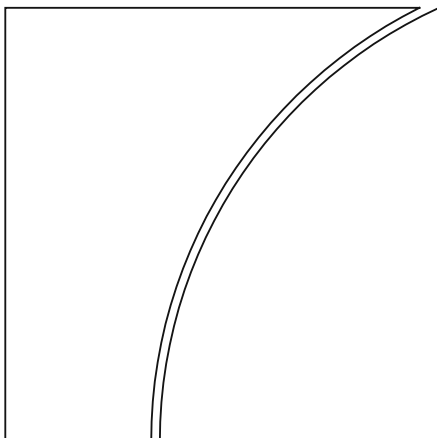


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A discussion paper on  
client clearing: access and  
portability

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**OICU-IOSCO**

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## Executive summary

Firms who are not direct participants of a central counterparty (CCP) must rely on having their trades **cleared** by an intermediary, a client clearing service provider (CCSP), who is a direct participant of the CCP. Firms who are not able to become, or choose not to become, a direct participant of a CCP are generally known as **clients**, and the term **client clearing** encompasses the activities and the services that enable clients' access to CCPs.<sup>1</sup>

This paper is a discussion paper on issues concerning client clearing. In particular, this paper considers issues concerning access to CCPs and effective porting practices. The paper does not intend to provide guidance on the *Principles for financial market infrastructures* (PFMI)<sup>2</sup> but only to increase the common understanding on new access models and effective porting practices and identify potential issues for possible follow-up work from the industry. The analysis elaborates on information collected through: (i) an industry workshop in July 2019; (ii) a survey addressed to CCPs, CCSPs and clients in late 2019; and (iii) targeted interviews in the autumn of 2020.

The purpose of this paper is to: (1) develop knowledge and understanding regarding new access models by which entities that historically have participated indirectly as "clients" could directly access CCP services; (2) develop knowledge and understanding of current porting processes in place at CCPs; (3) examine and analyse possible solutions to facilitate access and portability arrangements; (4) consider in particular the potential benefits, risks and challenges that these new possible solutions may bring with respect to access (Principle 18 of the PFMI), tiering (Principle 19) and portability (Principle 14); and (5) elicit comments and feedback from a broad range of interested stakeholders.

Section 1 briefly explains the reasons why the work was conducted and the objectives of the work.

Section 2 describes "direct" and "sponsored" access models that allow entities that have historically participated indirectly as clients to directly access CCP services. These new models introduce new challenges, incentives and risk distribution among different kind of participants. They also introduce new risks (eg the risks related to the "sponsor" default), with the availability and use of these types of models varying significantly in different segments of cleared markets. These models, for instance, are not used widely for the derivatives markets.

Section 3 outlines potentially effective porting practices, focusing in particular on alternative CCSP arrangements and game plans. The implications of legal frameworks and account structures, which vary in availability by jurisdiction, are also considered. Overall, two effective practices consistently appeared to support successful porting in the event of a default: (i) pre-emptively identifying potential alternate CCSPs (by either the client or the CCP's analysis); and (ii) use of account structures that facilitate fully margined client positions. It then proposes possible effective practices concerning three key elements of a successful CCP porting framework – communication, coordination, and harmonisation. In particular, it sets forth issues for CCPs' consideration when developing a porting protocol and identifies a series of suggested next steps for the industry with regard to porting practices.

Comments and feedback are welcome by 24 January 2022. Section 4 sets forth a series of questions for feedback.

<sup>1</sup> Principle 14 of the *Principles for financial market infrastructures* (PFMI) refers to the clearing members of a CCP as "participants", while clients of the clearing members are referred to as "participants' customers" in Principle 14 and "indirect participants" in Principle 19. To avoid confusion in this discussion paper and reflect changing relationships, the term "CCSP" is generally used rather than participant and the term "client" is used rather than participants' customer.

<sup>2</sup> CPSS-IOSCO (2012).

## 1. Introduction

In 2009, the G20 Leaders made a commitment to ensure that all standardised over-the-counter (OTC) derivatives contracts are cleared through CCPs. Increased use of central clearing generally, and with a particular focus on derivatives since the 2009 G20 commitment, is intended to enhance financial stability by simplifying the network of counterparty exposures between financial institutions and reducing the aggregate size of these exposures through multilateral netting by a CCP.

In light of the introduction of clearing mandates in some jurisdictions, CCPs have become increasingly critical components in the financial system. In 2018, the Derivatives Assessment Team (the DAT Report)<sup>3</sup> confirmed that the provision of client clearing services was concentrated in a relatively small number of bank-affiliated clearing firms.

Clients are not typically direct clearing participants but rather require access to clearing through clearing participants. As a result, access to client clearing is a critical issue for the success of the G20 reforms, especially in jurisdictions where the clearing obligation also applies to clients. Principle 19 of the PFMI states that financial market infrastructures (FMIs), including CCPs, “should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements”. Moreover, Principle 14 of the PFMI states: “a CCP should have rules and procedures that enable the segregation and portability of a participant’s customers and the collateral provided to the CCP with respect to these positions”.

Against this background, CPMI and IOSCO decided to analyse whether and to what extent concentration in client clearing creates issues of concern specifically in relation to client access. In particular, the CPMI-IOSCO Steering Group mandated the Policy Steering Group (PSG) to: (1) develop knowledge and understanding regarding new access models by which entities (that historically have participated indirectly as “clients”) could directly access CCP services; (2) develop knowledge and understanding of current porting processes in place at CCPs; (3) examine and analyse possible solutions to facilitate access and portability arrangements; and (4) consider the potential benefits, risks and challenges that new access models and potential solutions may bring with respect to access.<sup>4</sup>

The PSG gathered information through an industry workshop in July 2019 and a survey addressed to CCPs, CCSPs and clients in late 2019 as well as follow-up work through targeted interviews in the autumn of 2020.

Section 3 provides an overview of direct and sponsored access models based on the results of the survey and targeted interviews described above; considers challenges related to direct and sponsored access models; recent uptake and activity; and the impact of direct and sponsored access models on access.

Section 4 describes an overview of potentially effective porting practices, drawing attention to communication, coordination and harmonisation as fundamental principles for successful porting. It also describes notable obstacles to address when developing a porting protocol and suggests next steps for industry consideration. There is significant heterogeneity in the business models of CCPs and CCSPs, as well as in regulations across jurisdictions, so not all of the suggestions are equally applicable.

<sup>3</sup> See FSB, *Incentives to centrally clear over-the-counter (OTC) derivatives*, November 2018, [www.fsb.org/2018/11/incentives-to-centrally-clear-over-the-counter-otc-derivatives-2/](http://www.fsb.org/2018/11/incentives-to-centrally-clear-over-the-counter-otc-derivatives-2/).

<sup>4</sup> Principle 18 of the PFMI provides that FMIs, including CCPs “should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access”. Key consideration 1 notes that “[CCPs] should allow for fair and open access to its services, including by direct and, where relevant, indirect direct participants and other FMIs, based on reasonable risk-related participation requirements”.

## 2. Access

The PSG work drew on the conclusions of the DAT Report that included several findings regarding client access to clearing services and restrictions on activity.

The most common access issue reported by the DAT was the lower degree of access to central clearing for some categories of clients. Restrictions on client activity were imposed by over 90% of the CCSPs surveyed, with low turnover clients and clients with directional portfolios being most affected by restrictions on their cleared activity. According to the DAT Report, these clients are most likely to have insufficient transaction flow to cover the cost of providing clearing services. Clients were also reported to be off-boarded because of constraints imposed by the Basel III capital framework.

The DAT also found the minimum clearing fees increased between 2012 and 2017, with such fees designed to cover onboarding, know-your-client (KYC) and regulatory capital costs. Such fees are a significant factor in the cost of clearing and the impact on the relative incentives to clear.

The DAT found that the business of client clearing OTC derivatives was in a state of transformation. It noted that the risk management requirements of OTC derivatives client clearing is “substantially more burdensome” as compared to futures client clearing, requiring significantly more trading capacity to manage a client default.<sup>5</sup> Client clearing services are provided even though internal targets for returns on equity are not met, suggesting that those firms continuing to provide services may be doing so in order to provide full client services, considering the reputational impact of exiting OTC derivatives client clearing and the difficulty of reversing a decision to exit. The data show some firms have exited the business, with limited profitability likely to have been a factor.

The DAT concluded that the potential issues relating to client access to central clearing and client incentives to clear may be exacerbated by the concentration in CCSPs. In the DAT surveys, many clients reported being able to access clearing through a single CCSP, as backup arrangements were economically unviable or unavailable. Moreover, many clients were concerned they would not be ported successfully in the event of a CCSP default, which would leave them without clearing access. New direct access models were reported as a possible solution by CCPs, but the feasibility of this option remains unclear and issues on portability are still to be explored.

Ultimately, the DAT suggested further research in this area to provide additional insight.

### 2.1 Direct and sponsored access models in brief

Direct and sponsored access models were designed to address the perceived shortcomings of “traditional” client clearing. According to the survey analysis and industry outreach, CCPs developed these models mainly to provide solutions to the following market participants:

1. Buy-side entities (typically pension funds, regulated funds and insurance companies) which find the current costs of client clearing excessive and attribute them, at least partly, to passed-through regulatory/capital costs from client clearing service providers. These buy-side entities are also barred from becoming direct clearing participants themselves, generally due to legal prohibitions on loss mutualisation.
2. Client clearing service providers, which may consider that client clearing is not a very profitable business given its significant balance-sheet costs, and look for other, more capital-efficient ways to intermediate demand for clearing.

<sup>5</sup> Other key differentiating factors noted by the DAT include significantly longer tenors, larger notional size, lower trade count, higher capital requirements, larger margin flows, more sophisticated risk management and operational requirements.

In order to address these issues, direct and sponsored access models essentially transfer some, but not all, of the responsibilities of “traditional” client clearing service providers (ie banks, investment firms and other established clearing brokers) to the buy-side, turning the latter into a new category of direct clearing participant with its own specific set of rights and obligations.

While new access models were designed to improve the access to CCPs by some categories of clients, some barriers remain. In particular, the models seem to be mostly designed for large clients, partly due to their operational and liquidity requirements. Medium/small clients are not addressed by the models, even though they are the entities that face the most difficulties in finding CCSPs (which is a particular concern in light of the limited profitability in providing clearing services to such medium/small clients). Moreover, medium/small clients constitute the majority of market participants seeking clearing services.

In addition, the availability and use of these types of models varies significantly in different segments of cleared markets. Based upon survey results and industry outreach, the new models seem to have gained the most traction in the repo markets. The recent Covid-19 crisis was mentioned as an additional driver for the onboarding of new clients for these models for some surveyed CCPs. In other markets, in particular in derivatives markets, both the availability of models and their success seem to be quite limited.

For the derivatives markets, while new access models seem to address the regulatory constraints of those client categories which are not allowed to contribute to mutualised loss sharing arrangements, they do not solve the problem of those potential participants that have operational and investment constraints for the active management of liquidity needed for meeting variation margin and intraday margin calls.

## 2.2 Challenges related to direct and sponsored access models

### 2.2.1 Common feature: shifting responsibility for default or clearing fund contribution

All direct and sponsored access models share one key feature: they shift the responsibility for contributing to the CCP’s default or clearing fund. In the majority of cases, this obligation is fulfilled by a “sponsor”,<sup>6</sup> which guarantees that the risk exposure created by the transactions of the new, direct participants to the CCP is covered. However, in a few particular cases, the CCP waives the default fund contribution and it is not paid by anyone. In these cases, some CCPs justify the exemption because of the perceived low credit risk of the new, direct participants (eg public pension funds). Other CCPs collect a multiplied margin requirement that is equivalent to either full collateralisation, or to a figure that accounts for both margin and the default fund contributions of direct clearing members.

### 2.2.2 New models, new direct clearing participants, new incentives

Direct and sponsored access models bring new types of entities into the clearing membership of CCPs. Such models have the potential to address concentration issues that arise with respect to client clearing and may also encourage more direct participation in the CCP.<sup>7</sup>

Notwithstanding the above, these access models have the potential to diversify the risk profile of the direct clearing participant base by introducing new types of direct participants (eg regulated funds, pension funds and insurance companies). These new profiles are subject to different constraints than those

<sup>6</sup> *Sponsors* can also be known by other names, eg *clearing agents*.

<sup>7</sup> Explanatory note 3.19.11 of the PFMI provides that “Direct participation in an FMI usually provides a number of benefits, some of which may not be available to indirect participants. “[w]here an indirect participant accounts for a large proportion of the transactions processed by an FMI, it may be appropriate to encourage direct participation.” A CCP may consider developing tailor-made access models that reflect the risk profile of the activity.

which apply to other direct clearing participants, including legal (eg responsibilities for managing a regulated fund), liquidity (eg pension funds limitations in cash holdings) and solvency (eg sectoral regulation) restrictions. A CCP will need to identify, monitor and manage the associated risks.<sup>8</sup> In addition, these “new” participants do not participate in the same way in risk-reducing mechanisms at the CCP level since a common feature is shifting responsibility for the default or clearing fund to the sponsor. It is therefore important that CCPs assess the implications of these models in order to mitigate the potential for unintended consequences that could, for example, hamper the CCP’s ability to manage a default.

To address the particular situations of direct and sponsored members, CCPs generally implement safeguards to limit their activity and avoid risk transmission to the rest of the member base. For instance, at one CCP, while the holder of a licence to use its direct and sponsored access model is exempted from initial margin and default fund contributions, it is subject to novation criteria that ensures that it is never a net cash borrower when all payment obligations are aggregated. At another CCP, the multiplier discussed in 2.2.1 above applies to margin in light of the lack of a default fund contribution and increases margin by an amount equivalent to the default fund contributions of other direct clearing participants.

In addition, some CCPs implement specific features to incentivise the sponsor to closely monitor the activity of its sponsored participants. For example, one CCP requires the sponsor (“agent member”) to provide two additional resources: an “agent buffer” and an “agent resource contribution”. The agent resource contribution is equal to the default fund contributions that would otherwise be required of its two largest sponsored participants in addition to paying the default fund contribution on behalf of the sponsored participant.<sup>9</sup>

### 2.2.3 The issue of a potential sponsor default

As sponsored access models grow and attract additional participation, there is a possibility that a new kind of concentration will appear in the future if the number of “sponsors” remains limited. CCPs will need to monitor and manage the risks associated with concentration of sponsored members per sponsor, building on their existing risk management framework for client clearing.<sup>10</sup>

The variety of CCPs’ risk management frameworks is noteworthy regarding the consequences of the default of a sponsor on one or several of its sponsored participants. Some CCPs require sponsored participants to designate a “backup” sponsor participant *ex ante*. This backup is often only temporary, however, as its scope of responsibilities is generally smaller than its predecessor. For instance, the backup will only fulfil a “paying agent” role and will not be liable for any cash calls related to the sponsored participants’ existing positions. CCPs explain that commercial arrangements between sponsors and their sponsored participants typically take several months to put in place and that pricing the potential liability of the backup is too complicated to shape an acceptable commercial contract for both parties in the necessary time frame.

Therefore, if a sponsor defaults, its sponsored participants will enter a period where they will have to quickly establish a contractual relationship with a new sponsor. The maximum permitted duration of this period fluctuates between CCPs from as short as one day to ten days and may be cumulated with a subsequent liquidation period which can be extended to 30 days. During this period, although they are not certain on this point, buy-side entities surveyed generally expect that they would be able to continue paying margins to the CCP, provided they have the necessary operational arrangements. CCP rules are generally in accordance with this understanding and such rules are tested regularly. In this period, it is also

<sup>8</sup> Principle 3, Key consideration 1.

<sup>9</sup> This example applies to another CCP’s sponsored model (LCH SA), which was being developed for regulatory approval at the time of the survey.

<sup>10</sup> For example, paragraph 3.19.9 of the PFMI states that “an FMI should also consider establishing concentration limits on exposures to indirect participants, where appropriate”. A CCP may need to consider potential (concentration) impacts in case of default of a sponsor that was sponsoring a number of sponsored participants.



expected that any waterfall contribution (eg cash call) related to the sponsored participants' positions could be paid by existing resources (eg buffers from the defaulted sponsor). However, if these resources would prove insufficient, the sponsored participant(s) would likely be put into technical default, even while being in a sound financial condition. To address this potential chain reaction, some CCPs impose rules that further restrict sponsored participants' activities while they are "sponsorless". For instance, some CCPs only allow risk-reducing transactions. Another CCP retains discretion over liquidating the sponsored members' positions or letting them elapse.

In the case of repos, which represent the large majority of direct and sponsored access models, the sponsored participant that is affected by the default of its sponsor is still able to return to the bilateral/uncleared market, since repos are not subject to a clearing obligation. This would be a highly likely outcome in case of a major sponsor default and was mentioned by one CCP as a potential backstop. However, by definition, this fall-back solution would not be available for derivatives subject to mandatory clearing.

Future challenges for these emerging models may revolve around testing default procedures. Key consideration 4 of Principle 13 of the PFMI states that a CCP "should involve its participants and other stakeholders in the testing and review of the [CCP]'s default procedures". Since CCPs appear to have discretion with regard to the default procedures for sponsored models, "periodic testing and review" is "important to help the [CCP] and its participants understand fully the procedures and to identify any lack of clarity in, or discretion allowed by, the rules and procedures. [...] This is particularly important where [...] the default procedures have never been tested by an actual default".<sup>11</sup>

### 2.3 Recent uptake/activity of models

Responses are varied in terms of the recent activity and uptake of these models across CCPs. One CCP reported an increase in the use of its Sponsored Clearing service for the buy-side for its repo service, which it speculated could be due to the Covid-19 crisis. During the same period, another CCP saw a decrease in onboarding in relation to its novel access models, but a general increase in interest for such access, particularly for clearing repo products.

In responding to the survey, another CCP noted that its sponsored access model for fixed income transactions is successful, due to balance sheet offsets that such models afford and the resulting decrease in capital charges when compared to similar activity not carried out via a CCP.

Another CCP discussed limited uptake of its sponsored access model, which it attributes to the current heavy usage by clients of the individually segregated margin-flow co-mingled account (ISOC) structure, and the fact that direct clearing participants are only obliged to provide one form of individually segregated client account. In responding to the survey, this CCP indicated that it is not aware of clients struggling to find sponsors if they wish to use the new model.

Finally, while two CCPs commented on the impact of alterations to the calculation of the leverage ratio, neither CCP is aware of changes to the attractiveness of these models that can be attributed to these alterations.

<sup>11</sup> See Explanatory Note 3.13.7 to Principle 13. See also CPMI-IOSCO, *Resilience of central counterparties (CCPs): Further guidance on the PFMI – Final report*, July 2017 paragraph 4.2.8: "The CCP should engage regularly with participants to ensure that the participants understand their potential obligations and have taken appropriate steps to ensure that they would be able to meet such obligations."

## 2.4 Impact on access

While survey responses and industry outreach indicate that new tailored direct and sponsored access models were designed by a number of CCPs to increase access to central clearing, only limited markets and types of clients are currently served by such models. Most new access models are used for the clearing of repo transactions. This is consistent with the importance of balance sheet offset benefits for sponsors in this market, as well as survey responses from clients, who indicate that they use such access mostly for clearing repo products. In general, survey results and industry outreach suggest that the provision of such access is primarily driven by client demand.

Currently, tailored direct and sponsored access models are designed for certain types of large, sophisticated clients. One potential barrier to client access is limitations that the models impose on clients' clearing activity, in addition to the limits imposed on traditional direct clearing participants. For example, at one CCP the membership for fixed income transactions is aimed at public entities which meet certain eligibility criteria, including a demonstration of sufficient and continuous activity in the jurisdiction's repo market for a minimum of three years. At another CCP, a financial institution, pension fund or investment fund entitled to clear repo transactions and OTC interest rate derivatives must fulfil all general prerequisites for a clearing licence and have sufficiently qualified staff with knowledge of clearing in order to qualify for a licence under the new clearing model. In addition, such participants are subject to certain operational and capital requirements. Holders of a licence under the model may undertake both cash-taking and cash-lending transactions but, as already mentioned, are subject to novation criteria that ensure that the holder is never a net cash borrower when all payment obligations are aggregated. In addition, applicants for a licence for securities lending must be either government or regulated financial entities, or supranational organisations. Another CCP offers a clearing membership for credit institutions with a valid banking licence and non-credit institutions with an appropriate licence issued by the central bank for the FX and securities spot markets. Trades cleared via this membership are subject to full prefunding, thereby reducing risk for the CCP. Clearing participants can opt to trade via this category voluntarily or be assigned this category by the CCP after monitoring their financial situation.

The wide variety of new access models, including their risk management procedures, respond to pragmatic and commercial objectives, but this complexity also has the potential to be a barrier to the models' use. Smaller clients may not always be able to fully understand the implications of the share of responsibilities and risks proposed. Since the offering of these models seems to be driven by client demand, it is plausible that if client demand grows, new models will spring up to meet this demand, not only in the repo markets where demand is currently, but in other markets as well. However, the demands of smaller clients may not have as much commercial influence as the demands of larger clients. Accordingly, new access models may not be a solution for increasing smaller clients' access, even with increased demand.

## 3. Porting

Upon a CCSP's default, a CCP must port or liquidate the client accounts in a short time frame; a CCP does not function as a CCSP and is not prepared to manage accounts of non-participants or associated risk exposures. While a CCP may tolerate holding a client account for a short time, if no CCSP agrees to take the client account or the client account is under margined, a CCP must liquidate the defaulting CCSP's clients' positions.

Forced liquidation is an undesirable outcome for the liquidated accounts and for the market generally. Some accounts may contain positions used to hedge the account holder's overall trading or business strategy. Liquidating these offsetting trades, but not the underlying positions or commitments, can create unwanted risk exposures. In the event that accounts contain speculative positions, forced

liquidation may, temporarily or permanently, remove a market participant who otherwise could have carried market risk at a critical time. In both cases, the liquidation could exacerbate price volatility and stress market participants. Increasing the probability of porting therefore minimises the costs and potential market disruption associated with closing positions and preserves clients' access to central clearing.

### 3.1 Potentially effective porting practices

Through survey analysis and industry outreach, two factors consistently appeared to support successful porting in the event of a default: pre-emptively identifying potential alternate CCSPs (by either the client or the CCP's analysis), and account structures that facilitate fully margined client positions.

#### 3.1.1 Alternate CCSPs for clients of defaulted CCSPs

Two approaches CCPs have implemented are to either rely on a client to identify **an alternate CCSP**, and/or for the CCP to maintain its own analysis to identify those CCSPs most likely to accept certain clients of a potential defaulting CCSP (**a "game plan"**). For both approaches, some jurisdictions have **legal frameworks** that facilitate porting, subject to finding transferee CCSPs promptly. Thus, the efforts of CCPs in organising transfer arrangements can be crucial to the success of porting and avoiding consequences associated with liquidating positions in a stressed market.

According to survey results and industry outreach, there are a range of factors that influence the outcome of porting in the event of a CCSP default. Product constraints, balance sheet availability and the low profitability of providing clearing services to certain clients will limit the ability of many CCSPs to receive ported clients. In fact, surveyed CCSPs overwhelmingly responded that, due to these constraints, it would be difficult for CCPs to quickly identify alternative CCSPs willing to accept all of the clients should one of the largest CCSPs default. Thus, the most important factor in successfully porting after a default is the ability to prearrange or quickly identify an alternative CCSP or CCSPs while non-defaulted clients maintain sufficient margin.

##### (i) Alternate CCSP

Alternate or backup CCSPs can help streamline CCPs' porting processes in the event of a default, and give the client more control over the porting process. Many CCPs encourage clients to identify a backup or multiple backup CCSPs. At least one CCP has imposed higher default fund requirements on CCSPs that have clients without a backup CCSP, to reflect the higher burden associated with default management. The increased cost of such CCSP arrangements without backup CCSPs incentivises CCSPs to actively consider how the CCP should address its portfolio in the event of a CCSP default. Typically, the selection of a backup CCSP indicates the client's consent to have its positions ported to the particular CCSP. Further, a CCSP that agreed to be an alternate is more likely to accept the client's positions held at a defaulting CCSP. However, the backup CCSP typically does not guarantee that it will accept any or all of the positions that need to be ported.

For larger clients, the costs of this arrangement can be minimal. Larger clients are more likely to have pre-existing relationships with multiple CCSPs for other business reasons. If a large client's CCSP defaults, the client may reasonably expect its other CCSP(s) to act as a backup and accept the client's positions from the defaulting CCSP, at least on a temporary basis.

For smaller clients with only one active CCSP relationship, the benefit of establishing and maintaining another active or backup CCSP may not offset the cost of maintaining the backup relationship. Similarly, the costs to a CCSP of establishing a backup clearing relationship with a client remain the same as if it were a primary client, although without the ongoing business revenue from active clearing activities. Thus, these arrangements may only be feasible for larger clients.

(ii) Game plan

A CCP can formulate a game plan in advance for allocating the clients of a potential defaulter to CCSPs which are likely to be willing, a practice implemented by at least one CCP. This requires a thorough understanding of the client base of each potential defaulter and of the capacity and likely willingness of other CCSPs to accept those clients. This analysis must be regularly updated. Again, there is no guarantee that the CCSP or CCSPs identified in the game plan will agree to accept any or all of the client positions, partly because actual client information cannot be shared in advance. However, the CCP can complete most of the analysis in advance, which could speed the process upon default and thus improve the probability of successful porting. When a default appears imminent and the CCSP and CCP agree that clients are likely to need to be ported, specific client information may be shared as needed to expedite the porting process, should the CCSP default.

This game plan approach is primarily focused on “bulk”, rather than individual, transfers, whereby the entire portfolio, or a portion thereof, is transferred with the CCSPs having no ability to “cherry pick.” Some CCSPs are more likely to accept less profitable smaller clients as part of a group that also contains larger more profitable clients. This approach does not rely on any single CCSP, but rather a suite of CCSPs that may be appropriate given the characteristics of the client portfolio. The CCP can transfer the portfolio to a single CCSP among those it has identified or to multiple CCSPs, depending upon the portfolio and the condition at the time of default of the alternate CCSPs. Thus, the game plan approach ultimately maintains the CCP’s flexibility as it is not dependent solely on a client’s backup CCSP agreeing to accept its positions in the default scenario. While not mutually exclusive with the backup CCSP approach described above, the bulk transfer approach may not be able to accommodate each client’s stated preference even when its preferred choice of CCSP would have accepted its account.<sup>12</sup>

Ultimately, if a CCP has the power to port clients without first obtaining consent (or implied consent, as in the case of backup designations) it does improve the odds of successful porting. The client subsequently can re-port to its desired CCSP at a later time. However, any advanced planning arrangement to facilitate bulk transfers may not be applicable in jurisdictions that require the CCP to first obtain explicit consent to transfer positions and/or collateral for certain or all account types.

(iii) Legal framework to facilitate porting

In some jurisdictions, porting of client positions and collateral may be authorised by the bankrupt CCSP’s insolvency officer and/or the court with jurisdiction over the bankrupt CCSP. Where the CCP organises a transfer of positions to one or more CCSPs, the insolvency officer would then be able to propose that transfer to the court, which could then approve the transfer. In such cases, the organisation of the transfer by the CCP would significantly improve the chances of a successful transfer, and the avoidance of a bulk liquidation and the attendant negative consequences.<sup>13</sup>

### 3.1.2 Account structures that facilitate clients maintaining fully margined positions

Some CCPs offer **account structures** that increase the chance that the account is fully margined, and therefore facilitate more efficient porting. Some CCPs also permit clients to make **direct payments and/or maintain excess collateral** to “re-margin” an account or act as a margin buffer for an account.

<sup>12</sup> Following the initial transfer, the client may establish a contractual relationship with a new CCSP and port on a business as usual (BAU) basis, rather than continue the relationship with the bulk transferee. When time is not of the essence, and the consequences of liquidation of positions are not at issue, clients may have the time to establish such longer-term relationships. This report does not intend to cover those relationships.

<sup>13</sup> The client transferred subject to an insolvency officer or court order may also choose to establish a contractual relationship with a new CCSP and port BAU, rather than continue the relationship with the bulk transferee.

(i) Account structures and margining

Many CCPs offer clients the choice to select from different types of segregated account structures, some of which increase the probability of porting. For example, an account that segregates one client's margin from other clients' margin is likely to be simple to port, increasing the likelihood that the porting will be successful.

Similarly, an account that is gross margined (but with mutualised risk) may also be simple to port. Gross margined accounts also simplify the additional capital requirement calculations for receiving CCSPs. In contrast, a client account with net margining against the CCSP's other client accounts may be more challenging to port because the positions may require more capital from the receiving CCSP due to foregone margin offsets, particularly if the positions are not ported to the same CCSP. When the client's overall margin requirement increases, the collateral being held for margin for such an account may be inadequate at its new CCSP(s). The positions are also likely to take more time for the CCSPs and the CCP to process. Gross margined accounts may also lose margin offsets if a client's positions are split between multiple CCSPs. Given the risks of increased margin that are associated with splitting client positions to multiple CCSPs under both the gross and net account structures, the highest probability of porting is associated with transfer to a single CCSP. Transfer to multiple CCSPs increases the risk that a new CCSP may refuse to accept the account.

(ii) Client consent

A CCP offering net margining may not be able to offer bulk porting due to jurisdictional requirements to receive client consent for porting. In such jurisdictions, a CCP would most certainly liquidate omnibus client accounts due to the difficulty of achieving consensus consent in the requisite time frame<sup>14</sup>.

As a way to facilitate porting, one CCP recommended regulatory changes to permit: (1) an abridged or negative consent process which deems consent as given unless the client objects; or (2) advance consent for transferring to one or more backup CCSPs.<sup>15</sup> This CCP proposed that a revised client consent protocol could more easily accommodate a "bulk" port arrangement, at least in some situations where the alternative may be to liquidate the client accounts. Clients could then move to another CCSP or liquidate after the fact, if desired. For those CCPs opting to use a net margin model, a realistic protocol regarding the timely contacting of the CCSP's clients and permitting a client to provide collateral to the CCP may increase the probability of porting.

(iii) Direct payments and/or excess collateral

Some CCPs permit clients to make direct payments. A client that makes a direct payment to a CCP is likely to extend the time available to be ported, subject to jurisdictional regulatory constraints. This direct payment arrangement would require, at a minimum, that the CCP have contact information for the client. It is possible that the defaulted CCSP would be able to assist, but this direct payment route may be more successful if established prior to the CCSP default. Based on the CCPs surveyed, such arrangements have not been tested in an actual default.<sup>16</sup>

Similarly, when a CCP is able to rely on excess collateral maintained by clients in individually segregated accounts, it may be able to extend the time to port a client account, subject to jurisdictional restraints. The holding of excess collateral increases the likelihood that the account will be fully margined or near fully margined following a CCSP default, even if the account value drops. Holding excess collateral

<sup>14</sup> While CCPs and CCSPs often have some flexibility in how the client accounts are structured, generally a jurisdiction's laws and regulations determine the permitted account structures and margining methods as part of an overall regulatory framework.

<sup>15</sup> Similarly, a legal framework that provides for judicial approval of transfers from an insolvent CCSP without requiring the clients to give consent may facilitate porting.

<sup>16</sup> As with any default management tool, regular testing, at least annually, to review the procedures with participants and other stakeholders would help develop the practicality and effectiveness of such arrangements, consistent with Key consideration 4 of Principle 13. See also the Explanatory Note 3.13.7 to Principle 13 and Section 4.3.2 below.

may be operationally easier to implement than the direct payment option, as it would not require setting up a direct payment connection between the CCP and client that is not used in business-as-usual (BAU). However, relying on excess collateral is subject to drawbacks – it is only plausible to hold excess collateral in accounts with segregated client accounts. In addition, that collateral comes at an additional capital cost for the account holder and may be withdrawn in a period of stress, thereby reducing its effectiveness for use in porting.

The two options – permitting direct payments and relying on excess collateral – are not mutually exclusive. Rather, if permitted in a particular jurisdiction, a CCP may both permit direct payments and hold excess collateral to further increase the possibility that accounts will be fully margined.

## 3.2 Communication, coordination and harmonisation

### 3.2.1 Communication and coordination

Principle 23 generally and Key consideration 4 of Principle 14 speak to the types of disclosures FMI should make to their participants and beyond. In support of these broader transparency objectives, a CCP should consider the appropriate degree of communication and coordination before and during the porting process.<sup>17</sup> CCPs also maintain CCSP contact information, and many include appropriate contacts in the event of the CCSP's default. Many CCPs indicated in survey responses and industry outreach that their current practice is to disclose a CCSP default to other CCPs, and seek to coordinate porting the defaulting CCSP's clients to a single CCSP when possible. The survey responses proposed expanding the sharing of this information among CCPs in order to ease porting and client onboarding. Nevertheless, the practice remains subject to regulatory limitations and commercial confidence. CCP participation in the Default Risk Management Working Group<sup>18</sup> is another example of information sharing and communication that seeks to coordinate default management processes, including client porting.

Additionally, while some CCPs have protocols in place to facilitate coordination, the defaulting CCSP may be in a good position to contribute, and should be prepared to help coordinate the porting between the multiple CCPs (when possible, subject to applicable law), given that it has all the client information, and the CCPs do not share a CCSP's position information.

According to survey responses and industry outreach, some clients ask CCPs to coordinate decisions to port and the associated timing for porting or liquidating of their accounts. Particularly if porting is unsuccessful and positions are liquidated, coordinating the timing of these actions can help to minimise clients' market risks from offsetting exposures that they may have across CCPs. Coordination in this context could include expanding the number of and detail in porting status updates sent to each defaulting CCSP client regarding its portfolio.

### 3.2.2 Harmonisation

Furthermore, a CCP should consider the efficiency and effectiveness of its portability processes.<sup>19</sup> The survey responses revealed that most CCPs did not see the merit of harmonising their porting processes.

<sup>17</sup> Principle 23 addresses transparency while Key consideration 4 of Principle 14 addresses the disclosure of "rules, policies, and procedures relating to the segregation and portability of a participant's customers' positions and related collateral...[as well as] any constraints, such as legal or operational constraints, that may impair [the CCP's] ability to segregate or port a participant's customers' positions and related collateral".

<sup>18</sup> The DMRG is a voluntary group of eight CCP organizations, representing a total of 15 CCPs, whose goal is to improve CCP coordination around default management. Members include: CME Group, Eurex Clearing, ICE, DTCC, Minneapolis Grain Exchange Clearing House, the OCC, NASDAQ and the LME.

<sup>19</sup> Principle 21 addresses efficiency and effectiveness generally, while Principle 14 pertains to segregation and portability arrangements. In particular, the explanatory note 3.14.16 discusses efficiency in the context of the transfer of positions of collateral.

In contrast, clients and CCSPs stated that increasing harmonisation could reduce complexity, cost and the likelihood of delay. Since porting a large number of clients quickly can be challenging, CCPs and CCSPs should also seek to implement practices to streamline the porting process, including the client onboarding and risk assessments in the event of a default.<sup>20</sup> In this respect, it is fair to assess whether and how coordination and harmonisation of porting practices and processes could increase the likelihood of successful porting.

While CCPs and CCSPs currently have systems and processes in place to manage porting, for some, increasing automation is one way to increase efficiency and effectiveness of porting arrangements. Further improvements in the porting timeframe could be made through standardisation. Similar suggestions for standardisation were raised in the responses to the public consultation on CPMI-IOSCO's publication, *A discussion paper on central counterparty default management auctions*.<sup>21</sup> These include standardising the type, format and granularity of key data (including customer account information, such as initial margin, delta ladder, positions, customer name and account mapping), file formats, templates and terminology. Publication of preliminary file packs by CCPs can help direct clearing participants to prepare data loads and perform portfolio analysis. Simplifying communication, through standardisation or other methods, is yet another potential improvement CCPs should consider. One CCP noted that client confirmations and reports are already standardised using the industry standard FIX Markup Language protocol, and this is beneficial.

### 3.3. Notable issues to consider when developing a porting protocol

In the survey responses and industry outreach, many CCPs identified regulatory impediments, insolvency frameworks, collateral transfer, testing and transparency as important issues to consider when developing a porting protocol.

#### 3.3.1 Regulatory impediments to successful porting

The vast majority of CCPs and CCSPs indicated in survey responses and industry outreach that KYC and anti-money laundering (AML) requirements are barriers to efficient or successful porting. Although it is beyond the remit of the regulatory bodies that are members of the PSG, it is the case that temporary waivers or reliance on prior approvals in respect of AML/KYC requirements when receiving CCSPs in a default scenario could facilitate porting and improve the efficiency of the process. Accordingly, risks associated with liquidation or adverse market moves would be reduced. Similarly, a number of CCPs also noted that jurisdictional capital requirements limit their ability to receive large ported portfolios, which is problematic in cases where account structures encourage the porting of entire client books. These CCPs stated that temporary relief from capital and leverage ratio requirements would serve to enhance the porting process and CCSPs' willingness/ability to receive ported clients. Temporary relief from other regulatory requirements, such as position limits may also be appropriate. CCPs may also consider the impact of transfers on concentration charges and other risk management measures, subject to proper risk assessment.

#### 3.3.2 Insolvency framework

In survey responses, a few CCPs noted that a government assigned insolvency officer and court may need to review and approve some client and collateral transfers. Insolvency frameworks and the power assigned to insolvency officers and courts vary by jurisdiction. A CCP's porting process must account for its

<sup>20</sup> Porting of a single client from one non-defaulting CCSP to another CCSP is common, so porting is not primarily an operational problem (although CCPs acknowledge that porting a large volume of accounts in a time of market stress would be challenging).

<sup>21</sup> A further interesting operational proposal, although not strictly related to the issue of harmonisation, referred to the supply by CCPs of tools that provide information on margin estimations. These might be useful for porting purposes as well, by allowing clearing participants to estimate the impact of onboarding new clients in terms of margins.

regulatory status, and consider interactions with the insolvency officers and courts. Specifically, a CCP should consider delays due to the review process and possible denial of the transfers under applicable law. Pre-planning by the CCP and relevant authorities for an expedited insolvency court process could support porting, in that approval of a transfer by an insolvency court may facilitate the process by providing assurance to transferees.

### 3.3.3 Collateral transfer

In some porting arrangements, collateral and client positions are not moved at the same time, which may result in under-collateralisation at the receiving CCSP. This is often the case when a legally assigned insolvency officer must sign off on the collateral transfer. Most clients indicated a willingness to pay double margin (at the defaulted CCSP and the receiving CCSP), which is one way to alleviate this problem if the timing issue cannot be solved.

### 3.3.4 Testing

The PFMI state that FMIs, including CCPs, should test and review default procedures, including any close-out procedures, at least annually.<sup>22</sup> More than half of the CCPs surveyed lack experience porting following a CCSP default. Testing these procedures could not only improve awareness among participants and other stakeholders but also help CCPs to evaluate and increase the efficiency and effectiveness of such porting arrangements.

According to survey results, some CCPs run porting exercises to review and evaluate their legal arrangements for porting, lines of communication with CCSPs and clients, and operational capacity. Some CCPs recommend joint testing exercises between CCPs, CCSPs and clients. Porting exercises as part of joint testing exercises could include CCPs with similar sets of products and material CCSPs and clients. CCPs responded by saying that such exercises would help CCPs improve their coordination.

Regular and realistic testing for porting processes is also critical because of industry factors. CCSPs' willingness to onboard new clients may change over time due to factors such as the composition of client portfolios, concentration, capital requirements, CCSP firm condition and market conditions. Not all CCPs surveyed regularly ask CCSPs about their capacity to take on clients in the event of a large CCSP default or stressed market conditions. This testing may be used to inform market participants about the CCSPs' available client clearing capacity to absorb the clients of a large CCSP.

However, it is difficult to realistically test porting during an exercise because of the artificiality of market conditions in a test, as well as confidentiality requirements that prevent the CCP from identifying CCSPs willing to take clients *ex ante*. CCPs also note that the significant time commitment for CCPs' and CCSPs' employees should be considered when deciding how often to run tests.

### 3.3.5 Transparency for clients

As noted above in Section 3.2.1, a CCP should consider the appropriate degree of communication and coordination before and during the porting process. In survey responses and industry outreach, CCPs, CCSPs, and clients disagreed on the need for more transparency in the porting process. Both CCPs and CCSPs reported that their processes are adequately transparent via regulatory disclosures. Clients expressed a different view, stating that they did not have sufficient understanding of the porting process. However, client responses also implied that their expectations regarding transparency may not be well developed. This may be an area in which CCPs, CCSPs, and clients can work collectively to determine clear and transparent communication processes prior to and during porting processes. Additionally, clients could benefit from improved education regarding all of the constraints on CCSPs (capital or business focus,

<sup>22</sup> Key consideration 4 of Principle 13. See also the Explanatory Note 3.13.7 to Principle 13.



operational, legal etc) and account structures that impact successful porting, as well as general steps that clients can take to reduce their chances of being liquidated if their CCSP defaults.

### 3.4 Suggested next steps for consideration by CCPs, CCSPs and clients

Following consideration of the survey results and industry outreach and the above discussion, the PSG has identified a number of potential next steps that warrant further consideration by the industry. These items on the list below follow the order of discussion in this report and are offered as suggestions rather than being prescriptive, in order to accommodate the heterogeneity across jurisdictions and operating models.

1. Alternate CCSPs. CCPs that plan to make use of backup CCSP arrangements to facilitate porting in a participant default should consider clearly outlining the circumstances in which an alternate CCSP should be in place, as well as considering incentives for CCSPs or clients to support the use of these arrangements. CCSPs themselves should consider these arrangements and seek to streamline processes to facilitate alternates. Similarly, clients should outline the factors that they consider in deciding to use alternate CCSPs. The industry should work collectively to address any conflicts that may arise between parties in designating and using alternate CCSPs.
2. Game plans. CCPs may consider developing porting game plans that are informed by the specifics of the relevant insolvency framework and client collateral protection regimes.
3. Client consent. CCPs may consider: (i) creating a protocol to contact clients to the extent that consent is needed; and/or (ii) exploring when consent can be given contractually in advance, in order to facilitate porting.
4. Communication and coordination. CCPs may consider taking steps to communicate and coordinate with each other in the event of a CCSP default, before and during the porting process to the fullest extent possible, in accordance with applicable law. CCPs may consider developing and expanding protocols that facilitate coordination in the event of a CCSP default, which may include development and use of shared contact lists containing CCP, CCSP and client information. In addition, in the event that porting is unsuccessful, CCPs may consider coordinating the liquidation of client positions with other CCPs in order to reduce the negative consequences of bulk liquidation. CCPs may consider expanding the notifications associated with the client's portfolio in such a situation.
5. Harmonisation. CCPs may consider developing templates of what can be automated and standardised in the porting process.
6. Testing. CCPs should consider developing more rigorous porting test exercises that go beyond basic operational testing via:
  - a. direct payments from clients to CCPs in an exercise;
  - b. testing porting of one or more CCSPs defaulting at multiple CCPs to evaluate the ability of CCPs to coordinate; and
  - c. incorporating stressed market conditions, capital limitations at CCSPs and compressed time frames in porting exercises.
7. Transparency for clients. CCSPs may consider disclosing portability risks associated with different account structures in addition to the more typical disclosures currently made to clients about fellow customer risk. As there are currently divergent views on the need for greater transparency about porting risks, CCPs should consider ways to improve clients' understanding of the risks of not being ported.

## 4. Feedback on the discussion paper

The CPMI and IOSCO welcome comments from interested stakeholders – including CCPs, direct clearing participants, clients of clearing participants, buy-side, market participants, academics and the general public – on the different topics covered in this discussion paper by 24 January 2022. Responses should be sent via email to the CPMI Secretariat (cpmi@bis.org) and the IOSCO Secretariat (consultation-06-2021@iosco.org). Responses will be published on the websites of the BIS and IOSCO unless respondents expressly request otherwise. Commercial or other sensitive information should not be included in the submissions, or may be included, with redactions for publication clearly noted.

The purpose of the paper is to elicit comments and feedback from a broad range of interested stakeholders. The CPMI and IOSCO particularly welcome feedback on the following questions:

### Access (Section 2)

#### Design of direct and sponsored access models

1. Do you agree with the observation in the discussion paper that the direct and sponsored access models are designed for and generally used more by larger and/or more sophisticated clients?
2. Could there be any other solutions that would facilitate access, either through greater use of such access models by small and medium-sized clients, or through some other solution?

#### Barriers

3. Do you agree with the findings in the discussion paper that direct and sponsored access models are used more for certain types of products (eg repos) than for others? Do you agree with the reasons described in the paper for why this is the case? Why/why not?

#### Challenges related to direct and sponsored access models

4. Do you agree that direct and sponsored access models have the potential to diversify the risk profile of the direct clearing participant basis of a CCP by introducing new types of direct participants? Why/why not?
5. Do you think that CCPs have introduced sufficient safeguards to prevent risk transmission from direct participants using direct and sponsored access models? Why/why not? If not, what additional safeguards do you think are necessary?
6. Do you think that sponsors are properly incentivised to closely monitor the activity of their sponsored participants (ie the direct participants)? Why/why not? If not, how do you think sponsors could be properly incentivised?
7. Do you think that the number of sponsors is limited? Are you concerned about sponsor concentration risk? If so, is this because it is difficult to find a sponsor? Are there any other reasons?
8. Do you think that CCP rules adequately address the issue of sponsor default? If so, what are the CCP rules that adequately address this issue? If not, what kind of CCP rules are required to address this issue?

#### Testing

9. Have you participated in default management exercises that test direct and sponsored access models?
10. Without providing identifying information, what has worked well in such exercises? What has not? Do you have recommendations as to what could be improved for such exercises?

#### Additional considerations

11. Please describe any additional factors that may be impacting the activity and uptake of direct and sponsored models that are not considered in this paper.
12. Please provide any additional comments with regards to the impact that direct and sponsored access models have on access to client clearing.
13. Please provide additional comments with regard to access to client clearing more generally.

#### Porting (Section 3)

##### Risks from not porting

14. Are there any additional risks or potential harm associated with not porting following a clearing participant default, which were not described in the discussion paper? If so, please describe such additional risks and/or harm.
15. Potentially effective practices. Do you agree with the two tools identified in the discussion paper as potentially successful porting practices? Are there any other tools that should be identified as potentially effective practices?
16. What additional approaches do CCPs use to pre-emptively identify a backup CCSP? What incentives can be provided to assist the development of alternative/backup CCSP relationships? Are there any other considerations for alternate/backup CCSPs not set forth in the report?
17. Are there other considerations for having a game plan that were not described in the discussion paper?
18. In addition to those outlined in the paper, what attributes of account structures facilitate or impede porting client accounts?
19. Are some client accounts not suitable for porting?
20. Does holding excess collateral and the ability to make direct payments improve the probability that a client will be ported successfully or are there impediments to using this collateral?
21. What is your view of a client consent mechanism that could be used to facilitate porting, if permitted under applicable law?
22. Are the potentially effective practices described in the discussion paper consistent with prior porting experiences?
23. Are there any barriers to implementing potentially effective porting practices that are not described in the discussion paper?

##### Communication and coordination

24. Are there any additional communications by the CCP or the defaulting CCSP that may increase the probability of porting client accounts?
25. Are there additional actions CCPs can take following a clearing participant default to coordinate that are not set forth in the discussion paper? Are there any limitations on coordination that are not included in the paper?

##### Harmonisation

26. Are there additional items CCPs can harmonise or standardise during business as usual that are not outlined in the discussion paper? Are there any factors that may impede harmonisation or standardisation that are not provided in the paper?

Notable issues to consider when developing a porting protocol

27. Are there additional regulatory requirements that could impede porting? Can such impediments be addressed or mitigated through action prior to the CCSP's default?
28. Are there any additional factors that should be addressed in testing exercises?
29. Please provide examples of good disclosure practices from your perspective.
30. Are there other arrangements a CCSP can make to ensure that, post default, the CCSP can help coordinate porting at multiple CCPs if the CCSP is a non-defaulter? If the CCSP defaults, what arrangements can the CCSP make to facilitate the porting of its clients?

Suggested next steps

31. Please provide feedback on the suggested next steps for consideration. Do you agree that these issues warrant further consideration by CCPs, CCSPs and/or clients? Are there additional issues that may warrant further consideration?

## Annex A: Members of the PSG and the Client Clearing Subgroup

<b>PSG co-chairs</b>	
European Central Bank	Daniela Russo#
Commodity Futures Trading Commission, US	Robert Wasserman
<b>PSG and client clearing subgroup</b>	
Reserve Bank of Australia	Jon Cheshire* Kelsey Wilkins**
National Bank of Belgium	Steven Van Cauwenberge
Securities and Exchange Commission of Brazil	Sergio Schreiner
Bank of Canada	Peter Youngman
Autorité des marchés financiers, Quebec	Anna Tyniec (until December 2019) Sami Gdoura (from January 2020)
Ontario Securities Commission	Jalil El Moussadek
Bank of France	Valérie Fasquelle Nicolas Peligry Alexandre Garcia**
Autorité des marchés financiers, France	Patrice Aguesse
European Central Bank	Simonetta Rosati* Francesco Vacirca** Eszter Tanai** Argyris Kahros** (until June 2021)
European Securities and Markets Authority	Giampiero Carlà
Deutsche Bundesbank	Elvira Scheben*
Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin)	Felicitas Linden
Securities and Futures Commission, Hong Kong	Ryan Ko
Securities and Exchange Board of India	Manoj Kumar
Bank of Italy	Loretta Frettoni Cristina Di Luigi**
Bank of Japan	Megumi Takei (until July 2020) Takashi Hamano (from July 2020) Toshihide Yorozu (until June 2021) **
Financial Services Agency, Japan	Kenrin Nishimura Kosaku Taira
National Banking and Securities Commission, Mexico	Luis Leyva
Netherlands Bank	Jeannette Capel Luc Blommers
Central Bank of the Russian Federation	Natalya Nikishanina
Monetary Authority of Singapore	Pui Hoon Loh
Finansinspektionen, Sweden	Jan Axelsson

Swiss National Bank	Thomas Nellen
Bank of England	Russell Jackson (until January 2020) Laura Wallis (from January 2020 to July 2020) Simon Morley (from July 2020 to November 2020) Emma Butterworth (from November 2020)
Board of Governors of the Federal Reserve System	Jennifer Lucier (until September 2019) Emily Caron (from October 2019)
Federal Reserve Bank of New York	Lawrence Sweet (until December 2019) Hampton Finer (from January 2020)
Commodity Futures Trading Commission, US	Kirsten Robbins# Glenn Schmeltz** Matthew Jones**
Securities and Exchange Commission, US	Elizabeth Fitzgerald Kevin Schopp
World Bank Group	Harish Natarajan
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\* PSG member and subgroup member

\*\* Subgroup member only

# Subgroup lead