Resolution instruments of central counterparties. Effectiveness and possible systemic impact

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Table of contents

Acronyms used

BIS	Bank for International Settlements
CCP	Central counterparty
CNMV	Spanish National Securities Market Commission
CPMI	Committee on Payments and Market Infrastructures – Bank for International Settlements
EMIR	European Market Infrastructure Regulation
EU	European Union
FSB	Financial Stability Board
IOSCO	International Organization of Securities Commissions
NCWO	No creditor worse off
OTC	Over the counter
PFMI	Principles for Financial Market Infrastructures
VMGH	Variation margin gain haircutting

1 Introduction

As a continuation of the work published in 2021[1] on the resolution of central counterparties (CCP), this article analyses the impact of the application of resolution tools on financial stability in scenarios of member failure, operational failure and systemic crisis.

This analysis will contribute to enriching the work related to the resolution plan of the Spanish CCP and will benefit from the discussions held in the workshops on this matter by the Financial Stability Board, together with CPMI and IOSCO, in which the CNMV has participated.

What has also contributed to enrich this analysis is the Conference on Recovery and Resolution of CCP[2] that the CNMV held on 21 June 2022 with the aim of raising awareness in the financial industry about the new European regulation on the matter and promoting debates on its implications with the financial industry, competent authorities and academics. In particular, the round table dedicated to the effectiveness and the possible impact on financial stability of the application of CCP resolution tools has inspired much of this analysis.

2 Systemicity of CCPs and the three essential "Rs"

The systemic importance of CCPs acquired after the global financial crisis is due, to a large extent, to the incorporation of OTC derivatives into centralised clearing, which has made the derivatives market more secure, stable and transparent and, at the same time, it has turned these infrastructures into entities which are too big to fail.

According to the latest report published by the FSB on progress in the reform of OTC derivatives markets,[3] 17 of the 24 FSB member jurisdictions have passed regulatory measures for mandatory central clearing. Among them, the European Union,[4] Hong Kong, Switzerland, United Kingdom and United States, where the most important CCPs in the world are located, considered by the FSB as systemic clearing houses in more than one jurisdiction.[5]

1 Gomez-Yubero and Gullón (2020).

2 The video of the conference is available on the CNMV website. The broadcast of the round table on the effectiveness and possible impact on financial stability of the application of CCP resolution tools is available from 2:32:20 (CNMV, 2022).

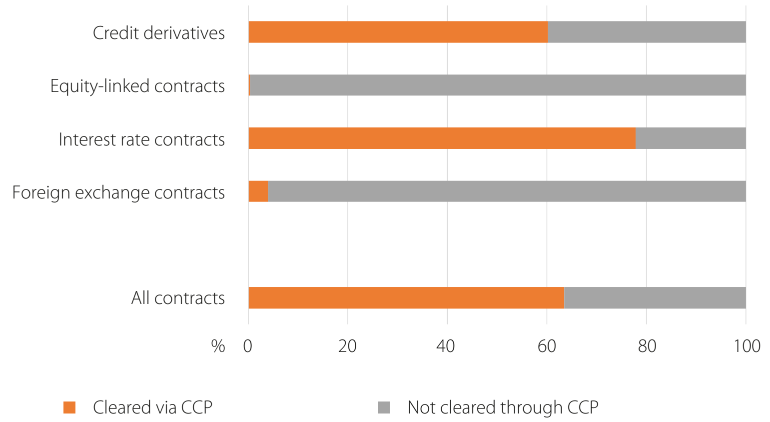
3 FSB (2022).

4 The European Union encompasses the 27 Member States, of which 5 are FSB member jurisdictions (France, Germany, Italy, the Netherlands and Spain).

5 There are 13 CCP worldwide, of which 6 are from the European Union: BME Clearing (Spain – EU), CC&GB (Italy – EU), CME Inc. (USA), Eurex Clearing (Germany – EU), EuroCCP (Netherlands – EU), HKFE Clearing Corporation (RAE of Hong Kong), Clear Credit (USA), ICE Clear Europe (United Kingdom), LCH Ltd (United Kingdom), LCH SA (France – EU), Nasdaq Clearing (Sweden – EU), Options Clearing Corporation (USA) and SIX x-clear (Switzerland).

According to the latest statistics on OTC derivatives published by the Bank for International Settlements (BIS), 64% of the volume of derivatives contracts in force worldwide (US$632 trillion at the end of the first half of 2022) are cleared through CCP. The largest volume of OTC derivatives is concentrated in interest rate contracts, which represent 80% of the total volume. In this case, the share of centrally cleared contracts was 78% at the end of June 2022.

Proportion of outstanding value of OTC derivatives cleared through CCP FIGURE 1



Source: BIS (2022).

In addition, given the transnational nature of the clearing activity and the considerable interdependencies with the rest of the financial system, during the last decade the regulatory agenda has considered strengthening its resilience, its recovery capacity and its resolvability as a priority.

The resilience, recovery and resolution of CCPs are three essential "Rs" for CCPs, which are closely linked: on the one hand, strong resilience mechanisms can reduce the likelihood that recovery and resolution will need to be entered, while recovery and resolution agreements should maintain incentives to ensure resilience in the continuity phase.

Since the implementation of these reforms, significant progress has been made to improve the interaction and effectiveness of the three "Rs", achieving globally harmonised regulation, which is based on international principles adopted after the financial crisis.

On the one hand, the Principles for Financial Market Infrastructures (PFMI, for its acronym in English),[6] which were agreed by CPMI-IOSCO in 2012 and complemented in the following years, address the prudential regime and risk management, and were reflected in Europe in the EMIR Regulation.[7]

6 CPMI-IOSCO (2012).

7 Regulation (EU) No. 648/2012, of the European Parliament and of the Council, of 4 July, on over-the-counter (OTC) derivatives, central counterparties and trade repositories.

On the other hand, the key attributes of effective resolution regimes for financial institutions,[8] approved by the FSB in 2011 for the banking system and adapted in 2014 to market infrastructures, address the problem of financial institutions that are too big to fail by defining a resolution framework that allows authorities to manage the failure of this entities, maintaining the continuity of critical functions for the proper functioning of the financial system and without resorting to taxpayer funds.

The European Regulation on recovery and resolution of central counterparties (hereinafter the European Regulation on R&R of CCP)[9] conforms to these principles and with its approval and effective application, as of August 2022, it has been achieved that all CCPs in the world considered by the FSB as systemic in more than one jurisdiction[10] (among them, Spain's BME Clearing) have a recovery and resolution framework adjusted to the international standards approved after the global financial crisis.

At the international level, work continues to further strengthen the three "Rs" of these infrastructures and improve the effectiveness of OTC derivatives market reforms. Among these works, it is worth highlighting the following most recent:[11]

– In November 2022, CPMI-IOSCO published a report on cyber resilience[12] of financial market infrastructures showing reasonably high adoption of cyber guidance issued in 2016,[13] but highlights that some infrastructures (although in a small number) do not fully meet the expectations regarding the development of recovery plans and cybernetic response to meet the recovery objective in a maximum time of two hours. This report identifies some additional issues: i) related to deficiencies in response and recovery plans in extreme cyberattack scenarios, ii) lack of cyber resilience testing after major system changes, iii) lack of comprehensive evidence-based testing scenarios and iv) insufficient involvement of relevant stakeholders in testing. In view of the potential aggregate impact, relevant financial market infrastructures and their supervisors are urged to address these issues with the highest priority.

– The CPMI and IOSCO published in September 2022[14] a report on the benefits and challenges derived from the new models of access to centralised clearing, which allow clients to directly access the services of CCPs, and on the effectiveness of the practices of allowing the portability of client positions in case of default of the clearing service provider.

8 FSB (2014).

9 Regulation (EU) 2021/23 of the European Parliament and of the Council of 16 December 2020 on a framework for the recovery and resolution of central counterparties.

10 See Note 5.

11 Section 3.1 of Gómez-Yubero and Gullón (2020) contains a summary of these advances up to the end of 2020.

12 CPMI-IOSCO (2022d).

13 CPMI-IOSCO (2016).

14 CPMI-IOSCO (2022b).

- The CPMI and IOSCO have also promoted a reflection and debate with the industry to try to advance the identified problems related to CCP default management auctions,[15] as well as practices to address non-default losses in business as usual, recovery and orderly liquidation scenarios.[16]

- The FSB, CPMI and IOSCO published in March 2022 an analysis on existing CCP financial resources and tools for recovery and resolution,[17] and highlighted the need to continue working on the resources and instruments available in terms of resolution. The FSB is currently continuing this work, assessing the costs and benefits of potential alternative financial tools and resources for CCP resolution (referred to in Section 5).

- As part of the FSB programme to improve the resilience of non-bank financial intermediation, CPMI-IOSCO submitted for public consultation in September 2022 a report on margining practices in the central and non-central clearing markets in derivatives and securities,[18] in which it identifies several areas amenable to further analysis and possible future policy directions.

Despite these advances, the growing systemic importance of CCPs and the intensification of their interconnection with banks through clearing and other services (liquidity lines, settlement services, custody and investment) underscores the need to further understand and consider the recovery and resolution of CCPs and their impact on financial stability.

The following sections analyse the different types of instruments that a resolution authority has at its disposal to tackle the failure of a CCP and advance some of the lines of investigation that are being carried out within the scope of the FSB on possible additional resources or alternatives in the event that the existing instruments in the recovery or resolution phases could be insufficient or entail risks that cannot be assumed by the financial system. The table in Annex summarises this analysis.

3 CCP resolution objectives

The failure of entities such as CCPs, which provide time-critical, essential and non-substitutable services, could have systemic implications that cannot be assumed by the financial system, so the resolution of this type of entity that is too important to fail must have as its objective the continuity of the critical functions of the CCP in all the jurisdictions in which these functions are carried out and the search for financial stability without recourse to taxpayer funds.

15 CPMI-IOSCO (2020).

16 CPMI-IOSCO (2022a).

17 FSB, CPMI and IOSCO (2022).

18 CPMI-IOSCO (2022c).

Resolution planning should seek to preserve incentives for CCPs, clearing members and market participants to centrally clear and constructively engage in successful risk management and recovery in the event that the CCP should run into financial difficulties and thus reduce the probability of resolution.

The objectives of CCP resolution can be achieved by maintaining or restoring the continuity of critical CCP functions, or ii) ensuring the continued performance of those functions by another entity (either a viable CCP or an established bridge entity by the resolution authority), together with the orderly liquidation of the non-essential activities or parts of the CCP.

The resolution of the CCP must seek to: i) maintain the confidence of the market and the public while minimising the risk of contagion to the members of the CCP or to the financial system in general, including other market infrastructures; ii) avoid any interruption in the operation of the links between the CCP under resolution and other market infrastructures when such interruptions could have a significant negative effect on financial stability or the functioning of the markets, and iii) maintain continuous access of participants to the securities or collateral contributed to the CCP.

To this end, the resolution authorities must have all the powers necessary to carry out the orderly resolution of a CCP, in particular, to: i) enforce any pending contractual obligation by virtue of the operating rules and other contractual provisions of the CCP; ii) continue to manage the CCP; iii) return the CCP to a matched book situation;[19] iv) deal with pending losses, whether due to default by its members or due to other causes; v) replenish financial resources within an appropriate term to a level sufficient to maintain compliance with legal requirements for the CCP to continue operating; vi) write down (fully or partially) the own funds of the CCP and, where applicable, unsecured liabilities and, if applicable, convert the unsecured liabilities into capital or other instruments owned by the CCP or a successor entity; vii) transfer essential functions to another viable CCP or to a bridge CCP, and viii) liquidate assets and transactions that are part of functions that are not considered critical.

The entry into resolution would occur when a CCP ceases to be viable, or it is probable that it will cease to be, in the following cases: i) because it is or probably will be incapable of performing an essential function, ii) because it is or it will probably be unable to pay its debts or other liabilities when due and iii) because it is or will probably be unable to restore its viability by applying its recovery measures and it does not have a reasonable prospect of returning viable within a reasonable period of time through other actions that the CCP could take without compromising financial stability.

19 Matched book means the situation in which the open position of the CCP is zero, that is, in which long positions are matched by equal and opposite short positions.

4 Review of available tools

As indicated, in the event that the CCP meets the resolution conditions, its resolution authority must have a set of instruments and resolution powers that allow it to deal with situations arising from cases of default by its members, of non-default, or a combination of both, with the primary objective of ensuring the continuity of essential functions, avoiding negative effects on financial stability, and protecting public funds.

To this end, the European Regulation on R&R of CCP defines a set of instruments and competencies that, like a toolbox, are at the disposal of the resolution authority and that grant said authority the necessary flexibility to apply the tools and resources that it deems most appropriate depending on the specific circumstances in which the infeasibility or possible infeasibility of the clearing house occurs, as well as on the corporate, organisational and business characteristics of the CCP.[20]

At European level, four types of instruments have been regulated that the resolution authority can apply, either individually or in combination[21] that it deems most appropriate and effective for the CCP considering the resolution scenario in question:

- Loss allocation instruments.
- Position allocation instruments.
- CCP loss absorption tools.
- Asset transfer instruments.

The rule also contemplates, as a last resort, two financial stabilisation tools that the State[22] could apply in exceptional situations of systemic crisis, as a last resort, once all the resolution tools have been evaluated and fully used, while maintaining financial stability, provided that it has obtained the corresponding approval under the European Union State aid framework and an adequate recovery plan for the public funds used has been provided. To avoid any kind of moral hazard,[23] the resolution plan of the clearing house cannot contemplate in any way the use of public funds.

20 This open approach is consistent with the FSB's proposal in its Key Attributes of Effective Resolution Regimes for Financial Institutions (FSB, 2014) as well as its Guidance on Central Counterparty Resolution and Resolution Planning (FSB, 2017), which establish that resolution authorities have the necessary powers and tools to achieve specific objectives as part of an orderly resolution, subject to certain safeguards.

21 See section 3.2.3 and Table 1 of Gómez-Yubero and Gullón (2020).

22 In this case, the application of public stabilisation instruments will be carried out under the direction of the competent ministry designated for that purpose, or of the Government itself, in close cooperation with or under the direction of the resolution authority. To guarantee the effectiveness of said instruments, the competent ministry or the Government will have the resolution powers that would correspond to the resolution authority.

23 Moral hazard is understood to mean the result of a situation in which a market agent has the opportunity to take advantage of a situation or financial deal, knowing that all the risks and consequences will fall on another party.

The sources of losses and risks in CCPs can come from two areas, losses due to default by their clearing members and losses for reasons other than default by members, such as situations of fraud or legal, investment or operational risks. Among the latter, cyber risk appears as one of the most imminent issues that could potentially cause long-lasting detrimental consequences, especially with the increasing reliance on the cloud.[24]

In the case of losses due to member default, the resolution authority must rematch the CCP's portfolio through position allocation instruments and allocate outstanding losses through the use of loss absorbing instruments. Non-default losses must be absorbed by shareholders' equity instruments. If these instruments are not sufficient, the resolution authorities can write down the debt and the unsecured liabilities, in accordance with their priority under applicable national insolvency regulations and apply loss allocation instruments to the extent that is necessary and without jeopardising overall financial stability.

In the following sections, these instruments are analysed one by one, using various defining parameters of their effectiveness when it comes to achieving the resolution objectives that are defined in each specific situation, the limitations for their use, both legal and operational, the costs inherent to its application and the impact on the incentive system for market participants to use centralised clearing and members to take part in the recovery phase. Finally, the impact on financial stability is analysed.

4.1 Position allocation instruments

The forced allocation of positions and the total or partial termination of contracts are tools that can be used to return to a CCP matched book situation and stop further losses. To ensure that they are effective and achieve their objective, these instruments must be applicable to the widest possible variety of contracts that create an unmatched book for the non-viable CCP, both the defaulting clearing member contracts and those in the category of affected assets or clearing service of the CCP.

These instruments are suitable for application in loss-by-default scenarios, both when the objective is to maintain essential clearing services within the CCP under resolution and in conjunction with the transfer of essential services to a bridge CCP or a third party, and the subsequent cessation of activities and liquidation of the CCP.

24 Cyber threats have grown in frequency and sophistication in a context of digital transformation and increased reliance on third-party service providers. Geopolitical tensions and the growing interconnection of the financial system are also factors that increase the probability of cyber incidents in financial institutions. This vulnerability is recognised by the FSB, which works to improve the resilience of the financial system. CPMI and IOSCO have also been paying special attention to these threats (see CPMI-IOSCO, 2022d). The joint analysis of these organisations (FSB, CPMI and IOSCO, 2022) shows that only the cyber risk scenario leads to the resolution of most of the CCPs dealt with in the analysis.

The operational risk related to the use of these instruments is low since they would be easily available in resolution and the resolution authority would have the capacity to measure, through the valuation of the positions, the amount available. In order to guarantee the ability of the resolution authority to apply these instruments to contracts with entities established in third countries, the recognition of such a possibility must be included in the CCP's operating rules.

However, these tools have a high probability of causing systemic consequences related to knock-on effects for the members of the clearing house and, ultimately, their customers, affected by the termination or by the forced allocation of positions by impacting on possible hedging and other chained transactions, which would expose said participants to market risk at a critical time.

This effect could occur if a participant were allocated positions in products or durations in which it does not regularly trade and therefore are not yet within its risk management structure. A partial termination could, for example, result in the removal of one leg of a participant's hedging strategy, which could render the hedge ineffective.

Thus, the resulting positions could, at least until they can be liquidated in the market, exceed their risk tolerance level and their ability to effectively manage the risk of their positions. Furthermore, in a forced allocation, risk exposures would be concentrated in a subset of clearing participants, which could have negative impacts in the event of new defaults.

In both the case of forced allocation and partial terminations, affected participants could end up with more directional portfolios and therefore higher margin demands. Even if the use of such tools would not cause solvency problems for clearing members, it could put significant pressure on clearing members' liquidity management at a very difficult time.

While in the event of partial termination and forced allocations the impact depends on the magnitude of the contracts affected, a complete termination of contracts can lead to highly disruptive side effects at a systemic level and throughout the market, depending on the systemic importance of the CCP in resolution.

The termination of all contracts, whether in one business line of the CCP or all, would have highly relevant effects for financial stability, especially if the unviable CCP is systemic. Therefore, such termination should be avoided as far as possible and should only be applied if the relevant clearing service or CCP is non-critical and full termination would not, in the opinion of the relevant authorities, have systemic consequences for the financial market in general; or if no other option is likely to lead to a better outcome for financial stability.[25]

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25 FSB (2017).

4.2 Loss allocation instruments

Cash calls to non-defaulting clearing members, variation margin gain haircutting (VMGH) and even initial margin haircuts[26] are instruments that can be used to obtain additional resources to: i) absorb uncovered losses, ii) contribute to recapitalise the CCP, iii) provide the clearing house with the necessary liquidity to restore its ability to meet its payment obligations in resolution and iv) replenish its pre-financed resources, in such a way that it allows it to continue with its essential activities.

4.2.1 Cash calls

Cash calls under resolution must be contemplated in the operating rules and other contractual provisions of the clearing house, which allows the resolution authority to make one or several requests of contributions in cash to the non-defaulting clearing members for a predetermined amount of funds once that the CCP is subject to resolution. Such amount is usually established based on the contributions of the members to the default funds and, in order for the members to know in advance the commitments that they may assume with these contributions, they are usually limited, as in the European Regulation on R&R of CCP, in an amount equal to twice its contribution to the guarantee fund against defaults.

In both cases, their application in resolution is independent and in addition to the contractual right of a CCP to use cash calls and haircuts in the recovery phase, if this is provided for in its operating rules and in its recovery plan.

These instruments are suitable to cover both losses due to member default and other losses, as well as to restore the CCP's ability to meet its payment obligation, replenish pre-funded resources and recapitalise. The usual limit on its amount, although it provides certainty to members, also conditions its application in that in certain situations it may be insufficient to cover losses.

Cash calls present relatively low operational risk in terms of applicability because the maximum amount of cash is generally defined in advance and therefore predictable.

In addition, to guarantee their enforceability, they must be contemplated in the regulations of the clearing house, which allows the resolution authority to apply them to contracts with entities established in third countries.

The use of this instrument would not affect the business models of the CCPs or the incentives of the clearing members to support the recovery and the default management process.

26 Initial margin haircuts are not allowed under European regulation, so in this analysis they are considered only at a theoretical level in order to obtain a more complete comparison of the risks inherent in loss allocation tools.

Although the maximum amount of cash calls is known in advance, its application has an impact on the liquidity situation of clearing members and could generate knock-on effects, particularly in an already overly-stressed environment. This impact will depend on the amount of the requirement, its size in relation to the clearing member's balance sheet, the cumulative effects of other management and recovery measures already taken by the clearing house, and general market conditions. In a scenario with particularly strained market conditions, the use of cash requests can have a broader impact, so it is essential to consider how it affects members' management of their capital and liquidity buffer.

4.2.2 Gain haircuts

Variation Margin Gains Haircutting is a power by means of which the resolution authority can reduce all or part of the amount of the CCP's payment obligations to non-defaulting clearing members when such obligations derive from profits owed in accordance with the procedures applied by the CCP to pay variation or payment margins that have the same economic effect, so that the net reduction that may be made for each member must be proportional to the amount owed by the CCP. As in the case of cash calls, the rules of operation of the clearing house must include this power of the resolution authority to delay, reduce or cancel payments derived from variations in margins.

The operational risk when applying these haircuts is negligible, since the clearing house controls their execution and clearing members have no way of avoiding a haircut, as the clearing house retains the cash received in compliance with margin variation requests.

This instrument is applicable for absorbing losses, especially in default scenarios, and as a means of providing liquidity.

The haircut allocates costs to members who experience mark-to-market profit on their positions, which, a priori, avoids allocating costs to participants with losses. However, the allocation could occur at a time when members may be under pressure, either from the stress of the crisis or simply because they have previously, in the recovery phase, contributed funds through cash calls and profit cuts.

Therefore, the positive position of a participant in the CCP need not be an adequate indicator of its relative ability to absorb a loss. When assessing the relevance of potential knock-on effects, it is important to take into account, among other things, the amount of the allocated losses and how the possible additional haircuts under resolution could impact the solvency and liquidity situation of clearing members and, where applicable, that of the clients. Market confidence could be especially damaged if the haircut is used on multiple days.

Another drawback of this resource is that it is difficult to estimate a priori the amount that would be available under resolution, so normally the resolution authority will not be able to accurately identify the amount available for resolution planning.

While the haircut would not affect CCP business models, the potential use of this instrument could incentivise clearing participants to reduce exposure to the CCP by closing out their positions.

4.2.3 Collateral haircuts

The potential use of initial margin haircuts presents the highest risk of negative market impact and undermining confidence in the CCP with potential knock-on effects, as many clients would be unwilling – and others legally unable (due to the requirements of banking solvency regulations) – to continue operating in a CCP in which it was possible to cut collateral. In general, this resource is not allowed by the legislation of various jurisdictions, such as the European Union, due to the potential negative impact on financial stability, confidence and incentives for centralised clearing.

In general, the collateral provided by non-defaulting members is protected against CCP bankruptcy situations. Spanish legislation contemplates, in Article 110.7 of the Spanish Securities Market Act (whose consolidated text was approved by Spanish Royal Legislative Decree 4/2015, of 23 October) an absolute right of separation of these elements of collateral in favour of their legitimate owners (members or clients) in the event that the CCP should be liquidated within the framework of a bankruptcy process.

The CCP also enjoys an absolute right of separation with respect to the collateral constituted by members or by their clients who could be subject to bankruptcy proceedings (Article 110.4 of the Spanish Securities Market Act). Likewise, the margins of clients that are in bankruptcy (Article 110.5 of the Spanish Securities Market Act) enjoy this protection in favour of members of the CCP.

As in the haircut, the operational risk when applying this instrument would be negligible because it is a pre-funded resource. However, it would require participants to immediately replace collateral haircuts or liquidate their positions, potentially exacerbating market stress and increasing knock-on effects.

4.3 CCP loss absorption tools

In accordance with the general principles of the resolution,[27] the shareholders of the CCP subject to resolution must assume the first losses after compliance with all the obligations and provisions set forth in the recovery plan, unless the resolution authority deems it more appropriate not to exhaust said provisions.

27 FSB Attribute 5.1 (2014) and Article 23.1.a) of the European Regulation on R&R of CCP.

4.3.1 Write-down and conversion of equity and debt instruments

The resolution authority may apply the instrument of write-down and conversion of proprietary instruments and debt instruments or other unsecured liabilities issued by the CCP subject to resolution in order to absorb losses, to recapitalise the CCP or a bridge CCP, or to facilitate the implementation of a transfer strategy such as the sale of the business.

The resolution authority must apply the write-down and conversion instrument in accordance with the priority of credits applicable according to the ordinary insolvency procedures, in such a way that it must be the shareholders of the CCP who bear the first losses, and after them the creditors of the CCP subject to resolution, in accordance with the order of priority of their claims under ordinary insolvency proceedings, ensuring that creditors of the CCP in the same category are treated fairly and equitably.

This means that shareholders must be redeemed before the use of loss allocation tools to non-defaulting members or together with said use, unless a different sequence minimises deviations from the No Creditor Worse Off principle of avoiding damages to creditors greater than those they would have suffered in a regular winding-up process (see Exhibit 1) and better achieve resolution objectives.

In any case, it is necessary to exclude from write-down the liabilities contracted with employees and commercial creditors for the supply to the CCP of goods or services that are essential for the daily development of its activities, the liabilities contracted with the Tax Administration or social security, and liabilities owed to clearing and settlement systems or other CCPs, as well as initial margins contributed by members.

The principal write-down and non-excluded liability write-down and conversion instrument provides the resolution authority with a readily available source of funds to absorb losses and recapitalise the CCP, so the operational risk of implementation is relatively negligible. However, it is limited in terms of loss absorption by the amount of liabilities available for write-down.

The impact on the market and public confidence in the CCP will depend on the public perception of the extent to which the loss reflects a material flaw in the CCP's design and its internal controls.

No Creditor Worse Off principle EXHIBIT 1

All resolution tools are subject to the No Creditor Worse Off safeguard (known as NCWO), which seeks to prevent shareholders, clearing members and other creditors from suffering losses greater than those they would have suffered if, instead of the resolution authority having adopted a resolution action in relation to the CCP at the time it considered that the conditions for resolution were met, the CCP would have been wound up under normal insolvency proceedings, after full performance of the contractual obligations and other provisions provided for in its operating rules.

To this end, it is necessary to compare, based on a fair valuation of the assets and liabilities of the CCP, the treatment received in the resolution by the shareholders, clearing members and other creditors with that they would have received if the resolution authority had not taken such action and they had become subject to potential outstanding obligations under the CCP's recovery plan or other provisions of the CCP's operating rules, and the CCP had been wound up under the CCP's recovery procedures regarding ordinary insolvency.

The use of cash calls under resolution, which must be contemplated in the CCP's regulations, is not available to the CCP or to the administrators or liquidators in the context of insolvency proceedings. Therefore, such calls cannot be considered to form part of the treatment that shareholders, clearing members and other creditors would have received if the resolution authority had not adopted a resolution measure.

Similarly, the use by the resolution authority of haircuts owed to a non-defaulting clearing member in excess of the agreed contractual limits for such haircut should also not be considered part of the treatment that shareholders, clearing members and other creditors would have received if the resolution authority had not taken a resolution measure.

Shareholders, clearing members and other creditors who have received, in payment or indemnity for their rights, less than what they would have been entitled to, subject to potential pending obligations under the CCP's default rules or other contractual arrangements of the CCP's operating rules, if the CCP has been wound up under ordinary insolvency proceedings, shall be entitled to be paid the difference.

Clients are entitled to payment for differences in treatment when there is a contractual basis that makes them direct creditors of the CCP, since the resolution authority can only control the direct impact of its measures in such cases.

All of the instruments mentioned so far could create liquidity pressures on clearing members. This, in turn, could affect the liquidity of the CCPs themselves, since they depend on the functioning of the markets for their own liquidity. As the severity of the stress intensifies, with multiple CCPs undergoing recovery or resolution, the exponential loss of confidence among market participants could result in a situation where the recovery and resolution tools may not work as intended. Stress on multiple CCPs at the same time, or sequentially, is arguably the most significant challenge that resolution authorities, clearing members and the market in general could face.

4.4 Asset transfer instruments

Achieving resolution objectives may require the transfer of the essential functions or viable activities of a CCP to a healthy entity, such as a private sector buyer or a bridge CCP. In both cases, the residual part of the CCP must be liquidated within a reasonable period of time, taking into account that the failing CCP will normally have to provide the necessary support to the buyer or the bridge CCP to carry out the activities or provide the services acquired under of said transmission.

4.4.1 Sale of business

Through the application of this instrument, the resolution authority could sell the CCP or parts of its activities to one or several buyers without the consent of the shareholders, within an open, transparent and non-discriminatory process, while trying to maximise the possible sale price.

The funds obtained from the sale of assets or liabilities of the CCP subject to resolution, after deducting the costs derived from the failure of the CCP and the resolution process, must revert to the entity that remains in the liquidation process, while the net income from the transfer of instruments owned by the CCP subject to resolution must revert to the shareholders. In both cases, the consideration paid by the buyer must also benefit the non-defaulting clearing members who have suffered losses, as well as being subject to the full recovery of any possible public financing provided in the framework of the resolution.

The application of this instrument presents relevant operational difficulties since it is necessary to reconcile the necessary speed and confidentiality of the process with the search for buyers willing and able to assume the responsibilities of said acquisition.

To this end, it is likely that the information on the sale as well as on the negotiation process with potential buyers is systemically relevant and that, within the framework of the market abuse prevention regulations, it is advisable to delay its disclosure for the time needed to plan and structure the resolution of the CCP if the authority thereby considers that the achievement of one or more of the resolution objectives could be undermined, in particular by creating a real danger to financial stability.

In scenarios of systemic crisis, the operational complexity of this measure could be aggravated by the liquidity and solvency tensions to which potential buyers could be subjected.

4.4.2 Bridge CCP

The resolution authority may also transfer to a bridge CCP the proprietary instruments issued by the CCP under resolution or part of its activities for the time necessary to maintain the continuity of the essential functions received. This solution is suitable for situations in which the sale of the business is not possible due to the lack of private buyers, so it could be an alternative to the sale of the business in marked stress scenarios, although it is common for it to require public help in its financing.

The bridge CCP, as it fully or partially belongs to one or several authorities or is controlled by the resolution authority, must have as its main objective the guaranteeing of the continuity of basic financial services for the clearing members and for the clients of the CCP subject to resolution, and the maintenance of essential financial activities. Bridge CCPs must be managed as viable going concerns and be relisted for sale to one or more private sector buyers when conditions are appropriate, or liquidated if they are no longer viable.

The operationalisation of this instrument can become extremely complex from a legal and operational point of view, and costly in terms of time and financing, since the resolution authority must define or approve its constitution rules, appoint or approve the members of the Board of Directors and determine their responsibilities and remuneration, as well as the strategy and risk profile of the bridge CCP, which will assume the authorisations of the CCP subject to resolution to provide the services or carry out the activities derived from the transmission in accordance with Regulation (EU) 648/2012.

To the problems related to the administrative and management difficulties of the bridge vehicle, one could add the problems to identify alternatives in case no buyers are found at the end of the process.

4.5 Government stabilisation tools

Public support for the resolution of a CCP may take the form of financial support for the recapitalisation of a CCP in exchange for ownership instruments, placing the CCP (or a successor entity such as a bridge CCP) under temporary public ownership, or providing extraordinary assistance from liquidity.

The possible application of public support varies depending on the specific legal framework, as well as the social and political environment of each jurisdiction. Following the current European Union CCP resolution regime, government stabilisation tools could be used in very extraordinary situations, for example a systemic crisis, as a last resort to preserve financial stability and, once private sources of funding have exhausted or cannot achieve the objectives of an orderly resolution and under the premise that sufficient measures must be applied to recover public funds, as a preferred creditor, before non-delinquent members and other creditors.

In the event that the CCP's recoveries are not sufficient, extraordinary contributions from the private sector would have to be resorted to in order to avoid consequences for taxpayers.

Under the conditions described, its quantification could be sufficient to cover considerable losses in default and non-default scenarios, so this tool can be a very effective resource to achieve resolution objectives, especially in systemic crises. Temporary public funding may be more cost-efficient than a pre-funded resolution fund for a tail risk event with extremely low probability.

However, resorting to this type of measure may have significant political and media implications. It may also have significant legal and operational limitations, as it could be subject to public budget and borrowing restrictions. The availability of this instrument may not be immediate to the extent that it requires approvals and evaluations from different government or parliamentary bodies.

The main impact that this tool can have refers to the moral hazard that could affect the business of CCPs, by discouraging members from participating in risk management knowing that there is implicit public support. The regulation by the European Union contemplates certain conditions for its use in order to mitigate this moral hazard:

– The provision of this temporary public funding is necessary to preserve financial stability and achieve the objectives of an orderly resolution.

– Private funding sources have dried up or are unable to meet these targets.

– Effective and credible measures to recover losses suffered by the State are in place to minimise the risk of loss to taxpayers and so that incentives to support CCP recovery measures are maintained.

– Measures for the recovery of temporary public funds must be publicly disclosed and contemplated in the regulation to provide clarity and transparency, as well as an adequate legal basis for their collection.

– Resolution planning should not contemplate or rely on public support and should not create an expectation that such support will be available.

5 Analysis of additional or alternative resources

The effectiveness of a resolution regime for CCPs depends on the availability of adequate resources and instruments to absorb losses in order to maintain the continuity of essential functions.

At the international level, the FSB first published guidance on CCP resolution in 2017[28] and, recognising that it was necessary to continue working on the adequacy of the financial resources under resolution, published additional guidance in 2020[29] and at that time announced a commitment to carry out further work jointly with CPMI and IOSCO.

28 FSB (2017).

29 FSB (2020).

Thus, throughout 2020 and 2021, the FSB, CPMI and IOSCO held joint workshops on the potential impact on financial stability of CCP recovery and resolution, and in March 2022 jointly published a report on the financial resources of CCPs for recovery and resolution.[30] This report concluded that all the CCPs included in the sample would have had sufficient pre-funded resources in the recovery phase to face uncovered losses in the severe member default stress scenarios analysed, and only in one of the loss scenarios studied not from member default (cyberattack) would it have been necessary to use resolution powers in most CCPs. However, this analysis was conditioned by a series of limitations and hypotheses that make it necessary to interpret the results with caution.

Therefore, following this report, the FSB decided to continue to review from a qualitative point of view the adequacy of the existing toolkit for CCP resolution, focusing in particular on the necessity, costs and benefits (including effectiveness and impact in the incentives) of possible alternative financial resources and tools for the resolution of CCPs. This work is currently in progress and a document is expected to be submitted for consultation in early 2023 and a meeting will be held with the industry to gather their opinion and comments.

And despite the fact that history also corroborates the low probability of occurrence of this type of event, it is important to consider scenarios of "what would happen if something went wrong" and to be prepared for possible failures which, although unlikely, could have a very high impact. Recent and unforeseen geopolitical events demonstrate that the impacts could be even more extreme than past historical events.

For this reason, it is necessary to guarantee that adequate resources and instruments are available to manage the possible non-viability of a CCP, maintaining the continuity of essential functions in the event that resolution is necessary. A lack of suitable resources or tools would probably prevent the resolution authority from achieving its resolution objectives and could lead to greater financial instability.

Bearing in mind that the tools available to a CCP to deal with a recovery largely coincide with those that could be used in the resolution phase,[31] it could happen that once the recovery phase is exhausted, these tools are no longer available to the resolution authority.

30 FSB, CPMI and IOSCO (2022).

31 According to the guidance on planning the recovery of market infrastructures published by CPMI and IOSCO in 2014, updated in 2017 (CPMI-IOSCO, 2017), CCPs must have: i) tools to allocate uncovered losses caused by the default of participants (such as cash calls, haircuts, and the use of initial margin); ii) tools to address any liquidity shortfalls discovered (such as obtaining liquidity from third parties or from members themselves); iii) tools to replace the financial resources used in recovery (such as cash calls or recapitalisations); iv) tools to restore a matched book after a member's default (such as the forced allocation of contracts or the total or partial termination of contracts), and v) tools to allocate losses not caused by participant default (such as clearing house capital [known as "skin in the game"] and its recapitalisation, insurance or indemnity policies).

Unless resources and tools have been set aside for resolution, or the resolution authority can enter an early phase when adequate resources and recovery tools are available for resolution, it may happen that there are not enough resources and tools available in the CCP to support an orderly resolution without an adverse impact on financial stability.

Even in the situation in which some resources and instruments available to the CCP for recovery continue to be available to the resolution authority, such as variation gain margin reduction, haircuts and cash calls, these could have chain effects and a potentially adverse impact on financial stability, especially in scenarios of systemic crises and high stress. Consequently, even if the CCP or the resolution authority have them, the use of these resources in later phases could become destabilising and inappropriate in certain scenarios.

As part of the ongoing work of the FSB, five possible alternative financial resources and instruments reserved for the resolution of CCPs have been identified and are discussed in the following sections, as well as others that could also be considered.

5.1 Internal recapitalisation debt issuance (bailinable)

This is subordinated debt, ranked lower than other liabilities issued by a CCP, which could be applied to absorbing losses on resolution, both from member and non-member defaults, and to recapitalising the CCP. The CCPs would issue this type of internal recapitalisation debt in periods of business as usual for exclusive use in resolution, which would allow the resolution authority to convert such liabilities into equity or other proprietary instruments in the CCP or a successor entity.

To meet the liquidity needs in resolution, CCPs could additionally be required to keep the proceeds of these issues in highly liquid investments.

In order to avoid concentrating risk and putting further pressure on clearing members, restrictions could be applied to the holders of these products to reduce the risk of contagion and possible adverse effects on financial stability. Expanding the universe of potential investors would reduce procyclicality during periods of stress.

The main advantages of the internal recapitalisation bonds reserved for resolution are that they provide pre-financed resources and, therefore, a high degree of predictability. Its use can be carried out in a timely manner and with relatively little legal and operational risk, which facilitates its use in crisis situations, both idiosyncratic and systemic. The nature of this debt, subordinate to any other credit except the principal, should not alter the NCWO principle. At the same time, it could improve the market's confidence in the ability of the resolution authority to execute the resolution due to the greater security represented by the reinforcement of the CCP's resolvability.

The main drawback is related to the leverage of the CCP through the issuance of this debt, which entails an additional risk that must be adequately managed by the CCP. The cost of issuing internal recapitalisation bonds in amounts sufficient to be feasible for resolution may be too great to be borne by the CCP business. The magnitude of the cost would vary depending on the amount of the internal recapitalisation bonds issued, the risk-free cost of capital and the market's estimate of the probability that the CCP could enter into resolution. If anything, their impact on fee increases could reduce incentives to centrally clear products for which clearing is voluntary, especially if they are dedicated to covering losses from member defaults.

They may also be detrimental to the willingness of clearing members to engage in voluntary recovery measures, as there is an external level of protection against tail risk, but it would not equally affect the willingness of the clearing member to engage in contractually agreed recovery measures.

Finally, their effect on financial stability could depend on the possible implementation of restrictive measures on holding by clearing members for their protection when under pressure.

5.2 Resolution fund

This is a fund similar to the one existing in the European Union for the banking sector, which could be used to act as backstop in the event that the available resources were not sufficient or were not available on time. Therefore, in theory, it could be applied to absorb losses, recapitalise the entity and provide liquidity. It could also be used to compensate creditors for having suffered greater losses during resolution than during liquidation (NCWO).

The governance structure and design of a supranational fund would entail the participation of all resolution authorities, which could draw on its resources. Its management would be entrusted to a public sector entity with a governance regime similar to that of pre-financed deposit guarantee funds or bank resolution funds.

Both the covered CCPs and their clearing members would participate in its financing, which would contribute financing in a normal situation. The participation of other interested financial institutions and beneficiaries of the proper functioning of the markets and financial stability could also be considered.

5.3 Taking out a specific insurance policy for resolution

The purpose of the resolution insurance policy would be to cover losses and other resolution costs not covered by other financial resources available to the resolution authority. The use of insurance does not seem to be the most suitable tool to obtain liquidity, since its availability is not immediate. In the resolution phase, the insurance policy could be used both for member default loss scenarios and to cover non-default losses. Obviously, the greater the size of the coverage, the higher the premium that the CCP would pay and, therefore, the greater the impact on the business and the possible repercussion on fees and incentives to be centrally cleared.

Currently, most CCPs have insurance to cover losses not arising from member defaults. However, it may be difficult to find insurance companies willing to cover the risks in resolution scenarios, at least with an affordable cost for the CCP business.

To avoid risk concentration in the financial sector most interconnected with CCPs, potential insurers may be financial companies that are not significant participants in the CCP. The downside of this measure would be the possible contagion, especially in high stress scenarios, to sectors not initially affected by the crisis that the resolution measure would have originated.

5.4 Financial support from third parties in resolution

This support would be provided contractually by a third party (a bank or an insurance company), which in some cases could be the parent or another entity of the CCP's group, at the disposal of the resolution authority. These financial resources would be specified in the contractual documentation and could be structured in various ways (intra-group financial support, letters of credit, performance or advance payment guarantees).

As in the case of insurance, obtaining financial support from third parties to be provided in loss scenarios, especially in scenarios that affect the entire system, may not be realistic not only because of the cost that could be involved, but also because of the possible negative reputation regarding the financial soundness of the CCP and the foreseeable requirement of feasibility plans by third parties.

For this reason, intra-group support may be the most viable option, as many CCPs are structured as a subsidiary of a larger group and the CCP is typically not the most capitalised entity, while the parent company may have additional resources.

The parent company would have a significant incentive to support its CCP in order to avoid the reputational risk that the failure of the CCP could generate. However, there are also practical challenges to making this a viable option. If the parent company's support is in the form of a guarantee or compensation, its enforceability is not clear, and even less so if the parent company is not an entity regulated by the financial authorities.

However, its materialisation may mean a route of contagion to group entities that, in many cases, also carry out fundamental functions such as the management of regulated markets or central securities depositories.

Both insurance and third-party financial support can be effective in covering losses, especially those unrelated to member default, in recapitalising the CCP, and, in the case of third-party support, in providing liquidity. However, they have temporary limitations, since they may not have the necessary immediate availability, as well as legal and operational security related to the interpretation of the contract terms and conditions.

These tools offer the advantage that they would not place additional pressure on CCP clearing members, but could nevertheless lead to procyclical effects related to the potential need for insurers or financial support providers to liquidate assets at tense moments. They can also provide a contagion channel to sectors not initially affected by the crisis, by stressing the solvency of insurers and external providers of contractual support, in the event that they have to make significant payments.

The use of third-party insurance and financial support could increase the costs of centralised clearing and reduce the profitability of CCPs, although the impact on their business model would depend on how markets assess both covered risks and CCP resolution risks.

5.5 Other possible instruments reserved for resolution

The instruments analysed in this section are not the only ones that could be considered. It could also be evaluated, for example, the application of a bad bank scheme. Its main advantage would be its ability to return to a matched book without putting additional pressure on clearing members, because the defaulter position would be transferred to the bad bank. However, problems may arise such as the difficulty to enable its financing, since it is very possible that it required public support, and to estimate the transfer price; the adverse impact on the incentives of clearing members to cooperate in the default management process; the necessary speed to create said entity; the recovery of losses, and the requirement to provide guarantees before the liquidation of the positions.

Cooperation with the central bank as a lender of last resort should also be mentioned, as providing liquidity to the CCP in a crisis can be critical. In the European Union, only CCPs with a banking licence have access to central banks. Even though liquidity risk should be addressed without relying on central bank liquidity support, since ultimately it is the central bank itself that decides if, when and under what conditions to intervene, more standardised access to central bank facilities would help limit certain risks.

6 Conclusions

The change to centralised clearing, promoted since 2009 to improve transparency and mitigate systemic risk, has intensified the systemic importance of CCPs, as well as the interconnection between CCPs and banks through clearing services, among others (liquidity lines, settlement services, custody and investment). This change has promoted improvements in their resilience, recovery and resolvability, underscoring the need to better understand and consider their implications for financial stability.

There are essential differences between banks and CCPs in terms of their functions, structures, resources and risk profile. The main resources of the CCPs come from their participants (banks in general), through the mutualisation of losses, rather than from their own resources.

CCPs can also be very different from one another, either because of their size, business model, markets served or cleared products, or because of their corporate and governance structure, composition, the level of concentration of their clearing members and the interconnections with the financial system, which increase the potential for risk transmission throughout the financial market.

Consequently, it is essential to take into account these differentiating characteristics of CCPs, as well as different risk, idiosyncratic and systemic scenarios, when evaluating the feasibility and credibility, as well as the costs and impacts derived from the use of resolution instruments available in the event of possible non-viability.

Colour map: CCP resolution tools, effectiveness, operational risk and systemic risk FIGURE 2

Tools	Effectiveness	Operational risk	Systemic risk
Cash calls on non-defaulting members			
Variation Margin Gains Haircutting			
Total or partial termination of contracts			
Write-down and conversion of equity and debt instruments			
Sale of business			
Bridge CCP			
Public equity support			
Temporary public ownership			

High efficiency. Low operational and systemic risk
Moderate efficacy. Moderate operational and systemic risk
Low efficiency. High operational and systemic risk

Source: Compiled by the author.

The analysis carried out in this article shows that, in general, all the resources and tools have strengths and weaknesses, and can be more or less effective in a specific resolution scenario, without any of them, by itself, being able to satisfy all resolution objectives without presenting any type of inconvenience and with various effects for financial stability.

There is a broad international consensus on the appropriateness of making available to the resolution authorities a combination of non-prescriptive application resources and instruments, which provides flexibility to the authorities to determine the most appropriate solution based on the specific characteristics of the CCP in difficulties and the crisis that motivates it.

It is also possible that a consensus is reached on the appropriateness of having complementary tools to those up to now provided for in international principles and in regulations on the matter, to allow greater optionality to the authorities and, therefore, more opportunities to achieve better the resolution objectives through greater possibilities of combining instruments, such as the use of non-prefunded resources, less expensive at times of normality, with other pre-funded liquid resources, more reliable but also more expensive.

Given the potential impact that the definition of alternative or additional resolution resources to the current ones may have for the incentives during the recovery phase, as well as for the business models of the CCPs, this evaluation must take into account the perspective of both the resolution authorities as well as supervisors and the industry itself, in order to prevent adverse spillover effects and achieve a consistent and credible position regarding private sector resolution financing.

In the coming months, the FSB, in close cooperation and coordination with the CPMI-IOSCO, will continue to analyse this situation in order to improve knowledge of the implications and interactions between the different resources and instruments in order, where appropriate, to consider a possible revision proposal of the current principles or guidelines, always counting on the consultation of the industry, the interested parties and the academic world and with their participation.

Annex

Summary table: CCP resolution tools, efficacy, limitations, and potential systemic risk

TABLE 1

	Definition	Effectiveness	Limitations	Potential systemic risk
Loss allocation tools				
Cash calls on non-defaulting members	Cash contributions provided for in the CCP's operating rules to cover default and non-default losses. Normally included in the regulations of the CCP and subject to limits (twice the default fund contribution), which provides certainty to members.	**High efficiency** Provides additional non-prefunded resources to absorb losses, restore the CCP's ability to meet its payment obligation, replenish prefunded resources and recapitalise the CCP.	**Low/moderate operational risk** Normally its amount is limited, so it may be insufficient. Moral hazard for CCPs, which discourages risk management. Strain on member incentives if used to recapitalise the CCP with no compensation to members.	**Low/moderate systemic risk, but can become high in high-stress scenarios** Solvency and liquidity problems for members. Chain effects in stressed market conditions. Market liquidity stresses. Risk of contagion.
Variation Margin Gains Haircutting	Reduction of the payment obligations of the CCP in favour of the members with profit by market price. To cover losses in default and non-default scenarios. Listed in the CCP regulations, with temporary, quantitative or other limitations (one-time contribution to the default fund to cover non-default losses).	**High efficiency** It facilitates immediate access to liquid resources to absorb losses and provide liquidity.	**Low operational risk** Does not allow the CCP to meet its objective of ensuring compliance with obligations. Puts pressure on member and customer incentives. Hard to estimate a priori. Difficult to apply to clients. It can cause members and clients to seek an alternative CCP.	**Moderate/high systemic risk** Liquidity problems for members and clients. Risk of contagion. May trigger a liquidity spiral. Loss of confidence. Procyclical effects.

	Definition	Effectiveness	Limitations	Potential systemic risk
Position allocation tools				
Total or partial termination of contracts	Termination of contracts affected by the default, or if necessary, of all contracts, to restore a matched book in default loss scenarios.	**High efficiency** Allows a matched book to be restored. Avoids the forced allocation of positions.	**Low operational risk** Does not allow the CCP to meet its objective of ensuring compliance with obligations. Exposes members and clients to uncovered risks and position replacement costs.	**High systemic risk** Solvency and liquidity problems for members. Loss of confidence. Market liquidity stresses. Risk of contagion.
CCP loss absorption tools				
Write-down and conversion of equity and debt instruments	To absorb losses, recapitalise the CCP or the bridge CCP, or support the sale of business instrument. Shareholders' instruments should be written down prior to the use of loss allocation tools in favour of non-defaulting members or in conjunction with this measure, unless a different sequence is able to minimise deviations from the NCWO principle and better achieves the resolution objectives.	**Moderate efficacy** Contributes to loss absorption and recapitalisation of the CCP. Limited effectiveness, as the CCP's equity is relatively low and it does not have a significant volume of debt.	**Low operational risk** Funds readily available, though limited. If all the capital is not written down, there may be conflicts of interest between new and old shareholders that may jeopardise the resolution objectives.	**Low systemic risk** The impact on the market and on confidence depends on public perception of the design and controls of the CCP.
Asset transfer tools				
Sale of business	Sale of all or part of the CCP to another entity.	**High efficiency** To ensure the continuity of essential functions. It may be necessary to combine with loss absorption tools.	**Moderate operational risk** It is necessary to combine speed and a complex buyer search process.	**Moderate systemic risk** It will normally be necessary to maintain the confidentiality of the negotiation process.

	Definition	Effectiveness	Limitations	Potential systemic risk
Bridge CCP	The authority creates a bridge CCP to which the essential functions would be transferred. This could be sold at a later date. Non-essential functions would be wound down.	**High efficiency** To ensure the continuity of essential functions. It may be necessary to combine with loss absorption tools.	**High operational risk** Difficulties due to the necessary speed of the process and legal and financial complexity. May require transitory public support.	**Moderate systemic risk** The complexity of the process and the risk of not finding alternatives at the end of it can cause a loss of confidence.
Government stabilisation tools				
Public equity support	Public financial support for the recapitalisation of a CCP in exchange for instruments of ownership. Last resort. At the same time, the write-down and conversion of equity and debt must be implemented. Credible recovery plan by the State.	**High efficiency** Facilitates loss absorption and recapitalisation. Stabilises the CCP. Facilitates the instrumentation of transfer tools.	**High operational risk** Last resort measure that is temporary and conditional on recoverability. Puts stress on the incentives system to encourage members to participate in the lines of defence of the CCP and on the CCP itself to manage its risk.	**Moderate systemic risk** Puts resolution goals at risk. Moral hazard. Generates losses for taxpayers.
Temporary public ownership	The CCP would move into temporary public ownership through the transfer of instruments to the State. At the same time, the write-down and conversion of equity and debt must be implemented. Credible recovery plan by the State.	**High efficiency** Facilitates the instrumentation of transfer tools such as the bridge CCP.	**High operational risk** Last resort measure that is temporary and conditional on recoverability. Puts stress on the incentives system to encourage members to participate in the lines of defence of the CCP and on the CCP itself to manage its risk.	**Moderate systemic risk** Puts resolution goals at risk. Moral hazard. Generates losses for taxpayers.

Source: Compiled by the author.

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