DTCC

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Basel Committee on Banking Supervision
Bank for International Settlements
CH-4002 Basel
Switzerland

Re: Sound Practices: Implications of FinTech Developments for Banks and Bank Supervisors

Dear Members of the Basel Committee on Banking Supervision:

The Depository Trust & Clearing Corporation ("DTCC")[1] appreciates the opportunity to provide comments to the Basel Committee on Banking Supervision ("BCBS" or the "Committee") regarding the recently published consultative document on "Sound Practices: Implications of FinTech Developments for Banks and Bank Supervisors" (the "Consultative Report"). We commend BCBS for its continued focus on the implications of financial technology ("FinTech") for the financial sector and appreciate efforts by policymakers globally to seek a deeper understanding of technology-driven innovation.

FinTech developments have the potential to materially enhance, transform and/or disrupt business models, applications, regulatory oversight, processes and products in many areas of the financial services industry. For market infrastructures, DTCC believes that continued collaboration with policymakers to ensure regulatory requirements and compliance obligations remain a top priority is critical to realizing the benefits of innovation.

DTCC has a 40-year history of leveraging technology to drive innovation and reduce risks and costs for our clients. We continue to build on that legacy by advancing the use of FinTech to enhance post-trade processing while ensuring our applications are consistent with key policy objectives of risk mitigation, and market safety, certainty, reliability and efficiency. DTCC is actively exploring how transformative technologies like distributed ledgers, cloud computing, robotics, machine learning and artificial intelligence can enhance the post-trade

[1] DTCC is an industry owned and governed financial market utility, providing financial transaction and data processing services for the global financial industry. DTCC provides a wide range of post-trade services across the financial services industry, including central clearance and settlement and asset servicing for the majority of cash equity and fixed income trading in the U.S., services to support the wealth management and insurance industries, institutional matching and post-trade management services, and trade repositories that provide global compliance reporting for swaps transactions across all asset classes. DTCC also provides the governance, operations, technology applications and infrastructure to support these and other related services.

process by further mitigating risk and reducing costs. At this time, we believe the best short-term opportunities are in certain defined areas where automation and standardization are limited, and where the technology provides a clear, measurable benefit (ex. speed, efficiency, effectiveness) over existing processes.

DTCC offers the following general comments and technology-specific recommendations for consideration by the BCBS.

**Impact on Current Regulatory Frameworks**

DTCC does not expect that the regulatory framework for capital and derivatives markets globally, which has been created over the past 70 years, will need to be replaced, or even fundamentally altered, due to FinTech advancements. Indeed, most jurisdictions with well-developed capital and derivatives markets have sought to implement policies that are technology neutral. Rather, we anticipate that the current framework and corresponding regulatory approach could evolve as solutions such as those offered by distributed ledger technologies ("DLT") are adopted. Rules that allow for technological advancement supporting key policy objectives including risk mitigation, investor protection, resiliency, and market and regulatory transparency, will be an important feature of this evolution. Ongoing industry engagement and dialogue with policymakers and supervisors will be paramount to these efforts and to the successful implementation of FinTech solutions. Additionally, continued engagement by regulators with industry innovators will assist in providing transparency and legal certainty to market participants seeking to use FinTech in their businesses.

As outlined in the Consultative Report, banking standards should be sufficiently flexible to accommodate advancements in innovation in a manner that maintains the necessary high standards for safety, soundness and consumer protection objectives.[2] DTCC encourages continued regulatory engagement and flexibility regarding how FinTech can fit within the existing set of rules and regulatory goals. We believe regulations should remain technology neutral and avoid mandating the use of specific technology. If the use of certain technologies is not expressly prohibited by statute or regulation,[3] supervisors should be encouraged to remain open to discussion with regulated firms about how compliance obligations can be met, and public policy goals achieved, through the use of a particular technology.

In addition, as recommended by the Committee, DTCC supports efforts by regulators globally to consider exploring innovative technologies to enhance their own mission activities where appropriate.[4]

**Cloud Technology and Utilizing Cloud Vendors**

DTCC encourages regulators globally to continue advancing the responsible use of cloud technology and third party cloud vendors where appropriate. We believe that cloud computing has reached the point where it can challenge long-held justifications for individually owned and

[2] *See* BCBS Consultative Report, Recommendation 1.
[3] DTCC is not aware that any such prohibition currently exists.
[4] *See* BCBS Consultative Report, Recommendation 8.

managed data centers. In fact, the capabilities, resiliency and security of services provided by cloud vendors now exceed those of many on-premises data centers. Well-managed cloud vendors can improve security and lower the costs of infrastructure in a way that enables greater accessibility for software solution providers in the financial services space. However, firms must address public policy and compliance considerations when deciding whether to move processing functions to an outsourced or public cloud environment.

Financial regulators globally have begun to recognize the appropriateness of leveraging the cloud as long as compliance obligations are maintained, including those related to data protection, data integrity, resiliency and auditing. A decade-long maturing of cloud services, along with the active engagement of regulatory and security experts, have produced an abundance of guidance for cloud implementations. These include best practices around due diligence, risk assessments, compliance and continuous monitoring.[5]

The following highlights key policy and regulatory considerations market infrastructures should closely review when contemplating use of cloud computing services. In order to meet regulatory requirements, regulated market infrastructures should:[6]

- Ensure their firm's security policy for outsourcing and cloud services provides adequate safeguards to protect the confidentiality of data.
- Take steps to ensure data integrity in order to prevent data from being altered or destroyed.
- Ensure that data is available when needed and that cloud vendors have adequate plans to respond to disasters, provide continuous service, and pledge to make available essential communications links.
- Require that cloud vendors have familiarity in complying with the demands of regulated entities and can contractually meet regulatory requirements, particularly related to reporting and safeguarding of sensitive information.

Financial regulators globally have issued general guidance for addressing cyber security risk, including matters specific to public cloud computing.[7] The various guidance documents represent best practices, and the guidelines aimed at cloud computing demonstrate a precedent for a financial institution's practice of outsourcing relevant operations to a public cloud provider.

Authorities have a critical role to play in driving collaboration and permitting the responsible outsourcing of business functions – such as cloud computing – to boost efficiency, so long as public policy goals are met. Consistent with the Consultative Report, DTCC believes overall responsibility for cloud services and the data held in the cloud remain with the firm that is directly supervised.[8] Therefore, firms must assess whether they can continue meeting their compliance and regulatory oversight responsibilities when considering whether to move regulated functions to an outsourced or public cloud environment.

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[5] *See* DTCC white paper, "Moving Financial Market Infrastructure to the Cloud" (15 May 2017), *available at* http://www.dtcc.com/news/2017/may/15/new-dtcc-white-paper-concludes-that-cloud-computing-has-moved-past-a-tipping-point-of-maturity
[6] Ibid.
[7] Ibid.
[8] *See* BCBS Consultative Report, Recommendation 4.

DTCC, for example, is further modernizing its core computing and database platforms through use of cloud vendors. Due to the technology's maturation as well as its significant security and operational benefits, DTCC has begun to leverage cloud computing, and more specifically the public cloud. Through collaboration and coordination with our regulators and supervisors, we intend to strategically expand DTCC's use of cloud technology across a range of services and applications over the next three to five years.[9]

**Distributed Ledger Technology**

DTCC has been closely examining the potential benefits offered by DLT to modernize, streamline and simplify the siloed design of the financial-industry infrastructure to address certain limitations of the current post-trade process.

For example, DTCC is currently re-platforming DTCC's Trade Information Warehouse ("TIW"), to build a distributed ledger solution for derivatives post-trade processing based on existing capabilities and interfaces with technology providers and market participants. This solution is designed to enable DTCC, its clients and relevant authorities to mitigate risks and further streamline, automate and reduce the cost of derivatives processing by eliminating the need for disjointed, redundant processing and its associated reconciliation costs. Our vision is to establish a permissioned distributed ledger network for derivatives, governed by DTCC, with peer nodes at participating firms.

DTCC is encouraged by the potential of DLT to provide regulators globally with enhanced oversight of the markets and a deeper understanding of financial risks, and we concur that international cooperation among supervisors is essential.[10] While DLT is beginning to advance beyond the initial hype, the technology needs to be proven before it can be widely adopted and ongoing industry dialogue will be key to successful implementation. Committee members and authorities globally can play a key role as coordination within and between jurisdictions is critical to effectively implementing DLT innovation. Accordingly, authorities are best positioned to increase awareness of the need for harmonized technology standards and protocols, in addition to interoperability and independent governance. Immediate yet critical steps include:

1. *Underscore the importance of the establishment of governance frameworks for FinTech initiatives.*

The development of appropriate, independent governance is necessary to address key challenges associated with implementation and operation of DLT solutions. DTCC can play a leading role in providing this leadership, developing and enforcing the standards and protocols necessary to deliver robust solutions that address industry needs, foster innovation and protect market stability. Ongoing engagement and dialogue with policymakers and supervisors will be

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[9] *See* DTCC white paper, "Moving Financial Market Infrastructure to the Cloud" (15 May 2017), *available at* http://www.dtcc.com/news/2017/may/15/new-dtcc-white-paper-concludes-that-cloud-computing-has-moved-past-a-tipping-point-of-maturity

[10] *See* BCBS Consultative Report, Recommendation 6.

an important part of the process as governance frameworks in support of certain FinTech initiatives are established.

2. *Encourage collaboration regarding technology standards and protocols and the need for interoperability.*

DTCC supports collaboration in pursuit of the long-term goal of establishing technology standards and protocols in addition to achieving compatibility amongst ledgers, systems and platforms. The industry is exploring and advancing use cases with a variety of technology providers, DLT platforms, and software solutions. To realize the potential of DLT, we must determine how multiple distributed ledgers will integrate with other ledgers and legacy infrastructure. Industry-wide coordination is key to preventing the creation of technology silos, which would lead to many of the same reconciliation and interoperability issues the industry faces today.

DTCC believes it is imperative that market participants, industry organizations, regulators, consortiums, technology providers, and market structure providers work together promptly and coordinate current efforts to develop best practices in addition to standards and protocols for DLT. Recent industry efforts – such as those undertaken by Hyperledger and the Enterprise Ethereum Alliance ("EEA") to promote open source technology – are examples of how collaboration can help advance standards and protocols.[11] DTCC recommends enhanced industry-wide coordination and development of a common set of global standards and protocols. This would assist in promoting wide spread implementation of standards and protocols, and facilitate interoperable systems, thereby helping to prevent bifurcated technical standards and solutions. The industry should leverage existing technology standards and protocols where relevant and create new standards and protocols when necessary.

**Mitigating Systemic Risk and Ensuring Risk Management**

While many offerings are nascent, the rapid growth of FinTech solutions requires close monitoring in order to identify potential emerging systemic risks on a timely basis. Policymakers worldwide are working on a variety of initiatives to understand and manage the potential risks associated with emerging technology in a manner that fosters innovation and experimentation.

Accordingly, DTCC supports an integrated, risk-based regulatory regime that allows for flexible and dynamic application, and for continuing adaption as technology and best practices evolve. For example, the European Commission's recent directive on security of network and information systems ("NIS Directive") outlines cyber security requirements and incident reporting obligations for critical infrastructure and digital service providers, such as cloud computing services. The NIS Directive proposes measures, including: (1) free movement of non-personal data across borders; (2) availability of data for regulatory control to ensure public authorities retain access to data when it is located in another Member State, or when it is stored or processed in the cloud; and (3) clarification that current security requirements remain in place

[11] DTCC is a member of the Enterprise Ethereum Alliance and a member of the governing board for Hyperledger.

when businesses store or process data across the EU or in the cloud.[12] DTCC appreciates the European Commission's flexible approach to strengthening the level of cybersecurity in the E.U. as national legislation takes effect in May 2018.

DTCC does not believe that general control requirements specifically for innovation efforts are currently necessary. Rather, flexible and harmonized regulations will allow firms to continuously adapt and manage evolving risks, while supporting responsible innovation. DTCC agrees that regulatory coordination will help advance more consistent and effective supervision in areas including data protection and cyber-security.[13]

Furthermore, as outlined in the Consultative Report, effective information technology, governance structures and risk management procedures are necessary to identify, manage and monitor risks.[14] DTCC believes controls necessary to mitigate risk and ensure vendor oversight are key components of the responsible outsourcing of business functions. For example, as noted earlier, DTCC advises that overall responsibility for cloud services and the data held reside with the firm. Accordingly, firms should assess whether they can continue meeting their compliance responsibilities when considering whether to move regulated functions to a cloud environment. To mitigate unintended consequences, DTCC recommends impact analysis be conducted on potential FinTech solutions on a case-by-case basis.[15] As input to that analysis, continually pressure testing the capabilities of emerging technologies will help ensure that solutions address industry needs, foster innovation and protect market stability.

**Conclusion**

Emerging innovation has the potential to provide regulators with enhanced oversight of the markets and a deeper understanding of risk. DTCC appreciates the opportunity to share its thoughts regarding the implications of FinTech for the financial sector and welcomes the opportunity to further discuss these comments.

Yours sincerely,

Larry E. Thompson

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[12] *See* "Communication on Building a European Data Economy" (10 January 2017), *available at* https://ec.europa.eu/digital-single-market/en/news/communication-building-european-data-economy

[13] *See* BCBS Consultative Report, Recommendation 5.

[14] *See* BCBS Consultative Report, Recommendation 2 and 3.

[15] *See* DTCC white paper, "FinTech and Financial Stability – Exploring How Technological Innovations Could Impact the Safety & Security of Global Markets" (16 Oct 2017), *available at* http://www.dtcc.com/news/2017/october/16/dtcc-unveils-framework-for-assessing-fintechs-impact-on-financial-stability-in-new-white-paper