

► Interim report to the G20

# Linking fast payment systems across borders: considerations for governance and oversight

October 2023

© Bank for International Settlements 2023. All rights reserved.  
Limited extracts may be reproduced or translated provided the source is stated.

[www.bis.org](http://www.bis.org)  
[email@bis.org](mailto:email@bis.org)

Follow us



## Table of contents

Executive summary.....	4
1. Introduction.....	5
2. Definitions and relevant dimensions.....	7
2.1 FPS and interlinking arrangements among them.....	7
Box 1: Interlinking arrangements: factors and components for consideration.....	8
2.2 Governance, governance arrangements and governance frameworks .....	10
2.3 Oversight.....	11
Box 2: Interaction between governance and oversight.....	12
3. Preliminary governance and oversight considerations drawn from stakeholder engagements .....	13
3.1 Consideration 1: Strategic alignment .....	13
3.2 Consideration 2: Objectives and vision.....	14
3.3 Consideration 3: Design interdependencies.....	14
3.4 Consideration 4: Flexibility and scalability .....	15
3.5 Consideration 5: Business viability.....	16
3.6 Consideration 6: Stakeholder involvement .....	17
3.7 Consideration 7: Proportionate oversight .....	17
3.8 Consideration 8: Oversight expectations .....	18
3.9 Consideration 9: Oversight cooperation .....	18
3.10 Consideration 10: Interaction between governance and oversight .....	19
4. Conclusions and next steps.....	20
Box 3: Key questions for stakeholder feedback.....	20
References.....	22
Annex 1: Existing guidance related to interlinking arrangements.....	23
Annex 2: Stylised models of interlinking arrangements .....	24
Annex 3: Composition of CPMI Governance and Oversight Workstream.....	26

## Executive summary

Interlinking arrangements among fast payment systems (FPS) are one of the most promising solutions for enhancing cross-border payments, offering the prospect of significantly faster, cheaper, more accessible and transparent cross-border payments. Moreover, opportunities to foster FPS interlinking have grown with the proliferation of FPS globally and trends towards greater interoperability at the technical level. However, practitioners and authorities involved in FPS interlinking have noted that agreeing on workable governance and oversight arrangements can be especially challenging (relative to, for example, the operational and technical challenges) due to the multi-jurisdictional, cross-border and/or cross-currency nature of these arrangements. While existing governance and oversight standards and frameworks for financial market infrastructures (FMIs) are relevant and helpful, the practical implementation of cross-border interlinking arrangements (especially of FPS) may raise new issues that require further elaboration or tailored approaches. The G20 has thus identified the governance and oversight of cross-border payment system interlinking arrangements, in particular of FPS, as a priority action in helping to achieve its 2027 cross-border payments targets.

Given the topic's complexity and the need for intensive engagements with global stakeholders, a two-year time frame for completion of this priority action has been set. The Bank for International Settlements' Committee on Payments and Market Infrastructures (CPMI) plans to deliver a final report by end-2024. This interim report to the G20 is intended to be an update focused on the CPMI's engagements to date. It is *not* intended to present a draft or preliminary framework, nor does it present any draft guidance or best practices in this area. What the interim report does do, however, is to present selected initial considerations for FPS interlinking governance and oversight, as informed by a series of workshops with global stakeholders that was undertaken by a CPMI workstream. The workshops were held for the purpose of better understanding the sensitivities, complexities and experiences of global stakeholders as they relate to the governance and oversight of FPS interlinking arrangements. Most prominently, key input was provided by a senior-level G20 flagship event on FPS interlinking arrangements co-organised by the CPMI and the Indian G20 Presidency on the sidelines of the July 2023 G20 meetings in India. The report also builds on the 2022 report of the CPMI to the G20 that outlined how interlinking arrangements for payment systems could enhance cross-border payments.

The 10 considerations covered in this interim report can be grouped into three categories. Considerations 1–2 relate to the initial structural conditions that appear to create favourable conditions for effective governance. This includes strategic alignment of the involved jurisdictions and agreement on the objectives and vision of the arrangement. Considerations 3–6 discuss insights related to specific governance design considerations and priorities that stakeholders have viewed as important for the coherence, scalability, business viability and inclusiveness of an FPS interlinking arrangement. Finally, considerations 7–10 address what the special characteristics of FPS interlinking arrangements imply for the design and conduct of oversight in a multi-jurisdictional context. The report concludes with a set of questions, for which further stakeholder input is sought.

The considerations may provide insights for practitioners and authorities when exploring the governance and oversight aspects of FPS interlinking. However, they should be viewed as being preliminary, as they require further engagement with stakeholders and related analysis. As such, the CPMI hopes that the preliminary considerations will serve as a basis for this stakeholder engagement, with the questions provided intended to solicit feedback on this report. These preliminary considerations, together with additional insights gained from further engagement with stakeholders and their written feedback to this report, will feed into the CPMI's objective of delivering a final report related to governance and oversight for FPS interlinking arrangements in 2024.

## 1. Introduction

Interlinking arrangements are one of the most promising solutions for enhancing cross-border payments. So far they remain relatively untapped. As part of its cross-border payments programme, the G20 has identified the interlinking of fast payment systems (FPS), with their real-time and 24/7 operational capabilities, as one of the priority actions to help achieve its targets for cross-border retail payments and remittances by 2027. Interlinking arrangements for cross-border payments allow payment service providers (PSPs) of different jurisdictions participating in different payment systems to transact with one another as if they were participants in the same system. Cross-border payments processed via the interlinked FPS can be completed within seconds or at most minutes and this can help to cut costs, increase access and enhance the transparency of cross-border payments.

Opportunities have increased to foster FPS interlinking. National strategic and economic policy priorities have contributed to a proliferation of FPS over the past decade. In particular, around 70 jurisdictions worldwide already have FPS in place to support their domestic policy objectives for an expanded and more inclusive payments ecosystem, and several more FPS are being planned. The greater technical and business interoperability of FPS (eg through migration to the ISO 20022 messaging standard and the use of harmonised APIs) makes interlinking increasingly feasible. Accordingly, the number of FPS interlinking arrangements has grown worldwide, mostly in form of bilateral links between jurisdictions with strong economic and trade ties. The trend towards interlinking, including multilateral links, is likely to increase in the years to come.

The G20 has recognised the growing opportunities for interlinking to help achieve the quantitative targets on cross-border payments by end-2027, and has made fostering FPS interlinking a priority of the cross-border payments programme. Well designed interlinking arrangements (CPMI (2022)) are seen as helping to:

- Mitigate risks of technical and legal fragmentation, due to the adoption of international standards and agreed service levels;
- Cut costs for payment service providers (PSPs) and ultimately for users, due to efficiency gains and more competition;
- Reduce financial risks and optimise PSPs' liquidity management, if payment-versus-payment mechanisms are used and liquidity can be pooled;
- Increase the speed of cross-border payments from days and hours to seconds, due to real-time, always-on solutions;
- Expand reachability and provide a choice alongside correspondent banking; and
- Contribute to financial market integrity, due to smoother and more effective AML/CFT compliance checks.

For 2023–24, the G20 Roadmap has included three specific actions. First, the Bank for International Settlements (BIS) has been asked through the BIS Innovation Hub to finalise blueprints and preparatory work for Project Nexus,<sup>1</sup> an approach to FPS interlinking on a multilateral basis. Second, together with the Indian G20 Presidency and on the sidelines of the July 2023 G20 meetings in India, the BIS Committee on Payments and Market Infrastructures (CPMI) held a senior-level flagship event showcasing interlinking arrangements and taking forward the conversation on governance and oversight of interlinking arrangements. Finally, the G20 tasked the CPMI with drafting an interim report in 2023 on governance and oversight considerations for FPS interlinking arrangements, drawing on the discussions at the July G20 event and on stakeholder workshops organised by the CPMI. Given the complexity of the

<sup>1</sup> The BIS Innovation Hub's Project Nexus conducted a proof-of-concept and provides a blueprint for connecting multiple national payment systems into a cross-border network. For more information see [www.bis.org/publ/othp62.htm](https://www.bis.org/publ/othp62.htm).



topic and the need for intensive engagements with global stakeholders, a two-year timeframe for completion of this priority action has been set. The CPMI plans to deliver a final report by end-2024. This interim report to the G20 is intended to be an update focused on the CPMI's engagements to date.

The G20's desire to focus on interlinking governance and oversight of FPS interlinking arrangements reflects a global trend and increasing demand. First, practitioners and authorities involved in FPS interlinking have noted that it can be challenging for payment system operators to agree on workable approaches for the governance of interlinking arrangements. It can be equally challenging for central banks to develop and implement a framework and a cooperative arrangement to oversee interlinking arrangements, especially given the multi-jurisdictional context and associated differences in legal frameworks, regulations and central bank policies. Second, given that FPS interlinking is relatively new, generally accepted international guidance on governance and oversight has not yet emerged (although several existing references provide a basis for further thinking on this matter – see Annex 1). Workable, sound and efficient governance and oversight frameworks could foster the establishment of more durable FPS interlinking arrangements.

The CPMI has gathered information and views for the drafting of an interim report on governance and oversight arrangements for FPS interlinking. This report presents the CPMI workstream's considerations from a series of workshops with relevant stakeholders (FPS operators, payments associations, global transaction banks, consultancies). The July G20 workshop with senior officials provided crucial input into the workstream's considerations. Importantly, the focus of the interim report is on the governance of the interlinking arrangement and its oversight, not those of involved FPS, which are subject to their respective jurisdictional frameworks.<sup>2</sup> It is intended to present selected initial considerations for FPS interlinking governance and oversight informed by the series of workshops with global stakeholders. Given the limited set of observations, the considerations are necessarily preliminary; the report is not intended to present a draft or preliminary framework, nor does it seek to present any draft guidance or best practices in this area.

The preliminary considerations in this report have a twofold purpose. First, the CPMI hopes that they will be informative for practitioners and authorities exploring the governance and oversight aspects of FPS interlinking. Second, the workstream intends to use them as a basis for further dialogue and engagement with stakeholders; consultation questions are included to facilitate such dialogue. The considerations are intended to contribute to the CPMI's objective of delivering a final report on FPS interlinking governance and oversight in 2024, which could be a useful reference for both payment system owners and overseers.

This report is organised as follows. Section 2 provides clarity on the definitions for the key concepts used in the analysis. Section 3 contains the key considerations (and related questions for which the CPMI is seeking input) for consideration in the design of governance and oversight arrangements, as informed by international experience and distilled from stakeholder engagements. The final section concludes and discusses next steps.

<sup>2</sup> It is acknowledged that some FPS may not be subject to any domestic oversight arrangement and that a prior question might be asked as to the appropriate domestic oversight framework for FPS. However, this is beyond the scope of this work as prescribed by the G20.

## 2. Definitions and relevant dimensions

This section provides definitions for the major concepts used in this report, including FPS, interlinking arrangements, governance and oversight.

### 2.1 FPS and interlinking arrangements among them

FPS<sup>3</sup> are infrastructures for the clearing and/or settlement of fast payments on behalf of their participants. They are retail payment systems in which the transmission of the payment message and the availability of “final” funds to the payee occur in real time or near real time, and on as near to a 24-hour and seven-day a week (24/7) basis as possible. Credit of final funds to the payee means that the payee has unconditional and irrevocable access to them. An FPS could be operated by a central bank, a private sector operator, or through a public-private partnership.

FPS interlinking arrangements for cross-border payments can be defined as a set of contractual agreements, technical links and standards, and operational components between FPS of different jurisdictions, allowing their respective participating PSPs to transact with one another as if they were in the same system. An interlinking arrangement enables a PSP participating in the FPS of country A to send payments to PSPs participating in the FPS country B, such that the payee has availability of “final” funds in real time or near real time, without the need for country A’s PSP to open accounts in country B or become a participant in country B’s payment system. FPS interlinking arrangements can be a series of bilateral links each with their own rules or links under a common framework (CPMI (2022)). Annex 2 lays out four stylised models of interlinking arrangements. Irrespective of the model, each interlinking arrangement will need to agree on the features across the same functions as identified for multilateral platforms (see Table 1 and CPMI, BIS IH, IMF and World Bank (2023)). It is important to note that while these features may be influenced by governance and oversight arrangements, they may not be *in themselves* components of governance or oversight arrangements (as will be defined in section 2.2).

Features of interlinking arrangements		Table 1
Function	Related features	
1. Liquidity management	Intraday credit facilities Liquidity-saving mechanisms Collateral management functions	
2. Payment messaging including authentication, initiation, submission and conditionality	Standardised messaging Proxy-lookup registries Pre-validation services APIs for technical integration with third parties Limited operating hours or 24/7/365 Quantity and time limits Capital flow management measures	
3. Compliance and data processing	AML/CFT and fraud monitoring KYC registries Privacy and data management	
4. Clearing including netting (where applicable)	Single or multi-cycle	

<sup>3</sup> In different jurisdictions, the terms used for fast payments may vary, although the underlying meaning could still be the same. Other common terms for these services are “instant,” “immediate,” “real-time” or “faster” payments. See CPMI, *Fast payments – Enhancing the speed and availability of retail payments*, 2017.

5. Settlement	Bilateral or multilateral
	Legal finality and technical settlement
	Real-time gross or deferred net settlement
	Settlement currency
	Type of settlement asset (commercial bank money, central bank money, crypto)
6. Foreign exchange (FX)	Settlement risk management measures (eg prefunding)
	Currency conversion
	Payment versus payment (PvP)

---

Source: Based on CPMI, BIS IH, IMF and World Bank (2023).

---

Establishing an FPS interlinking arrangement requires more than the commitment of the FPS owners to technically connect the systems. Several factors and components, which are partly outside the sphere of influence of the FPS owners, could be considered for the establishment of cross-border payment links (see Box 1 and (CPMI (2022)). Furthermore, and depending on the design, the FPS interlinking arrangement may involve the establishment of a new entity to operate the technical connections (eg a “hub” or a “common platform”; FX providers to provide currency conversion (for arrangements where such a service is provided); and settlement agents.

Box 1

## Interlinking arrangements: factors and components for consideration

In 2022, the CPMI published a report to the G20 that provides a framework to help payment system operators and authorities to understand and evaluate the benefits, challenges and risks of interlinking arrangements. Inter alia, it provides important considerations on the rules and risk management measures, including those for access and governance. Interlinking may face challenges and risks that need careful consideration and planning by operators and authorities considering such arrangements. Challenges relate to the level of political support, possible high start-up costs, divergent legal, regulatory and oversight frameworks, misaligned access criteria, differences in service level requirements and operational risk management. A range of risks could also be exacerbated by interlinking arrangements if not appropriately mitigated. These challenges and risks need to be carefully considered before establishing an interlinking arrangement and on an ongoing basis once the arrangement is in operation.

The 2022 report discusses factors and components that jurisdictions could consider when exploring the possibility of pursuing interlinking arrangements to improve cross-border payments. Some of these aspects and practical perspectives may also apply to interlinking arrangements on an ongoing basis. The factors that can enable interlinking are:

- Strategic and political factors: For cross-border interlinking to be successful, the support of relevant public and private sector stakeholders for an appropriately designed interlinking arrangement in their respective jurisdiction is important.
- Legal, regulatory and oversight factors: The relevant legal, regulatory and oversight underpinnings for an interlinking arrangement are important to consider given the cross-jurisdictional nature of these arrangements.

The components of an interlinking arrangement are:

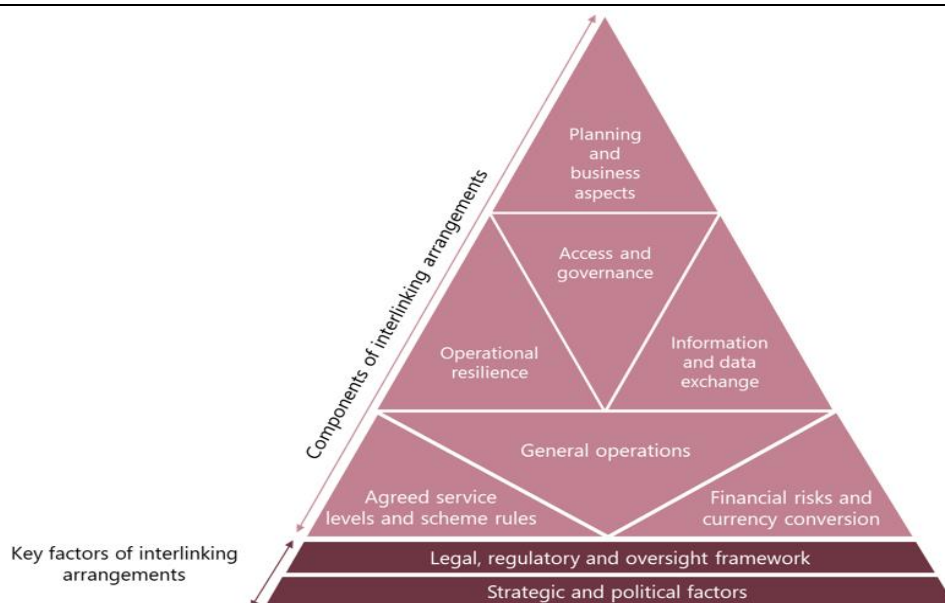
- Planning and business components: It is important to consider whether there is a clear and sustainable business case for establishing the interlinking arrangement.



- Access and governance: The rules and risk management measures, including those for access and governance, are important to consider, given the cross-system and cross-jurisdictional nature of these arrangements.
- Agreed service levels and scheme rules: Service levels and scheme rules, including how they define the minimum operational and technical requirements agreed between the interlinked payment systems for payments processed via the interlinking arrangement, are important considerations.
- General operations: The smooth functioning of an interlinking arrangement can be affected by considerations for the timely processing and settlement of payments in the interlinked systems, and how the arrangement can facilitate secure, reliable, fast and cost-effective cross-border payments.
- Financial risks and currency conversion: Potential financial risks arising from the interlinking arrangement are important to consider, particularly for an arrangement with a cross-currency conversion mechanism.
- Operational resilience: The operational resilience of interlinking arrangements is an important consideration, given the potentially broad reach of these arrangements and the potential impact of operational events on multiple jurisdictions.
- Information and data exchange: Considerations on how to reduce development costs and shorten the time-to-market of interlinking arrangements could include whether to adopt international technical standards, such as those for common messaging formats and APIs to support straight through processing by increasing the automation of information exchange and AML/CFT processes, as appropriate.

Key factors and components for exploring interlinking arrangements

Graph 1



Source: CPMI (2022).

## 2.2 Governance, governance arrangements and governance frameworks

Governance, as defined in the PFMI is “the set of relationships between an FMI’s owners, board of directors (or equivalent), management and other relevant parties, including participants, authorities, and other stakeholders [...]. Governance provides the processes through which an organisation sets its objectives, determines the means for achieving those objectives, and monitors performance against those objectives” (CPSS-IOSCO (2012)).

As this definition suggests, governance deals generally with the accountability of risk decisions and the exercise of decision-making power or authority within an organisation or an FPS interlinking arrangement. In particular, governance identifies *which* decisions are specific to FPS interlinking arrangements (versus those that are for the domestic systems only), *who* has decision-making authority (ie identifying stakeholders and rights associated with specific groups of stakeholders), *how* this authority is used (ie the processes and procedures in making decisions) and *what* are the objectives of the organisation. For the sake of clarity, the focus of this report is on the governance of the FPS interlinking arrangement and not the governance of the involved FPS as such, which have their own specific governance rules.

As further described in the PFMI, governance arrangements define the design features under which the board and management operate and include several key components such as (a) role and composition of the board and any board committees; (b) senior management structure; (c) reporting lines between management and the board; (d) ownership structure; (e) internal governance policy; (f) design of risk management and internal controls; (g) procedures for the appointment of board members and senior management; and (h) processes for ensuring performance accountability. Additional components may consist of advisory bodies that aim to promote inclusion of diverse stakeholder viewpoints and investors that have a monetary stake in the interlinking arrangement and hence are interested to have a say in the governance and decision making. Further, governance arrangements should be clearly and thoroughly documented and disclosed to owners, authorities, participants and, at a more general level, the public. Each component of a governance arrangement may present a variety of design choices. For example, the role and composition of the board may vary greatly (eg board size, independent vs non-independent directors). Ownership structures may vary by share types offered (eg existence of privileged share classes), shareholder voting rights (eg equal or proportional), and shareholder voting rules (eg unanimous, majority, supermajority). Board and senior management appointment procedures may also differ from one arrangement to another (eg rotating vs non-rotating chairs, different board voting rules). The role of advisory bodies can also vary quite significantly, from purely advisory to a more formal role in the decision-making process.

The governance arrangement of the interlinking arrangement should be compatible with the respective individual governance approach of the FPS. There is no “one-size-fits-all” governance arrangement, and the governance arrangement might need to be tailored due to a variety of factors, including national law, ownership structure, or the specific model underpinning the interlinking arrangement and/or of the specific interlinked FPS.

Whereas governance relates to the general topic of decision-making authority and governance arrangements specify the design features of decision-making authority for an interlinking arrangement, governance *frameworks* are defined here as a conceptual structure intended to serve as a support or guide for building governance arrangements. As such, a governance framework can serve as an analytical construct to help one understand the trade-offs associated with specific design choices related to the components of governance arrangements. Moreover, just as the particular arrangement of a building’s support beams – its framework – provides a building with its general shape, a particular configuration of a governance arrangement may lend itself to desired outcomes (eg promotion of safety and efficiency).

In considering the desired outcome, a governance framework for a FPS interlinking arrangement may take into consideration such factors as an arrangement’s initial conditions; future plans and scalability; and the roles and responsibilities of the various stakeholders involved in the link, including the FPS

operators, the interlinking operator, FX providers and/or settlement agents. In turn, a governance framework influences the considerations and selection of a particular governance arrangement setup.

## 2.3 Oversight

Oversight can be defined as “a central bank function whereby the objectives of safety and efficiency are promoted by monitoring existing and planned payment, clearing, settlement and related arrangements, assessing them against these objectives, and where necessary, inducing change. These arrangements include FMIs and other payment, clearing, settlement and reporting arrangements and activities, both within and across jurisdictions (encompassing systems and activities involving large-value and retail payments, foreign exchange settlement, securities and derivatives clearing and settlement, multilateral netting and collateral management) as well as retail payment instruments or schemes. The scope of oversight differs between central banks but usually includes FMIs, with oversight being conducted domestically and through cross-border cooperation.” (CPMI Glossary).

Central bank oversight for payment systems and arrangements can involve cooperation with other authorities. Such oversight can be conducted within and across jurisdictions (eg through cross-border cooperation) to ensure the safety and efficiency of the overall interlinking arrangement and its constituent FPS. The interlinking arrangement might be subject to different oversight frameworks of their respective home jurisdiction and/or a cooperative oversight arrangement across jurisdictions.<sup>4,5</sup>

<sup>4</sup> For example, cross-border oversight cooperation needs to focus on the ongoing monitoring and assessment of the interlinking arrangement with a view to preventing potential inconsistencies, duplications or gaps in how rules or standards are applied. This also requires specific arrangements for communication and coordination in emergencies.

<sup>5</sup> In some jurisdictions, payment systems are subject to supervisory guidelines as well as oversight frameworks; oversight is defined here as being inclusive of the supervision and regulation of FMIs.

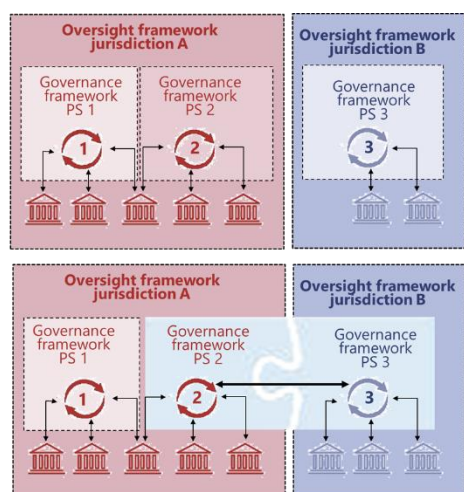
## Interaction between governance and oversight

Governance and oversight are conceptually distinct but interact with each other. While the governance approach is customised to an individual payment system or the interlinking arrangement between them, the oversight framework applies to one or more payment systems within a jurisdiction or, in the case of a cooperative oversight arrangement, across jurisdictions. A key aspect of a governance framework for an interlinking arrangement would be to ensure that it embeds the rules or processes to ensure compliance with the relevant oversight framework. Conversely, one of the focus areas of the oversight framework would be on the effectiveness of the governance structure and processes (eg in meeting the interlinking arrangement's objectives).

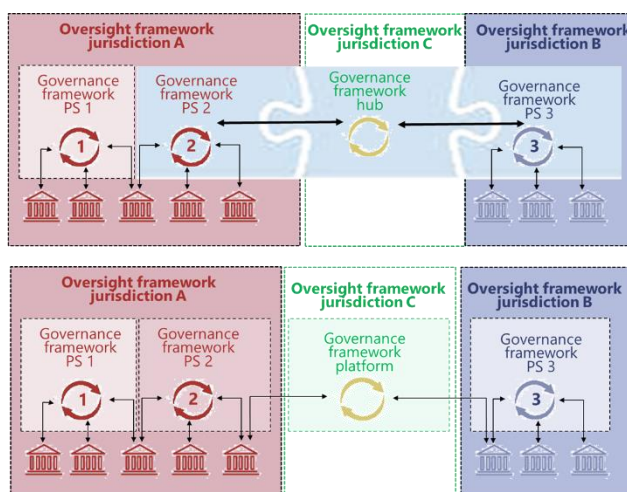
### Different models of interlinking and level compatibility of governance frameworks

Graph 2

Baseline scenario (no interlinking)



Hub and spoke



Bilateral link

Source: CPML.

Common platform

Source: CPML.

Graph 2 illustrates how different oversight and governance frameworks relate to interlinking models. Where there is no interlinking, domestic systems must ensure only that their individual governance framework complies with their respective central bank's oversight framework. In a bilateral linking model, the interlinked payment systems maintain their own governance frameworks but these must be compatible with each other. Each payment system is subject to the oversight frameworks of their central banks. In a "hub-and-spoke" model, the hub has a separate governance framework which should not conflict with the governance frameworks of the interlinked systems. The hub is also subject to the oversight framework of the jurisdiction where it is based (which could be in the jurisdiction of a "spoke" or another jurisdiction) and to a possible cooperative oversight arrangement. In a common platform model, the platform also has a separate governance framework, and is subject to the oversight framework of the jurisdiction where it is based (again this can be a jurisdiction in which some of the participants are located or another jurisdiction). However, as the platform is a separate payment system and interlinking is achieved at the level of PSPs participating in the platform (rather than at payment system level), the compatibility of its governance framework with the analogous frameworks of domestic systems is less of an issue.

Source: CPML.

### 3. Preliminary governance and oversight considerations drawn from stakeholder engagements

To fulfil the G20's request to provide considerations for the governance and oversight of FPS interlinking arrangements, the CPMI held a number of workshops and bilateral meetings with stakeholders from June to August 2023 to gather a broad range of perspectives directly from stakeholders in FPS interlinking arrangements. Most prominently, the CPMI and the Indian G20 Presidency co-organised a senior-level flagship event on FPS interlinking arrangements in India during the July 2023 G20 meetings. The event aimed to facilitate interlinking by showcasing existing or planned interlinking arrangements and to take forward the global conversation on governance and oversight of FPS interlinking arrangements.

The G20 flagship event and other stakeholder engagements yielded important considerations for the CPMI, which are laid out in this section. The 10 considerations presented here can be generally categorised as those related to initial conditions for effective governance (Considerations 1–2), governance design considerations and priorities (Considerations 3–6) and oversight (Considerations 7–10). The considerations, while being initial observations only, provide helpful insights into the G20 and CPMI discussions and are also intended to serve as the basis for further engagement and dialogue with stakeholders. They may not equally apply to the different type of interlinking arrangements and/or their ownership structure (private, public, public-private). To facilitate this future engagement, this section concludes with a set of questions for which the CPMI is seeking further stakeholder input. Together with the considerations gathered to date, the CPMI will use any additional findings to issue a final report by end-2024.

#### 3.1 Consideration 1: Strategic alignment

***Compatible strategic and economic policy priorities among the involved jurisdictions can create favourable conditions for agreement on potentially sensitive issues related to the design of an arrangement's governance.***

- Agreeing to the governance for interlinking arrangements can be especially challenging because of the sensitivity of issues around who has decision-making authority on matters that may touch on national sovereignty, security and long-term payments system strategy (see Box 1). It is no coincidence, therefore, that many interlinking initiatives have been launched in the context of pre-existing regional integration initiatives. In these initiatives, regional economic and financial integration may be already agreed in line with national strategies and the authorities may already be used to participating through common governance structures and processes (including dispute resolution processes). An alignment of national strategic and economic policy priorities among the involved jurisdictions may thus ease agreement on key aspects of an arrangement's governance. The regional integration initiatives may themselves reflect demand from customers and participants in domestic systems for effective cross-border access to regional markets and services for greater investment opportunities and the growth orientation of existing financial institutions for expansion into newer market areas. They could also reflect strategic supply side initiatives to spur economic and trade policy for greater cross-border payment flows and acting as a demand stimulator.
- Alignment or compatibility of the authorities' attitudes toward the role of the central banks and other public authorities vis-à-vis payment systems can also be a factor in establishing favourable conditions for an agreement on an arrangement's governance. Central banks can be the overseers, catalysts and/or operators of payment systems. While most central banks are involved in payments oversight, central banks may differ in their level of involvement in each of these three roles, especially as catalysts or operators. But a broad agreement among the participating central banks that they should be a catalyst to achieve the specific public interest goals of a particular arrangement (eg low-cost and fast cross-border payments) could help pave the way for the relevant central banks to participate in the

governance of cross-border interlinking arrangements with a view to ensuring that the public interest goals are met (eg even in arrangements where central banks are not involved as direct operators, the arrangement may reserve a seat on its board for them, or a central bank may maintain ownership of the arrangement while outsourcing operations).

### 3.2 Consideration 2: Objectives and vision

***A common long-term vision and objectives for an interlinking arrangement among the private and/or public sector FPS owners can be an important starting point for designing, establishing and maintaining the effectiveness of an FPS interlinking governance arrangement.***

- A clear articulation and broad agreement on the objectives of an interlinking arrangement can help to identify and rank the importance of different guiding principles (eg inclusivity, neutrality, agility). Agreement on the objectives of an interlinking arrangement may inform important design choices around the composition of shareholders/members, the board of directors, and potential advisory groups. Stakeholder agreement on an arrangement's objectives is also an important aspect of keeping management accountable for an arrangement's performance.
- Clarity of longer-term vision for the arrangement can also be seen as helping guide decisions on ownership structure and hence governance arrangement design. For example, should the longer-term vision of arrangement include potential expansion to other regions, it would be important for the ownership structure to anticipate that future extension. If the owner of an arrangement is a supranational organisation (eg regional monetary fund or multilateral/regional development bank), a prospective participating jurisdiction's lack of membership in the supranational organisation could become a complicating factor (eg by requiring parliamentary approvals). This may have implications for the preferred ownership structure of the arrangement during the design phase.

### 3.3 Consideration 3: Design interdependencies

***The chosen ownership structure and legal setup of the interlinking arrangement can have strong interdependencies with key aspects of the governance framework.***

- A key next step would be to determine the appropriate governance design choices to achieve the arrangement's desired vision and objectives. Two areas that were viewed as having strong interdependencies, and that could be considered at the outset, are the arrangement's ownership structure and legal setup. Decisions on these two structural aspects could have a significant bearing on the finer design details of the governance arrangement.
- The owners of an interlinking arrangement would be able to exercise control and shape its direction and commercial orientation (eg for-profit, not-for-profit). Hence, the choice and composition of owners would be key (eg public sector-owned, private sector-owned, hybrid). This could be guided by the objectives of the interlinking arrangement. For instance, greater focus on public policy goals (eg financial inclusion) may argue for involvement of the public sector as a catalyst or even as an owner or co-owner of the arrangement.
- When the arrangement involves the creation of a dedicated entity, the choice of legal entity type for the interlinking arrangement would have an important bearing on key aspects of the governance arrangement (eg the ownership structure, agility, ability to raise funding and scale). For example, if a multilateral platform is set up as a supranational entity or an international organisation, typically only national governments can be a member of such an entity. Likewise, due to their mandates, central banks typically may own or fund only a company that is limited by guarantee or a foundation that is



not-for-profit, as distinct from a company limited by shares.<sup>6</sup> Companies limited by shares, however, may offer a greater degree of agility and flexibility in fund-raising and scalability. For instance, different classes of shares can be issued to cater for different categories of owners/subscribers. It is important to understand these trade-offs when identifying the appropriate legal entity setup for the interlinking arrangement.

### 3.4 Consideration 4: Flexibility and scalability

***The flexibility and scalability of the governance arrangement can be especially important for a cross-border interlinking arrangement to facilitate future expansion and an evolution of the role of central bank involvement.***

- Stakeholder feedback emphasised the importance of governance to be adaptable and able to continuously evolve to fit changing circumstances. While the vision and objectives may stay the same, the design of the governance arrangement should be flexible enough to adapt over time and to changes (eg introduction of new stakeholders, change in ownership structure). For instance, while inclusivity (eg one FPS, one vote) may be initially important to ensure parity and foster alignment between first movers, a more proportionate voting model that reflects relative transaction volumes across FPS may be needed at a later stage to facilitate scalability and expansion into other corridors.
- One aspect considered to be important by stakeholders is the ability to accommodate future expansion of the arrangement. To this end, it is important to future-proof the governance arrangement so that it is scalable by design, and aligned with the vision and objectives of the interlinking arrangement. This is because specific aspects of a governance arrangement, once finalised, may be difficult or costly to unwind. For instance, if a hub-and-spoke arrangement or common platform aims to be a global rather than a regional network, the choice of ownership structure, legal entity setup and home jurisdiction must be neutral and flexible enough to cater for the needs of different stakeholders across several regions.
- While individual FPS access policies of an arrangement may be different, the governance should be sufficiently flexible to allow new owners, new participants and new stakeholders to be included over time to facilitate expansion of the interlinking arrangement into other regions, countries, participants and end users. Any access criteria should be risk-based, proportionate and transparent, with adequate safeguards (eg equitable appeal channels) built in to instil confidence and attract participation.
- Finally, governance should be flexible to accommodate an evolution in the role of central banks in an interlinking arrangement. A number of stakeholders indicated that central banks often play vital roles in establishing an interlinking arrangement. During the start-up phase, they may provide initial funding and capital for investments and operations. However, central banks may seek to shift to a less direct role as owners and/or operators in an arrangement over time as the market matures and becomes more self-sustaining. In this instance, the governance arrangement should be able to accommodate an evolution in ownership structure, operations, board composition and stakeholder involvement.

<sup>6</sup> A *company limited by shares* is a company where the liability of its shareholders is limited by the amount of share capital that they contribute to the company. It is typically set up with for-profit objectives, by which the profits can be distributed to the shareholders in the form of dividends. A *company limited by guarantee* is a company without share capital or shareholders, but instead has members who agree to pay a nominal sum if the company is wound up. It is typically set up with non-profit objectives.

### 3.5 Consideration 5: Business viability

***A wide adoption of fast payments at the jurisdictional level can contribute to the business viability of an FPS interlinking arrangement. The governance arrangement of the interlinking arrangement can leverage the experience from the interlinked FPS to increase adoption, usage and ultimately its sustainability.***

- Without a clear path towards business viability shareholder and/or broader stakeholder support for an interlinking initiative might be challenging. Public sector involvement in the start-up phase of an interlinking arrangement, and its governance, may be necessary to address a market failure (eg cross-border payments for a particular user segment), including contribution to the initial funding and/or ongoing operational costs. However, this does not necessarily translate into an open-ended mandate to provide public good services irrespective of business viability.
- Stakeholder feedback has suggested that catering to diverse use cases and stakeholders can be important for attracting the necessary demand for services. The governance arrangement can play an important role in supporting this diversification. As the investment costs for building a platform to support an interlinking arrangement are fixed and potentially high, large transaction volumes can help to reduce the average costs per payment. This would allow PSPs to offer their cross-border payment services at competitive prices while still recouping their investment. An inclusive governance arrangement with opportunities for diverse stakeholder representation may support efforts to increase demand for the arrangement (see also Consideration 6).
- An interlinking arrangement's management plays a critical role in assessing the ongoing business viability of the arrangement. Moreover, a clear awareness and understanding of the benefits or costs of PSPs using alternative channels also helps guide effective decision-making to attract demand. Relatedly, benchmarks and targets related to payment flows and costs could be introduced, and the arrangement's performance against them could be monitored. Further, these benchmarks could be included among the arrangement's key performance indicators.
- Board members and managers with expertise on cross-border payment trends, retail payments and pricing would be of advantage for the interlinking arrangement. Consideration of independent directors with expertise and experience in the business aspects of cross-border payments would also be appropriate.<sup>7</sup>
- Market stakeholders noted that agreement on the governance for the pricing model was quite important. In some cases, agreement on the pricing model and related governance was a first-order priority before moving on to negotiations over governance of the technical and operational aspects of an arrangement.

<sup>7</sup> Section 3.2.10 of the PFMI states that "The board should be composed of suitable members with appropriate mix of skills (including strategic and relevant technical skills), experience and knowledge of the entity (including an understanding of an FMI's interconnectedness with other parts of the financial system.)"

### 3.6 Consideration 6: Stakeholder involvement

***Representative stakeholder involvement in governance can increase acceptance of the cross-border interlinking arrangement, while keeping governance processes efficient and agile. It can be especially critical for the success of arrangements that may be driven by public interest objectives and operate in a diverse and multi-jurisdictional context.***

- Stakeholder involvement for an interlinking arrangement should be representative and consistent with the current and future stakeholder set as informed by the arrangement's objectives and vision. Arrangements with broad public interest objectives (eg low-cost and fast cross-border payments and financial inclusion) could benefit from broad channels of stakeholder involvement. In particular, an arrangement's governance could allow for the assessment of the impact of its decision-making on relevant stakeholders and mechanisms for receiving and considering input of relevant stakeholders.<sup>8</sup> Relevant stakeholders may go beyond an arrangement's immediate participants, users and owners, and include other payment systems and end users (individuals, businesses, public administrations), and policymakers and regulators. Moreover, they may involve new or emerging user communities. There may be trade-offs for the performance of governance, however, in seeking broader and a more inclusive stakeholder representation. For example, a larger board may support representativeness and inclusion but at the expense of agility (though this may be mitigated by other methods such as submitting only the most critical decisions to a board vote or by lowering the voting threshold).
- Interlinking arrangements may use a variety of mechanisms for involving stakeholders and ensuring that their views are appropriately considered in the decision-making process. These include stakeholder representation on the board (including direct and indirect participants), user committees, and public consultation processes. For those that are not involved in the decision-making process, it would be beneficial if the arrangement promptly informs its owners, participants, other users, and where appropriate, the broad public, of the outcome of major decisions, as suggested by the PFMI (Principle 2) in the case of systemically important payments systems. The transparency of the decision-making processes and outcomes in turn may facilitate stronger stakeholder involvement by keeping stakeholders well informed of developments.
- The potential diversity of stakeholders gives rise to potential conflicts and the need for a robust conflict resolution framework. This is especially the case if there are mechanisms or mitigants in place to reduce the risk of decision-making gridlock due to a broad diversity of stakeholders (eg lower voting thresholds).

### 3.7 Consideration 7: Proportionate oversight

***Depending on the state of the interlinking arrangement (ie planning, design, implementation, live-operation) and the characteristics of its use (eg scale, intended use case), a pragmatic and proportionate approach in terms of risk management and oversight, may contribute to its success.***

- Risk-proportionate oversight can be a more efficient and effective way to oversee cross-border interlinking arrangements than a one-size-fits-all approach, especially in the early stages of an arrangement's development, when cross-border payment volumes may be low. By taking into account

<sup>8</sup> Principle 2 (Section 3.2.18) of the PFMI states "An FMI's board should consider all relevant stakeholders' interests, including those of its direct and indirect participants, in making major decisions, including those relating to the system's design, rules, and overall business strategy. An FMI with cross-border operations, in particular, should ensure that the full range of views across the jurisdictions in which it operates is appropriately considered in the decision-making process."

the specific risks of each link, regulators can ensure that their oversight is proportionate to the risks (eg from its size and complexity) and that it is effective in mitigating and managing those risks.

- When assessing the risk profile of a cross-border interlinking arrangement, regulators may consider the following factors: the type of service (eg remittance or consumer-to-business payment), number of jurisdictions involved (bilateral or multilateral connectivity), the complexity of the link, and the legal and regulatory environment. In terms of the number of jurisdictions involved, bilateral links might be seen as less risky than multilateral links and cooperative oversight between two central banks might be easier to establish and offer a higher degree of flexibility. In contrast, more complex multilateral links and risks might suggest the need for more formal forms of cooperation. The legal and regulatory environment can also affect the risk profile, with implications for oversight.
- To have a better understanding of the risk factors of the interlinking arrangement and the oversight expectations, a gap analysis to identify the compatibility of the interlinked systems from a technical and operational standpoint might be useful. It may also help to identify any significant differences in the legal, governance and oversight frameworks of the involved jurisdictions during the design phase.

### 3.8 Consideration 8: Oversight expectations

***Overseers consider clarity and consistency on the oversight expectations for the interlinking arrangement to be crucial to promote the efficiency and safety of the FPS interlinking arrangement.***

- Stakeholders indicated that clarity and consistency on the oversight expectations for the interlinking arrangement was crucial to promote the efficiency and safety of the FPS interlinking arrangement. Harmonised oversight expectations with respect to the interlinking arrangement could bring several benefits, eg by providing clarity and a common level playing field to the governance bodies involved in the interlinking of FPS and by reassuring the overseers of the participating FPS that the interlinking arrangement is likewise effectively overseen.
- The PFMI address material risks faced by systemically important payment systems and during stakeholder discussions the Principles were often referenced as a possible basis for common oversight expectations for an interlinking arrangement, even if the arrangement is not considered to be systemically important. Systemically important payment systems are expected to observe 18 out of the 24 principles. While most FPS have not been designated as systemically important, overseers in some jurisdictions already expect prominent retail payments systems (such as FPS), or even payment instruments, schemes and arrangements, to comply with a subset of the PFMI (in line with the consideration above on proportionality).

### 3.9 Consideration 9: Oversight cooperation

***Some degree of cooperation among overseers of the FPS participating in an interlinking arrangement can be necessary for overseers when fulfilling their respective mandates. The form, format and scope of cooperation can vary considerably and be tailored to different circumstances.***

- International cooperation among overseers of an interlinking arrangement can take a variety of forms. The format, degree of formalisation, and intensity of cooperation often depend on a number of considerations, such as the nature and scope of each authority's oversight responsibilities, the maturity and operational design of the arrangement, and the systemic importance of the interlinked system and its risk profile. These factors can result in relevant authorities developing a formal cooperative arrangement or, in other cases, prompt relevant central banks to cooperate with each other on a voluntary basis. These factors can evolve over time, which may lead authorities to consider whether

and how the cooperative arrangement might need to be adapted to reflect changing circumstances.<sup>9</sup> Information-sharing between relevant authorities could be beneficial to ensure consistent messaging to the FPS operators and to avoid duplication of efforts and reduce the burden on both the authorities and FPS operators.

- The format of cooperation can vary and could include informal arrangements and ad hoc communication to consideration of entering into memorandums of understanding (MoUs), protocols, or other documentation to serve as a formal arrangement governing the cooperation.
- The number of the relevant authorities involved in the FPS interlinking cooperative arrangement, the design of the interlinking arrangement (eg bilateral versus single access point), and the function of the interlinked component might affect the level of cooperation and interaction.
- Finally, the scope of cooperation also can vary. For example, cooperation in the case of a bilateral interlinking arrangement is sometimes seen as relevant only for the shared technical platform and risks specific to the link. Other aspects of the arrangement could be relevant for the domestic overseers only and fall out of scope for cooperation. A motivation for this targeted scope for cooperation may be to not unintentionally create additional oversight expectations on domestic systems beyond what is required by the domestic overseers.

### 3.10 Consideration 10: Interaction between governance and oversight

***The involvement of overseers during the design and implementation of an interlinking arrangement can contribute to the proper design of the governance arrangement and improve its alignment with other relevant oversight expectations. Both management and overseers may also benefit from open lines of communication for day-to-day management.***

- Overseers can be involved during the design and implementation of an arrangement's governance to ensure that it will be effective in allowing the arrangement to meet oversight expectations. The early involvement of overseers was viewed by some stakeholders as critical to an arrangement's successful establishment, for building trust and confidence in the arrangement but also to prevent design choices being made that may be inconsistent with overseer expectations.
- The relationship of governance arrangements with the oversight of interlinking arrangements can take a variety of forms. For example, a bilateral link arrangement could function well with only a limited degree of joint governance and with most of the responsibilities lying with the individual linked systems. In cases of a shared platform, there may be a need for a separate governance arrangement and possibly a cooperative oversight arrangement so that each of the participating central banks involved is responsible for the oversight of the interlinking arrangement (this may include MoUs on information-sharing and incident handling).
- While overseers are not involved in day-to-day management decisions, open lines of communication between overseers and management can be very useful for both sides, especially in a crisis. Establishing a culture of open communication can help management better understand overseer expectations and overseers better understand the context of management decisions in a more real-time fashion. This may include a practice of management informally "checking in" with overseers as

<sup>9</sup> Authorities may look to Responsibility E of the PFMI when exploring and developing cooperative arrangements for interlinking arrangements that operate like a multi-currency, cross-border FMI. For arrangements that fall outside of Responsibility E (eg separate FPS with a shared technical platform), Responsibility E could still help inform authorities' approach to cooperation.

management views evolve on risk management and strategic directions, supplementing the more formal periodic reviews.

## 4. Conclusions and next steps

FPS interlinking paves the way for faster, cheaper and more inclusive cross-border payments, but only if authorities engaged in interlinking initiatives can agree on the oversight for these arrangements and FPS owners can design an efficient governance arrangement that accord with the oversight expectations. The multi-jurisdictional context of interlinking FPS and related divergences in legal frameworks, regulations and central bank policies can make agreement on governance and oversight an especially vexing challenge. Against the backdrop of a growing number of FPS seeking interlinking opportunities – and confronting these challenges directly – stakeholders concluded that the time was ripe to seek considered international expert judgments on these topics.

This interim report to the G20 is a first step in this direction. It presents the considerations from a series of workshops held by a CPMI workstream with relevant stakeholders. These events included, most prominently, a senior-level July 2023 G20 workshop on this topic. The 10 considerations discussed in this report cover a range of governance and oversight topics, generally categorised as those related to initial conditions for effective governance (Considerations 1–2), governance design considerations and priorities (Considerations 3–6) and oversight (Considerations 7–10).

While this is an interim report, the considerations in this report could be informative in their own right for practitioners and authorities exploring the governance and oversight aspects on FPS interlinking. The CPMI intends to use this report as a basis for further dialogue and engagement with stakeholders, contributing to the CPMI's objective of delivering a final report to the G20 in 2024. As such the CPMI is seeking further stakeholder input in writing to a number of questions (as laid out in Box 3). The CPMI will further engage with stakeholders and may follow up with respondents on a bilateral basis or in the form of workshops to keep up the momentum and continue benefiting from stakeholder insights.

### Box 3

#### Key questions for stakeholder feedback

Interested parties are asked to provide their views on governance and oversight of interlinking arrangements in responding to the questions below. Stakeholders are welcome to focus on certain questions, rather than responding to all of them. Questions 12 – 15 on oversight are directed to central banks. Responses could address any of the following questions:

##### *General questions (directed to all stakeholders)*

1. What are your views on the working definition of governance laid out in this report?
2. Do you think that some specific features of governance should be prioritised and if so, which ones? What would be the basic/simple requirements for a resilient governance arrangement to be adopted by an interlinking arrangement?
3. Can existing governance or oversight frameworks and/or arrangements be leveraged for FPS interlinking? Do you think that different FPS interlinking models should be subject to different governance or oversight frameworks? Please explain.
4. Are the 10 considerations learnt from the interaction with stakeholders comprehensive? Is anything important missing or not properly addressed?



5. Is there any further guidance (beyond those listed in Annex 1) that would support safe and efficient FPS interlinking arrangements?

*Questions on single considerations (directed to all stakeholders)*

6. Consideration 1. To what extent is the alignment regarding strategic and economic policy priorities among the involved jurisdictions a pre-condition for the design of an interlinking arrangement's governance?
7. Consideration 2. What is the best way to identify and define a shared long-term vision in terms of objectives and guiding principles (inclusivity, neutrality, agility etc) of an FPS interlinking arrangement?
8. Consideration 3. Do you agree that two key design choices in the governance of an FPS interlinking arrangement are the ownership structure and the applicable legal framework? Are there others?
9. Consideration 4. How can the governance of the interlinking arrangement ensure flexibility, scalability and openness to cope with structural changes, such as new corridors/services or changes in ownership?
10. Consideration 5. What are the most important ways in which the governance can help make the FPS interlinking arrangement commercially viable/sustainable?
11. Consideration 6. What governance mechanisms can FPS interlinking arrangements adopt to involve stakeholders and appropriately consider their views in the decision-making process without adversely affecting its agility?

*Questions on single considerations (directed to central banks)*

12. Consideration 7. What are the most relevant factors to assess the risk profile of such an arrangement (eg type of services, number of jurisdictions, technical complexity)? How can the oversight framework be designed in order to offer sufficient flexibility, avoiding a one-size-fits all approach?
13. Consideration 8. How can the boundaries of the oversight expectations of the interlinking arrangement be set (ie distinct from oversight on interlinked systems)? How can proportionality be ensured?
14. Consideration 9. How can cooperation among overseers be implemented? How can it vary by form, degree of formalisation and intensity?
15. Consideration 10. Do you see any challenges if overseers are being involved during the design and implementation phase of an arrangement's governance? If so, which ones?

All submissions should be in English and ideally not exceed 10 pages. Each submission should clearly mention the question(s) addressed, as well as the name and email address of a contact person for inquiries. All responses will be shared with the CPMI and the workstream on governance and oversight. They will inform the final report on governance and oversight that the CPMI plans to finalise in 2024. Responses will also be published on the CPMI's website. Commercial or other sensitive information should not be included in the submissions, or may be included, with redactions for publication clearly noted. Parties wishing to engage with the CPMI should email their responses to [cpmi@bis.org](mailto:cpmi@bis.org) with "FPS interlinking" in the subject line by Wednesday 13 December 2023.

## References

Committee on Payments and Market Infrastructures (CPMI) (2022): Interlinking payment systems and the role of application programming interfaces: a framework for cross-border payments, Report to the G20, July.

——— (2019): Responsibility E: A compilation of authorities' experience with cooperation, December.

Committee on Payment and Settlement Systems<sup>10</sup> (2005): Central bank oversight of payment and settlement systems, May.

Committee on Payment and Settlement Systems and International Organization of Securities Commissions (2012): Principles for financial market infrastructures, April.

Committee on Payments and Market Infrastructures (CPMI), BIS Innovation Hub, International Monetary Fund and World Bank (2023): Exploring multilateral platforms for cross-border payments, January.

United Nations Capital Development Fund (UNCDF) (2023): *Policymakers' handbook on remittance enabling cross-border payment systems and linkages*, forthcoming.

<sup>10</sup> The Committee on Payment and Settlement Systems (CPSS) changed its name to Committee on Payments and Market Infrastructures in September 2014. References to reports published before that date use the Committee's old name.

## Annex 1: Existing guidance related to interlinking arrangements

In 2022, the CPMI published a report that provides a framework to help payment system operators and authorities to understand and evaluate the benefits, challenges and risks of interlinking arrangements (see Box 1). This framework and other existing general standards and guidelines for payment systems provide a basis for thinking about the governance and oversight issues raised by interlinking arrangements, even if none of these publications focus specifically on these topics per se.

The *Principles for financial market infrastructures* (PFMI) (CPSS-IOSCO (2012)) include many areas of relevance for interlinking arrangements. These include Principle 2 (Governance) and Responsibility E (Cooperation with other authorities) but also many other principles (eg legal, credit, liquidity and operational risks, settlement finality, money settlements, default management and access). Finally, Principle 20 on financial market infrastructure (FMI) links could also be considered, even if this principle does not relate directly to payment systems.

Another reference is the *Guidelines for the Successful Regional Integration of Financial Infrastructures*. The guidelines attempt to provide a practical framework or playbook for stakeholders of regional financial infrastructure integration initiatives. They are based on considerations learned from practitioners with direct experience in regional and cross-regional integration projects, and cover planning, design, implementation and sustainability. These guidelines do not provide detailed guidance on governance, and they reference the PFMI on risk management topics.

In 2017, the International Telecommunication Union (ITU) issued a technical report on oversight and interoperability. Compiled under the leadership of the World Bank, the report builds on the PFMI and provides policy advice, recommendations and indications to country authorities, payment system operators and service providers. A companion report on "Payment System Interoperability and Oversight: The International Dimension" outlines complementary principles for the oversight of interoperability between internationally linked or shared payment system infrastructures.

In 2022, the Asia-Pacific Economic Cooperation (APEC) finance ministers discussed policy considerations for developing cross-border payments and remittances, including aspects such as governance and implementation considerations of FPS links. The paper consists of recommendations drawn from the experience of APEC economies in linking payment systems.

The World Bank has closely monitored the development of FPS by central banks and private players across the globe, and it has designed a policy toolkit aimed at guiding countries and regions on alternatives and models that might be helpful when making policy and implementation choices in planning an FPS. The toolkit comprises the main report case studies of countries that have already implemented fast payments, together with a set of short notes on specific technical topics related to fast payments, such as on FPS interoperability.

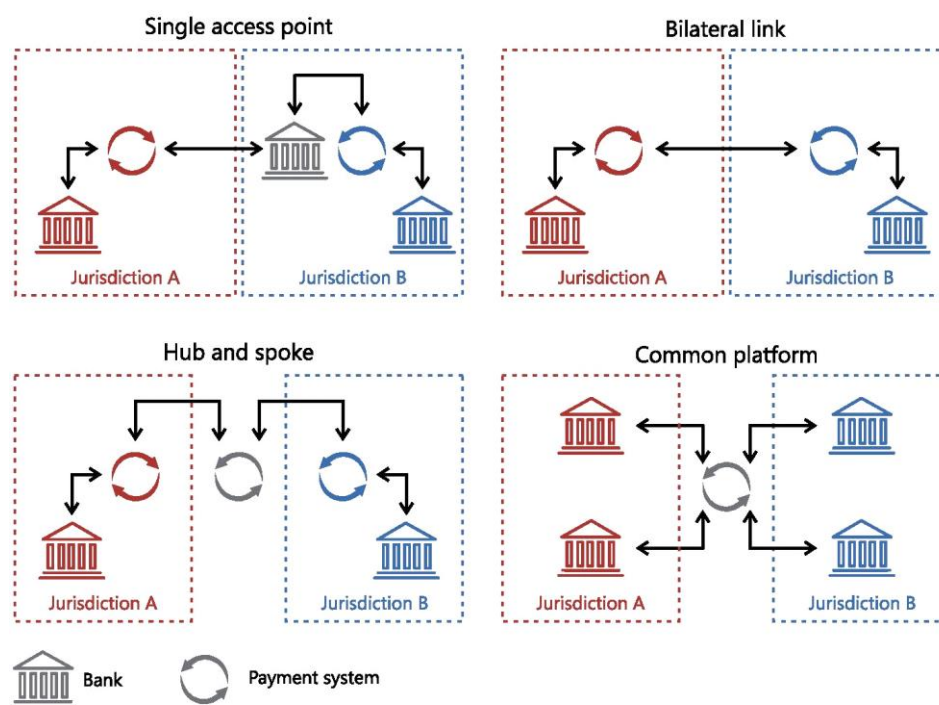
The United Nations Capital Development Fund (UNCDF) is finalising a Handbook to provide comprehensive guidance designed for use by policymakers involved in cross-border payment model implementation in either a direct or an enabling role. The handbook will present considerations and insights from cross-border payment model implementations and as well as implications for policymakers, with a focus on migrant remittances.

## Annex 2: Stylised models of interlinking arrangements

The CPMI identified several conceptually different models of interlinking arrangements (see Graph A1) (CPMI (2022)). Since the single access point models bears a resemblance to correspondent banking arrangements, which are out of scope, the focus of the present report is on the bilateral link, hub and spoke and the common platform model.

Overview of four stylised models of interlinking arrangements

Graph A1



Source: CPMI (2022).

- **Single access point model:** Under a single access point model, participants in one (domestic) payment system have access to a foreign system through a single “gateway” entity that directly participates in the foreign system (upper left-hand panel). This model bears a resemblance to correspondent banking arrangements but differs in that it ensures access to the foreign systems based on common rules, service level agreements (SLAs) and access criteria. Despite simplicity and low cost, the single access point has scalability limitations.

One example of this model is the Hong Kong’s RMB CHATS links with Mainland China’s payment systems.

- **Bilateral link model:** Two payment systems can also be directly connected to each other (upper right-hand panel). This model typically enables participants in one system to directly reach all direct participants in the other (foreign) payment system instead of just the single gateway entity. Among other things, a bilateral link requires efficient mechanisms for accounting, clearing and settling inter-system positions between interlinked systems, and this process is usually done through nostro/vostro accounts that linked systems hold with each other. Establishing a bilateral link can be relatively cost-effective and serve as an interim step towards a more centralised approach. However, a multitude of bilateral links results in complex processes, as multiple interoperability arrangements must be maintained.

An example of a bilateral link model is Directo a México, which was set up in 2005 between the United States and Mexico and links the Federal Reserve's automated clearing house (FedACH) with the Mexican RTGS system (SPEI). Other examples are the links between the FPS of Singapore (PayNow) and Thailand (Promptpay) set up in 2021, Singapore (PayNow) and India (UPI) set up in February 2023, as well as Hong Kong (FPS) and Thailand (PromptPay) to be launched by the end of 2023.

- Hub-and-spoke model: A hub-and-spoke model is a multilateral interlinking arrangement capable of linking more than two systems (lower left-hand panel). In this model, the inter-system accounting and clearing are done at a common intermediary (the hub). In some jurisdictions, the hub itself could be qualified as a multilateral payment system, with the connected payment systems as participants. The hub can effect settlement on its own books or use a settlement agent. While it is assumed that the (domestic) payment systems connected to the hub are bound by the hub's rules, this is not necessarily the case for PSPs connected via a (domestic) payment system to the hub. The hub-and-spoke model is scalable, since with one connection to the hub a payment system can reach all other connected (foreign) systems.

An example of this model is the Regional Payment and Settlement System (REPSS) of the Common Market for Eastern and Southern Africa. REPSS has a common clearing house in the middle and the Central Bank of Mauritius acts as a common settlement agent, which debits and credits the accounts of the participating central banks on its books.

- Common platform model: In a common platform model, PSPs from one jurisdiction can directly reach PSPs in other jurisdictions through one common payment system, which runs on a single integrated technical platform. While the common platform model can lead to the same results as interlinking, it is in a strict sense not interlinking since PSPs are participating in one and the same payment system. As a common platform requires the harmonisation of many attributes, it is technically the most complex model, since it requires a fully fledged payment system to be set up (lower right-hand panel).

SADC-RTGS is an example of this model. This system is hosted by the South African Reserve Bank (SARB) and runs on the same infrastructure as the SARB's domestic RTGS system (SAMOS). The system currently settles payments only in ZAR and its participants (ie banks from different SADC jurisdictions) have ZAR accounts directly in the SADC-RTGS.

## Annex 3: Composition of CPMI Governance and Oversight Workstream

### Chair

Bank of Italy	Claudio Impenna
---------------	-----------------

### Members (CPMI)

Bank of Canada	Umar Faruqui
People's Bank of China	Changchun Mu Yuan Lyu
European Central Bank	Patrick Papsdorf
Bank of France	Claudine Hurman Marie-Aline Vives
Hong Kong Monetary Authority	Christine Wong
Reserve Bank of India	Margaret Rawal
Bank of Italy	Giuseppe Grande Luca Arciero
De Nederlandsche Bank	Lars J Groenhuijse
Monetary Authority of Singapore	Tze Hon Lau Qian Yi Ooi [until September 2023] Nelson Chua [since September 2023]
Bank of Spain	Ignacio Becerril
Swiss National Bank	Basil Guggenheim [since August 2023]
Board of Governors of the Federal Reserve System	Anjana Ravi
Federal Reserve Bank of New York	John Rutigliano Heidy Medina

### Members and observers (international organisations and non-CPMI central banks)

Bank of Thailand	Budsakorn Teerapunyachai Naphongthawat Phothikit
Central Bank of the Dominican Republic	Fabiola Herrera
Bank for International Settlements Innovation Hub	Kah Kit Yip
International Monetary Fund	Agnija Jekabsone
World Bank Group	Gynedi Srinivas



**Secretariat**

CPMI Secretariat

Mark Choi  
Thomas Lammer  
Antonio Perrella

The work has also benefited from the contributions and support provided by Biagio Bossone (BIS technical advisor), Tara Rice and Takeshi Shirakami (CPMI Secretariat), Tanatas Bumpenboon (Bank of Thailand), Marc Glowka (Deutsche Bundesbank), Nathan Crespy (Bank of France) and Angel Lam (HKMA).





Bank for International Settlements (BIS)

ISBN (online) 978-92-9259-695-8