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Bank for International Settlements (BIS)  
Centralbahnplatz 2  
CH-4002 Basel

Submitted via online form on BIS' website  
(<https://www.bis.org/bcbs/commentupload.htm>)

**Subject: BIS public consultation on cryptoasset standard amendments – comments on permissionless blockchain risks**

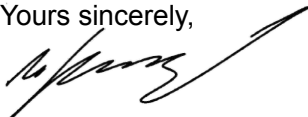
Dear Madam or Sir,

We appreciate the Committee's review and comments regarding its position on the risks of cryptoassets based on permissionless blockchains in the course of the present BIS Consultation, and welcome the opportunity to provide feedback.

The Cardano Foundation is the independent, Swiss-based non-profit organization responsible for stewarding the advancement of the public, permissionless blockchain platform Cardano. Our mission is to anchor the Cardano blockchain as a public digital infrastructure for current and future financial and social systems. One of our aims is to explain and provide context to decentralization risks for various stakeholders, while giving the Cardano community the tools and support necessary to leverage the Cardano infrastructure to solve real-world problems.

Kindly find our comments below. We would gladly address any follow-up questions or contribute to further discussions with the BIS.

Yours sincerely,



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# 1 Introduction

We welcome the Committee's note on the review of its position towards permissionless blockchains provided on page 1 para. 4 of the Consultative Document. The following comments are focused on this topic and do not cover stablecoin exposures.

Given the importance and complexity of this topic plus the wide ranging impact of the Committees' conclusions, we respectfully suggest that additional details regarding the outcome of the risk review as well as regarding its rationale would have been warranted. We are very interested in gaining an accurate understanding of the Committee's risk concerns, in order to provide pertinent inputs and, more importantly, to enable us to work towards addressing the risk concerns with adequate "technical solutions" wherever possible in a permissionless environment.

For the following comments on the general approach and certain key risks, we have interpreted these concerns primarily in the light of the risks included under section SCO60.125 of the BIS standards regarding the prudential treatment of cryptoasset as issued on December 2022 in conjunction with the report "The crypto ecosystem: key elements and risks" as of July 2023.

## 2 BIS Risk Review of Permissionless Blockchains

### 2.1 Avoiding Binary Outcomes

Considering the novelty and new challenges of permissionless blockchain infrastructures, we can appreciate the cautious approach pursued by BIS. Notwithstanding this, we are of the view that the policy position outlined in the Consultative Document leads to a disproportionate and binary outcome for all permissionless blockchains and, even more critically, offers no clear path to addressing the risks identified by BIS.

As a general matter, the implemented cryptoasset group distinction relies heavily on whether the blockchain in question is designed as a public, permissionless or a private, permissioned infrastructure. While this can be a useful shorthand for general conversation, as a policy position it leaves barely any room for differentiations based on the features and state of development of a given permissionless blockchain. A similar observation applies to the distinction between the blockchain as a public digital infrastructure and the applications built on top of it.

This lack of differentiation translates to the risks as assessed by the Committee. While the risk categories identified by the Committee are undoubtedly applicable to most permissionless blockchains to some degree, risk evaluation and weighting differentiations should remain possible.

## 2.2 Impact on Permissionless Blockchain Ecosystems

Under the introduced BIS standards and as a consequence of the Committee's latest conclusions, effectively all assets administered on permissionless blockchains will fall into Group 2b.<sup>1</sup> The resulting capital requirements and general exposure limits effectively make material balance sheet holdings of such assets economically untenable for financial institutions that are subject to the Basel standard. This will undoubtedly negatively impact the overall advancement and development of permissionless blockchain infrastructures and associated ecosystems in a number of ways. We want to highlight the two most critical ones.

Firstly, for permissionless blockchains the native asset that is utilized for the underlying incentive mechanisms (e.g. to reward running a node that processes blockchain entries) is critically important. Primarily, it provides the crucial economic incentive for node operators to validate and secure the network, ultimately allowing for the continued, reliable operation of the infrastructure. Additionally, the native asset is a part of most use case implementations as it is generally required to enable transactions.

Making native assets largely untenable for financial institutions risks debanking all companies and people developing permissionless blockchain infrastructures or building on top of them, irrespective of the legal status of their business models. This is already visible in the day-to-day operations of many companies in the blockchain industry, whose banking services are being cut to minimal (and more importantly off-balance sheet services) at best, or are being offboarded completely due to compliance costs at worst. What makes this phenomenon even more problematic is that this consequence is falling disproportionately on small and midsize companies, which jeopardizes the development pipeline of entire blockchain ecosystems. In short, the BIS standard for cryptoassets is resulting in a disproportionate market intervention for an entire technology sector.

Secondly, irrespective of the actual risk weight, it does not seem proportionate to apply a uniform weighting to all cryptoassets alike, without considering their individual risks. In particular, as cryptoassets are not an homogenous asset class, they can have many different characteristics and

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<sup>1</sup> While Group 2a may be available for some assets and the resulting treatment can improve the situation, the applicability is practically limited to few assets in this class and the associated compliance overhead for financial institutions makes it unlikely that this will mitigate the negative impacts to any significant degree.

risk profiles. This becomes particularly apparent when looking at a regulation like MiCAR in the EU<sup>2</sup>, that allows for the issuance of certain assets on permissionless blockchains with what the legislator has decided are appropriate safeguards. As the BIS cryptoasset framework does not foresee a differentiation based on such jurisdictional compliance rules, it effectively undercuts the goal of such legislative initiatives.

## 2.3 Rebuttal of Key Group 1 Review Conclusions

While somewhat challenging to rebut due to the limited substantive reasoning provided, the Committee's conclusions on permissionless blockchains does contain a number of points that we would like to attempt to address in more detail.

### 2.3.1 Reliance on Third Parties

The review notes as a material risk the reliance on and limited ability to conduct due diligence of third parties which are involved in operating a permissionless blockchain. We understand this concern centers on the fact that permissionless blockchain infrastructures usually rely on a set of node operators contributing to verifying transactions and securing the network, combined with the fact that the entire set is not predetermined and cannot be vetted as it would be in a traditional outsourcing arrangement. Further risks identified by the Committee include the circumstance that node operators are mostly anonymous or pseudonymous and will not be subject to direct control and oversight in regards to their operations, reliability, or reputation. The Committee further mentions the risk of concentration of power, if a group of node operators obtains controlling influence over a blockchain network.<sup>3</sup>

Decentralization and distribution are key design features of permissionless blockchain infrastructures, both on a technical and on a governance level. This includes but is not limited to the open participation model for node operators. These features present a tradeoff in terms of benefit and risk. Decentralized and distributed systems generally have different weaknesses and strengths when compared to the legacy systems in the financial market. Despite the conclusively negative conclusions reached by the Committee, we would like to submit the following considerations:

- Decentralization enhances resilience by distributing control across multiple nodes and minimizing single points of failure, making a well designed permissionless infrastructure overall more secure, reliable and resistant to failure states and attacks.

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<sup>2</sup> Regulation 2023/1114/EU on markets in crypto-assets.

<sup>3</sup> Cf. SCO60.125 1b.

- It reduces the risk of undue control by any single actor and creates a very high level of assurance regarding data integrity.
- It enables trustless interactions among participants using the permissionless infrastructure.
- By disincentivizing concentrations of power, well designed permissionless infrastructures distribute governance responsibilities among node operators and/or participants, which contributes to long-term system resilience and adaptability.
- Sizable and mature permissionless blockchains achieve very high levels of security and up-time that can compete with legacy financial market infrastructures, even if we acknowledge that this depends on the use case in question (e.g. blockchains are usually less ideal for HFT applications).

Furthermore, because of their permissionless nature, there is nothing that hinders financial institutions from operating nodes or outsourcing such operations to trusted outsourcing partners. Most financial institutions interacting with blockchains already do this. This not only mitigates bank operational risk in terms of blockchain system failures (e.g. database failover systems) but also, in our view, if structured correctly as a regulatory requirement<sup>4</sup>, addresses or mitigates many of the BIS's concerns regarding node operator dependencies. From a blockchain design perspective this outcome would also be highly desirable, as it deepens and professionalizes the set of node operators, thus increasing resilience. From a policy perspective this would also clearly be the less onerous mitigation approach than the one currently represented by the hard line between Group 1 and Group 2 assets.

### 2.3.2 Supposed Lack of Exposure by Node Operators

BIS further raises concerns on the lack of accountability for node operators, based on the permissionless blockchain's pseudonymity and the absence of a reputational exposure.<sup>5</sup> We challenge both the facts of this assumption and the resulting conclusion.

Contrary to what the BIS seems to assume, the lack of on-chain identifying information for node operators does not mean there is no reputational component to permissionless blockchain operation. While some node operators will always prefer to remain wholly anonymous, large node operators on Cardano regularly operate as a public business. This is because their business model requires native asset holders to delegate their stake to them (examples of this on Cardano include:

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<sup>4</sup> The selection criteria could be established by the banks themselves or could be outlined by the BIS or other appropriate standard setters. Such criteria should include different aspects, such as operational, resilience and business continuity considerations.

<sup>5</sup> Cf. "The crypto ecosystem: key elements and risks", July 2023, p. 5 et seq.

<https://digitalfortress.online/> or <https://str8pool.com/> or the charity pool run by the United High Commission for Refugees at <https://unrefugees.ch/en/blockchain-refugees>). Such delegations will only happen if the holders of native assets have sufficient trust in the reputation of the node operator. In terms of scale, the more professional section of node operation is also usually more relevant to the overall stability of permissionless blockchains. Furthermore, there are additional, more nuanced, reputational mechanisms at play in most larger blockchain ecosystems as well, that we would be happy to discuss in more detail if this is of interest to BIS.

The diversity of profit motivations and public and non-public roles among node operators should in fact be considered a key strength of permissionless blockchains over many legacy financial markets infrastructures, as it materially reduces many typical operational risks (e.g. cyber attacks).

### 2.3.3 Considerations for BIS' Work Going Forward

Because of the outsized impact of the BIS standards on the development of permissionless blockchains, we strongly urge that a more comprehensive and publicly reasoned analysis of risks and benefits of permissionless blockchains and permissioned infrastructures (be they blockchain based or not) be conducted, so as to enable a truly level playing field. We propose that such work should consider at least the following aspects:

- Analyzing the risk landscape of permissionless blockchains compared to permissioned and legacy infrastructures to identify risk-benefit tradeoffs and respective risks and weaknesses, with the goal of creating a roadmap for permissionless blockchains to achieve risk parity with existing systems.
- Analyzing permissionless blockchains through the lens of the applicable standards for legacy financial institution infrastructure outsourcing. Such work should consider, e.g. what risks are inherently mitigated but also what new risks exist, which permissionless blockchain risks fall within a financial institutions risk sphere, which risks a financial institution can assume (some) direct control of or exercise (some) influence over, and whether such control should be required by the risk in question.
- Analyze attribution of identified risks to the different components of a permissionless blockchain, e.g. such as to duly reflect the limited practical influence individual node operators (or even mid-sized collectives of node operators) have on the system as a whole.
- Analyze the technical risk landscape resulting from the generally proprietary nature of legacy financial market infrastructure code bases when compared to the generally public code bases for permissionless blockchains and the potential long-term benefits of financial

institutions being able to review, audit and propose changes and improvements to the infrastructures they are using.

- Assess the potential public policy and systemic financial market risk benefits of avoiding concentration risks and dependencies stemming from the monolithic current financial market infrastructure and outsourcing industry paradigms.

## 2.4 Conclusions

In summary and as outlined above, while we acknowledge the risks of permissionless blockchains and the work that is still needed, we are very concerned that the current BIS policies create a fundamentally flawed unlevel playing field with permissioned blockchain or legacy infrastructures. We believe a clearer recognition of the fact that no infrastructure paradigm offers complete security but that the discussion should instead revolve around the tradeoffs involved and suitable mitigations, would strengthen financial market resilience overall.

In order to establish a constructive way forward for permissionless blockchain infrastructures to improve and address the Committee's risks concerns, we would welcome more concrete guidance and context surrounding the outcome of the review regarding the risks of permissionless blockchains. Having a more in-depth understanding of areas where the Committee sees critical shortfalls would allow permissionless blockchain infrastructures to address risks in a targeted manner and implement appropriate measures where possible.