ETF	16
AML: Anti-money laundering	10
ASIFMA: Asia Securities Industry & Financial Markets Association	60
Associations: The Global Financial Markets Association, the Financial Services Forum, the Futures Industry Association, the Institute of International Finance, the International Swaps and Derivatives Association and the Chamber of Digital Commerce	1
BA-CVA: Basic Approach for Credit Valuation Adjustment	21
Basel Committee: Basel Committee on Banking Supervision	1
BND: Vanguard Total Bond Market ETF	16
BTC: Bitcoin	10
CBDCs: Central bank digital currencies	11
CCPs: Central Counterparties	13
CET1: Common equity tier 1	21
Chamber: Chamber of Digital Commerce	61
Consultation: Consultative document on the “Prudential treatment of cryptoasset exposures”	1
DLT: Distributed ledger technology	2
EAD: Exposure at Default	57

EIF: Equity Investment in Funds	12
ES: Expected shortfall	51
ETFs: Exchange-traded funds	10
ETH: Ether	22
FASB: Financial Accounting Standards Board	22
FIA: Futures Industry Association	60
FSF: Financial Services Forum	60
FX: Foreign exchange	7
FRTB IMA: Internal Models Approach	21
FRTB SA: Standardized Approach	21
GAAP: Generally accepted accounting principles	22
GFMA: Global Financial Markets Association	60
GLD: SPDR Gold Trust	16
GSIB: Global systemically important bank	35
HQLA: High-quality liquid assets	35
IFRS: International Financial Reporting Standards	22
IIF: Institute of International Finance	60
ISDA: International Swaps and Derivatives Association	60
KYC: Know-your-customer	10
LCR: Liquidity Coverage Ratio	35
NPV: Net present value	56
PFE: Potential future exposure	30
QCCP: Qualifying Central Counterparty	23
QMNA: Qualifying master netting agreement	29

RC: Replacement Cost	56
RWA: Risk weighted asset	16
SA-CCR: Standardized Approach for Counterparty Credit Risk	21
SA-CVA: Standardized Approach for Credit Valuation Adjustment	21
SBM: Sensitivities-based method	26
SIFMA: Securities Industry and Financial Markets Association	60
SMA: Standardized approach for operational risk	15
SPV: Special purpose vehicle	19
SPY: SPDR S&P 500 ETF	16
TRS: Total return swap	55
USDC: USD Coin	16
USDT: Tether	16
USO: United States Oil Fund	16
VaR: Value at risk	51