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The legal framework for CCP default management processes

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Abstract. Central clearing offers numerous benefits to financial stability including multilateral netting of cleared exposures and the centralisation of default management. These benefits explain the pivotal role of central counterparties ('CCPs') in the post-crisis derivatives market reforms. However they lead to a key financial stability question: will CCPs be able to manage a large member default effectively?

There are various aspects to this question, and we concentrate on one of the least studied: the legal certainty of CCP default management practices. This aspect is important because the prospect of legal challenge to a CCP could be destabilizing, and the legal framework within which CCPs operate is a complex and, in some areas, newly constructed one.

We evaluate the diverse legal rules governing CCP default management by investigating the extent to which they provide adequate legal certainty. The paper discusses the processes of clearing and collateral posting in detail, establishing the nature of the rights which CCPs rely upon when managing defaulting members. We then consider the relationship between CCP default management processes and insolvency law, as defaulting members are sometimes (but not always) insolvent. This leads to an evaluation of the legal issues arising along a typical default timeline of default declaration; returning to a matched book; and use of the defaulter's collateral.

Our findings are that English and EU law provide legal certainty for many aspects of CCPs' default management processes, but some challenges remain. One set arise through the piecemeal nature of the legislative framework, while others turn on the importance of CCPs' contractual drafting being as robust as possible. The paper concludes with recommendations on both legislative and drafting issues.

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1. Introduction

One of the central characteristics of financial markets is change. New products are developed, and a small percentage of these succeed. New market infrastructure is promulgated, and this alters both the capacity of and the balance of risks in the financial system.

Law forms an important part of this infrastructure. It is a central requirement for a robust, stable financial market. As Goff LJ put it[1]

> *"It is of the utmost importance in commercial transactions that, if any particular event occurs which may affect the parties' respective rights under a commercial contract, they should know where they stand."*

Thus legal certainty means not just that the outcome is certain in a particular commercial situation, but that this outcome is broadly known and expected by market participants.

The growth of over-the-counter ('OTC') derivatives markets since the first swaps were traded in the early 1980s has been substantial.[2] The development of effective legal infrastructure has been a key component of this success. This infrastructure has both legislative and private law (contractual) elements. For instance, European Union legislation provides legal certainty around the use of financial collateral – a key risk mitigant in OTC derivatives – while the standardised contractual documentation developed by the International Swaps and Derivatives Association ('ISDA') has enjoyed considerable success in many jurisdictions.[3]

Successful markets do not always evolve steadily towards ever-more-successful structures. Rather, their evolution is sometimes characterised by 'surprises' when market participants become alert to a new risk or feature which causes them to alter the nature of a product or features of their infrastructure.[4] The evolution of products and market infrastructure tends to speed up after a crisis, simply because crises often stress markets in unforeseen ways. For instance, there tend to be many more defaults during stressed periods, and it is only when an entity defaults that the effectiveness of measures designed to mitigate the impact of failure can be fully tested.

The credit derivatives market provides several examples of evolutionary jumps following stress. Box 1 gives a short history of the major changes to credit derivatives documentation highlighting three changes each occurring after the market became aware of certain (perhaps unintended) features of the standard contractual documentation following unforeseen events.

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[1] *Scandinavian Trading Tanker Co AB* v *Flota Petrolera Ecuatoriana* (The Scaptrade) [1983] QB 529.

[2] See the BIS *Semiannual OTC derivatives statistics* available at http://www.bis.org/statistics/derstats htm for details of this growth.

[3] See, respectively, *Directive 2002/47/EC*, known as the Financial Collateral Directive and ISDA's website at http://www.isda.org.

[4] In terms of evolutionary biology, financial markets display 'punctuated equilibria' rather than phyletic gradualism. See N. Eldredge, S. Gould, *Punctuated Equilibria: an alternative to phyletic gradualism*, in T. Schoepf, (Ed.), *Models of Paleobiology*, Freeman Cooper (1972).

Box 1: The evolution of credit derivatives documentation

Credit derivatives are instruments which are designed to transfer credit risk from one party to another. There are many aspects to credit risk, and hence many choices as to which risks exactly are transferred. There have been three major changes in the legal infrastructure used to document credit derivatives, reflecting three changes of view by market participants about which risks they wished to transfer:

1. The first occurred in 1999 when ISDA issued the first credit derivatives definitions. Prior to this, market participants used a wide range of different agreements with different behaviours.[5] For instance some were structured as American put options on the price or credit spread of the underlying reference bond, and some as a form of swap where one party paid a series of premiums in exchange for the right to deliver a fixed amount of bonds to the other and demand payment of their par value if a *credit event* happened. This latter form of product, the credit default swap (or 'CDS'), became dominant after 1999.

2. By 2001 it had become clear that it was by no means simple to define what a credit event should be. There had been a number of surprises in the economic effect of the 1999 credit derivatives documentation relating to this problem.[6] Therefore in 2001 ISDA issued a supplement to the 1999 definitions to attempt to rectify this credit event problem, and these changes were incorporated into a new set of credit derivatives definitions in 2003.

3. The authorities' reaction to the 2008 financial crisis included measures relevant to CDS. In particular, in a crisis banks' bonds could sometimes be bailed in, with their holders potentially being given a package of assets to replace the bailed-in bond. This package could for instance consist of equity as well as debt instruments. The authorities also intervened in some institutions, instructing them not to pay coupons on certain debt instruments. Neither of these phenomena were handled wholly satisfactorily in the 2003 definitions, so in 2014 ISDA issued revised documentation.

OTC market infrastructure more broadly has also followed this pattern of 'evolution after stress'. Some of the current features of the market are well-tested: the effectiveness of the ISDA Master Agreement in netting transactions has survived a number of challenges, for example.[7] Other features of the market are relatively new and therefore often untested. For example, OTC derivatives central clearing has a relatively short history, and many OTC derivatives clearing services were only developed post-crisis. This novelty means that they have not experienced the range of stresses that

[5] Most of these early agreements were based on ISDA documentation, but they often involved taking documentation written for one purpose and modifying it to define a credit derivative. For instance, some hybrids were based on bond option documentation, while others used interest rate swaps as their starting point.
[6] One prominent issue was that bonds could be restructured without the issuer defaulting. Early market participants therefore often included restructuring as a credit event as this could cause substantial losses to bond holders. However as the restructuring of the American insurance and financial services company Conseco demonstrated, there can also be restructurings which do not cause large losses. However, if they trigger CDS, they allow protection buyers to deliver bonds which are trading well below par for other reasons. See A. Bomfim, *Understanding Credit Derivatives and Related Instruments,* Academic Press (2005) for a further discussion of the evolution of the definition of credit event through various iterations of ISDA documentation.
[7] See M. Bridge and J. Braithwaite *Private Law and Financial Crises* (2013) Volume 13 Number 2, Journal of Corporate Law Studies 361 for a discussion of recent litigation involving the ISDA Master Agreement, and in particular analysing the Court of Appeal's decision in the key ISDA Master Agreement case of *Lomas* v *JFB Firth Rixon Inc* [2012] EWCA Civ 419.

older features of the market have weathered, and the cleared market does not enjoy the wealth of case law that the uncleared market does. Since, in the words of Benoît Cœuré, the default of a central counterparty ('CCP') would have "dramatic consequences" for financial stability,[8] it is particularly important to ensure that central clearing arrangements are robust. Thus the lessons for central clearing from other, more battle-tested areas of finance may be important.

The potentially destabilising effects of unexpected legal challenge to central clearing arrangements must be considered here. Even if a clearing house were ultimately to prevail against legal challenge, this victory could take some years. If the sum at stake were large, and market participants were to view the outcome as uncertain until it were finally decided, this could destabilise the clearing house. Therefore it is not just the fact of legal certainty that is important, but also the perception that a substantive challenge is unlikely to succeed.

Against this background, this paper examines the robustness of central clearing through this lens of legal certainty. The principal objective is to evaluate the diverse legal rules governing CCP default management, by asking to what extent they provide adequate legal certainty. It also considers the degree to which lessons may be drawn from other, more evolved sectors of the financial markets.

First, though, some background on CCPs and the practice of central clearing is needed.

1.1 Central clearing and central counterparties

Central counterparties ('CCPs') are components of financial market infrastructure which intermediate transactions, thereby guaranteeing performance. Thus in OTC derivatives, instead of two parties having a direct contractual relationship with each other, the CCP steps between them, becoming buyer to every seller in a market and seller to every buyer.[9]

Central clearing brings several key benefits to the OTC derivatives markets:

- CCPs impose *trade standardisation*. This improves market liquidity and transparency and makes default management easier.
- A CCP stands between its members on all cleared trades. This means that a CCP's exposure on each cleared portfolio is just the net position. Thus, in contrast to the bilateral market where each pair of counterparties are separately exposed to each other, CCPs facilitate *multilateral netting* of all cleared transactions with a single counterparty.
- If a member fails to perform, CCPs centralise the management of the default.

These benefits are considered so important to financial stability that post-crisis regulatory reforms, such as the European market infrastructure regulation known as 'EMIR',[10] mandate central clearing

[8] Speech by Benoît Cœuré, *Mapping and Monitoring the Financial System: Liquidity, Funding, and Plumbing* Conference, Washington DC, 23 January 2014.
[9] For more central clearing generally, see D. Murphy, *OTC derivatives: bilateral trading and central clearing*, Palgrave Macmillan (2013).
[10] The regulation popularly known as EMIR is *Regulation (EU) No 648/2012 on OTC derivatives, central counterparties and trade repositories*. It is part of a package of post-crisis reforms to the European financial market infrastructure, which also includes *Regulation (EU) No 909/2014 on securities settlement and on Central Securities Depositories* (the 'CSDR') and amendments to the 'Settlement Finality' *Directive 1998/26/EC* and the 'Financial Collateral Arrangements' *Directive 2002/47/EC*.

for certain standardised transactions and provide an incentive for its use through higher capital and margin requirements for uncleared OTC derivatives.[11]

1.2 The robustness of OTC central clearing

As noted above, regulators have mandated central clearing to enhance financial stability, but this policy will only succeed if CCPs are robust. There are several aspects to clearing house robustness:

- CCP failure must be highly unlikely. Thus CCPs must be very well protected against the risks that they run, both operationally and as a result of their market intermediation;
- CCP operations must be highly reliable; and
- CCP processes must be legally certain.

Various papers have explored aspects of these issues,[12] with the last of them being least-discussed in the literature. To redress this balance, this paper focusses on the legal robustness of clearing arrangements, discussing the sources of strength and the areas where particular care, and potentially even reform, is needed. Our principal focus is on English law, as this is widely used, not just by UK-based clearing houses.[13] We also consider EU law, as it applies in the UK, and certain details of international custody arrangements.

The legal framework which supports clearing arrangements has many components, all of which have developed over time. The common law is important, as is insolvency law, the English and European legal frameworks supporting the use of financial collateral, and a number of pieces of recent legislation focussing specifically on central clearing or impacting it. Moreover, the framework for OTC derivatives clearing was sometimes built on the earlier framework for bilateral derivatives trading, so issues which arose first in this space (such as the obligations of a non-defaulting party to a defaulter) are sometimes relevant. A second contribution of this paper is to survey how these disparate elements connect and overlap.

1.3 CCP default management

CCPs are default risk managers: a principal reason for their use is that they act as shock absorbers, preventing the default of one financial institution from having a 'knock on' effect on the rest of the system. In order to do this, they need financial resources to provide loss absorbing capacity. Box 2 sets out some of the key terminology in central clearing and provides a high level account of the typical structure of CCP financial resources.

Financial resources alone are not enough to ensure that the CCP fulfils its role. It also needs a robust, legally certain process for managing defaults. EMIR acknowledges this, requiring in Article 48 that a 'CCP shall verify that its default procedures are enforceable.'

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[11] This twin approach was set out in the *G20 Leaders' Statement*, Pittsburgh, 2009. For a summary of international progress on the implementation of the central clearing commitment and capital requirements for non-centrally cleared derivatives, see Financial Stability Board, *Ninth Progress Report on Implementation* (24 July 2015).

[12] See for instance D. Murphy, P. Nahai Williamson, *Dear Prudence, won't you come out to play? Approaches to the analysis of CCP default fund adequacy*, Bank of England Financial Stability Paper No. 30 (2014) or D. Elliott, *Central Counterparty Loss Allocation Rules*, Bank of England Financial Stability Paper No. 20 (2013).

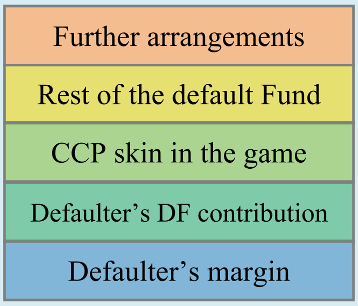
[13] For an analysis of the robustness of CCPs in the US following the 2010 Dodd-Frank Act's clearing mandate see R. Squire, *Clearinghouses as liquidity partitioning* (2014) 99 Cornell Law Review 857, explaining the underlying legal framework for CCPs in the US and highlighting the beneficial effects of CCPs' liquidity partitioning.

Box 2: Central clearing terminology and CCP resources

Parties who face a CCP directly are known as *clearing members*. CCPs set operational and financial criteria which determine who they will accept as clearing members. Other parties who wish to trade cleared derivatives do so as *clients* of clearing members.

The CCP defines its relationship with its clearing members through its *rules*. These set out what is required of clearing members, and hence when they can be declared in default.

CCPs are directly exposed to the performance of their clearing members. Under normal circumstances, they are *risk flat*, as each cleared trade has a matching buying and selling clearing member. If a clearing member defaults, the CCP steps in to manage the defaulter's position. To mitigate the risk of losses here, CCP users are required to post both *initial* and *variation margin*. A user's margin is available to absorb any losses that might accrue due to its non-performance.



There are additional resources available, too. Typically clearing members put up an additional mutualised *default fund* ('DF'). CCPs often also make some of their own capital ('skin in the game') available to absorb any losses above a clearing member's margin and default fund contribution.

A typical *default waterfall* is illustrated opposite. There may also be additional unfunded resources available, such as the right for the CCP to call for additional default fund contributions.

Margin has two components: variation margin reflects the current mark-to-market of the poster's cleared portfolio (and thus typically flows through the CCP to winners from losers), while initial margin is an additional amount required by the CCP to cover changes in value of the portfolio between the last successful variation margin payment and post default close out to a high degree of confidence. Cash is typically used for variation margin, while high quality liquid securities (as defined by the CCP) are often used for some fraction of initial margin.

CCPs typically guarantee (or at least undertake to try to provide) some return on cash initial margin posted to them. To achieve this, they invest this margin. These investments are typically high quality (to reduce risk of loss) and often short term (to ensure that the CCP has funds available when needed).

Clearing members are required to post margin both on their own *house accounts* and on all client accounts. CCPs' margin requirements are often passed on to clients, but the clearing member can also often *call* them for additional margin, for instance if it is troubled by the client's credit quality. The terms of margin posting are defined in a *client clearing agreement* ('CCA') negotiated bilaterally between the clearing member and the client.

Clearing members guarantee their clients to the CCP. In the EU, they do this under the *principal to principal* model, meaning that the client has a contractual relationship with their clearing member, and the clearing member one with the CCP. There is no contractual relationship between client and CCP. Indeed, sometimes a CCP might not know the identity of some of its members' clients.

There are three key stages to the process of managing a default at a clearing house:

> *Stage One: Declaration of default.* The first step in CCP default management is for the CCP to determine that a clearing member is in default under its rules, and to make a formal declaration of that determination. The information to support this determination will either come from public sources, such as a bankruptcy filing, or from the failure of the clearing member to adhere to the CCP's rules, for instance by not posting margin when it is due. Thus a member can be in default at the CCP before the start of insolvency proceedings, or without becoming insolvent at all. In particular, it can be in default at the CCP without its failure to perform being public.
>
> *Stage Two: Returning to a matched book.* A CCP usually has equal and opposite obligations on cleared positions. If a clearing member is in default, the CCP becomes unbalanced: it has to continue to perform on its obligations with non-defaulting counterparties, without the benefit of the defaulter's performance. It therefore has to return to a matched book. There are two broad approaches to default management: either the defaulter's portfolio is immediately sold or auctioned (perhaps in two or more pieces); or the CCP seeks to hedge some of the risk in the portfolio, then to liquidate the hedged position.[14]
>
> *Stage Three: Collateral management.* At the same time as the CCP is managing the defaulter's position, it also needs to mobilise the resources it has available to absorb the losses caused by the default. The first step here is to gather the defaulter's margin. For cash, this may involve terminating investments (or not rolling them, in the case of overnight reverse repos). For securities, it may require that the CCP takes them from the defaulter's account and sells them.
>
> Once the costs of returning to a matched book are known, they can be allocated. Typically the defaulter's collateral is more than sufficient to cover the loss, so the CCP will have excess funds to return to the defaulter's estate. If not, it must allocate any loss over margin according to the remaining steps in its default waterfall.

The proven capacity of CCPs to use their default process to manage the portfolio of a failed member in a timely and certain manner, evidenced during the 2008 crisis and elsewhere,[15] helps to explain the G20's choice to impose mandatory clearing across the global OTC markets. We noted above that these mechanisms and the legal framework supporting them are not as 'battle tested' as some, and that stress events often generate case law with outcomes which were not always foreseen by market participants. The possibility that unexpected legal risks may emerge and severely disrupt the operation of default arrangements when they are needed the most must therefore be considered despite CCPs' manifest success in the past. In particular, timely close out and the absorption of any losses thus realised are an important defence for clearing houses, so it is vital that the process by which this is achieved is both legally and operationally robust.

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[14] If the defaulter is also clearing on behalf of clients, Articles 48 of EMIR obliges CCPs to 'trigger the procedures' for transferring or *porting* those positions to another member. The process of porting may be challenging in law and in practice. This paper does not address the topic of porting in detail. For a discussion of porting of client assets and positions under the principal to principal model, see D. Turing, *Clearing and Settlement in Europe*, Bloomsbury Professional (2012).

[15] See the February 2010 evidence of LCH.Clearnet to the House of Lords EU Committee, stating that the losses caused by the failure of Lehman Brothers were covered by 35% of Lehman's initial margin. House of Lords EU Committee, 10th Report of Session 2009-10, *The future regulation of derivatives: Report with Evidence*, HL Paper 93 (31 March 2010).

1.4 Structure

The rest of this paper is structured as follows. Sections 2 and 3 discusses the process of clearing and collateral posting in more detail, looking at clearing relationships and collateral respectively, while Section 4 discusses the legal background to default and the default management process in more detail. Subsequent sections then discuss each of the three stages of default management. Specifically:

- Section 5 considers default declaration;
- Section 6 reviews the process for returning to a matched book; and
- Section 7 analyses issues around the seizure and liquidation of the defaulter's collateral.

The paper concludes by setting out some of the implications of our analysis for market participants and policy makers.

2. Clearing relationships

Central clearing involves a network of relationships between the CCP, its members and their clients. Each link in this network consists of one or more bilateral contracts, underpinned by common law and legislation. In this section we examine these contractual relationships and present some relevant legal background on contracts under English law.

2.1 Clearing agreements and client clearing

The bilateral relationships in central clearing include the clearing agreements between the CCP and its members, incorporating the CCP's rules and, one step on, the client clearing agreements negotiated between clearing members and their clients. Figure 1 illustrates this network with six clearing members including two client clearers.

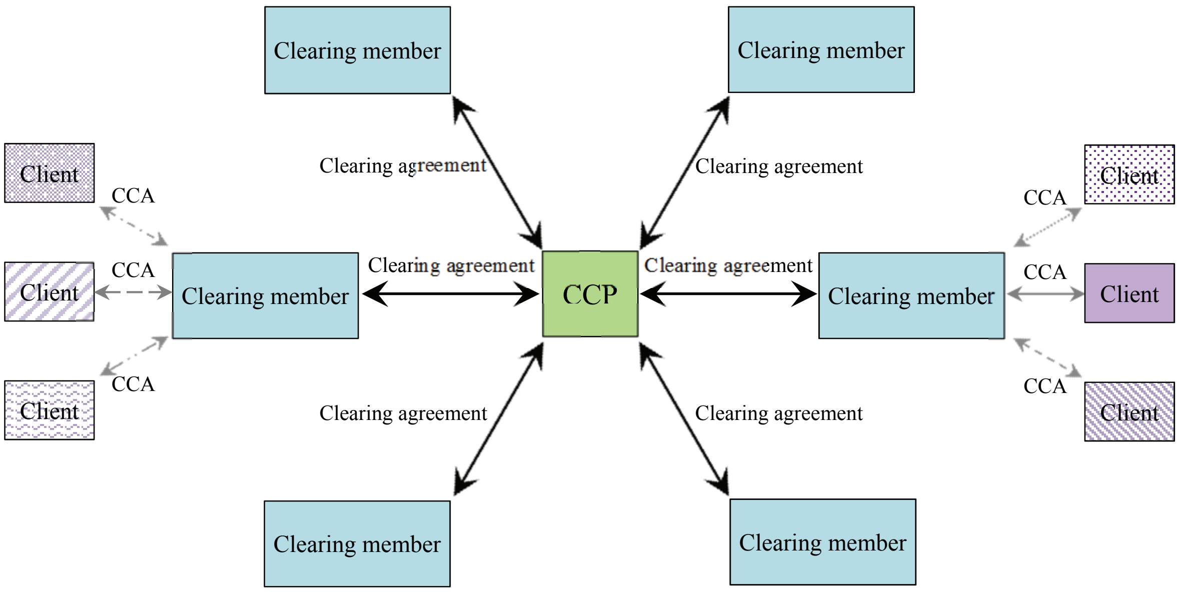

Figure 1: Contractual Relationships in Central Clearing

It is important to note that while there is considerable uniformity in the clearing agreements between the CCP and its different clearing members, this does not carry over to client clearing agreements ('CCA's). These differ from clearing member to clearing member, and indeed different clients of the same clearing member may have different client clearing agreements.

This diversity means that the legal position of clients is variable, depending in many ways on the nature of their CCA. Partly for this reason, and partly for reasons of length we do not discuss client clearing further in this paper.

2.2 Contracts

Generally speaking, English law seeks to uphold freely negotiated financial contracts. However, it is not infinitely supportive. For example, contractual arrangements may be declared invalid because of mandatory insolvency law, or for uncertainty, or because their provisions are recharacterised by the court. Famously, certain financial contracts have been declared void by the courts because they were outside the capacity of one of the parties to enter into them in the first place.[16]

As we noted above, CCPs' default management (and other) processes are based on private contractual arrangements between the CCP and its members. On the face of it, these arrangements are therefore subject to the same vulnerabilities as any contract. In fact, as we discuss in Section 4, some aspects of central clearing arrangements are 'special' in that they are protected by specific legislative safe harbours. Therefore CCPs need to be aware of the usual background to making a binding contract, as well as of the specific rules that apply to central clearing arrangements.

It seems unlikely that a typical clearing agreement between CCP and member would fail to be enforceable due to any of the classic legal pitfalls.[17] However, care should be exercised to avoid disputes arising about the binding status of other dealings between a CCP and its members, particularly in the midst of a default. In the past, for example, disputes have arisen about whether a conference call between a stressed sugar trader and its brokers constituted a binding agreement to liquidate the trader's positions in a co-ordinated way. This dispute proceeded to the Court of Appeal which ultimately found that the ingredients for a binding contract were not met.[18] The fact that the case proceeded to appeal illustrates the importance of establishing the right contractual arrangements and processes before they are needed, and then in adhering to them during the heat of default management.

[16] See the 'Hammersmith & Fulham swaps' case, *Hazell* v *Hammersmith and Fulham London Borough Council* [1992] 2 AC 1.

[17] These pitfalls are, in summary, contractual uncertainty, the lack of capacity by one or both parties to enter into the contract, or because of the absence of one of the pre-requisites of a binding agreement in English law (offer and acceptance, intention, and consideration).

[18] The situation discussed here (other aspects of which are discussed further in Section 5) was initiated by the distress of Fluxo-Cane Overseas Ltd. The firm was declared subject to special measures by the exchange as it judged that a 'Financial Emergency' might exist. It was later closed out by certain of its brokers. Prior to the close out, Fluxo-Cane participated in a conference call and round table meeting with its ten brokers. A dispute subsequently arose about whether during this meeting the parties had entered into a binding agreement that the brokers would act in a co-ordinated way rather than closing out Fluxo-Cane's positions unilaterally. In a long judgment considering the transcript of the call in great detail, the Court of Appeal unanimously found that no such binding agreement had been formed. This case serves as an important warning about the need for certainty around the status of dealings in the heat of default management. See, for example, *ED&F Man Commodity Advisers Limited* v *Fluxo-Cane Overseas Limited* [2009] EWCA Civ 406.

3. Collateral

Collateral is the first element of the financial resources which protect against counterparty credit risk in most CCPs, as discussed in Box 2.[19] Since counterparty credit risk is usually the most important risk run by clearing houses, the robustness of a CCP's collateral arrangements is essential to its overall safety. This section addresses the nature of collateral postings and sets out some legal background on these arrangements.

3.1 Collateral

Collateralisation involves the provision of *property rights* to satisfy claims. The main motivation for collateralisation is to reduce the collateral taker's exposure if the provider fails to perform. If a debtor becomes insolvent, all creditors with unsecured claims rank *pari passu* (i.e. they will share rateably in the available assets) and they are likely to recover only a fraction of their debt. By contrast, a creditor who is also a collateral taker has rights against the property of the insolvent, and it can use this property to reduce or eliminate the amount owed.

Two types of collateral are important in central clearing: cash and securities. We deal with each in a subsequent section.

3.2 Cash collateral

Cash is the most common form of collateral in central clearing: nearly all variation margin is in the form of cash, and much initial margin is provided as cash too.[20]

In the clearing context, cash collateral is often provided using one or more *payment* or *concentration banks*. That is, both the clearing member and the CCP have an account at the same bank, and the actual margin posting is made by the CCP instructing that bank to move funds from the clearing member's account to its own account. Thus rather than margin posting being a process of the clearing member 'pushing' collateral to the CCP, the clearing agreement allows the CCP to 'pull' it from the account of the clearing member. It is, of course, the clearing member's responsibility to ensure that it has sufficient funds in the account to facilitate the margin posting, and the CCP will provide information on upcoming margin calls to give the clearing member information on what funds it will need to have available. Once cash initial margin has been paid into the CCP's account, the CCP will then invest it. Figure 2 illustrates the cash flows.

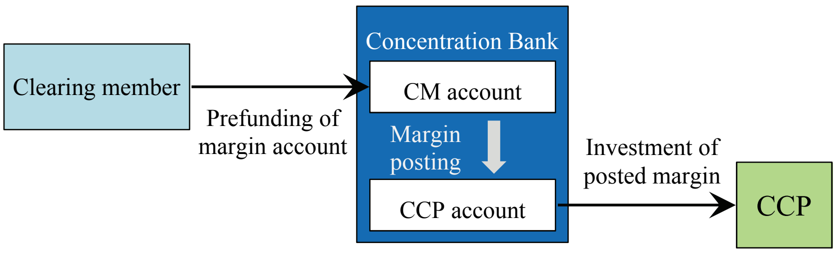

Figure 2: The cashflows in one model of cash margin posting

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[19] Article 2(3) of EMIR defines clearing as 'the process of establishing positions, including the calculation of net obligations, and *ensuring that financial instruments, cash, or both, are available to secure the exposures arising from those positions*' [authors' emphasis].

[20] A prominent exception is *contingent variation margin* arrangements where instead of variation margin flowing through the CCP from losers to gainers, credits and debits are made to a net margin account at the CCP. Crucially if the total (initial plus variation) flow on a given day is positive, i.e. the CCP owes the relevant account money, then this remains as a credit, without cash actually being paid.

Cash collateral is typically provided by *title transfer*: the flow described above is an example. This can be thought of as outright ownership of the collateral asset – the cash – passing from the clearing member to the CCP. More precisely, because cash held in a bank account comprises a claim against the bank,[21] the posting is achieved by *book entry*: no actual property is transferred between member and CCP. Rather, the clearing member's claim against the bank for the sums in its account will be cancelled or reduced, and a corresponding claim created or increased for the CCP against the bank. Note that in this case, a member posting cash collateral retains no interest in it. Instead, the member has a debt or monetary claim against the CCP in an amount equal to the cash collateral (and which is due once its obligations are extinguished).

If securities are provided as collateral and they mature into or generate cash, the collateral provider may find that it has no property rights in this cash. If this is not the intent, it is important that the treatment of any cash arising from securities collateral is addressed in the collateral agreement between the parties.[22]

3.3 Intermediated securities

Most CCPs accept a range of securities for initial margin posting in addition to cash. Typically the clearing house will limit eligibility to high quality liquid securities such as highly-rated government bonds. It may also put limits on what fraction of initial margin can be provided in the form of securities and on the concentration of securities collateral positions. Moreover a *haircut* will usually be applied, so that 100% credit is not given for the value of the security, but rather some lower amount such as 95% of its value.

Before discussing how securities are posted as collateral, it is important to understand how many securities are 'owned'. The typical bond in the modern financial system is not a piece of paper whose possession embodies ownership. Instead a *book entry system* is typically employed. In practice this can mean that there is a chain of ownership between issuer and investor, with several components:

- The issuer will issue the bonds in global form to a central securities depository ('CSD').
- The CSD owns the underlying bond, *immobilising* it. The CSD then operates a book, recording ownership of interests in the bond.
- These interests are often held by *custodians*.[23] These are typically large banks who act for investors. They may in turn use one or more *sub-custodians*.
- A given beneficial owner (the investor) will typically have a preferred custodian for some or all of its securities-related activities.

Thus, when it is said colloquially that a given clearing member 'owns' a bond, say, it might really be the case that the clearing member owns an interest in its custodian's interest in the bond as held at the

[21] The depositor-is-creditor/bank-is-debtor character of a cash account with a positive balance was established in the nineteenth century case, *Foley* v *Hill* (1848) 2 HLC 28.
[22] In a recent case prime brokerage clients of the Lehman Brothers entity LBIE saw their securities, which had been held on a custody basis, mature into cash during the administration process. There was a risk that, as a result, their property rights had been lost and they had become general creditors, as under the principle for bank depositors set out in *Foley* v *Hill*. This risk was averted when the court implied a term into the prime brokerage agreement which meant that, in this situation, the cash would also be held on trust for them. See *Re Lehman Brothers International Europe Limited* [2009] EWHC 2545 (Ch).
[23] For more on custody, see D. Chan et al., *The securities custody industry*, ECB occasional paper series No. 68 (2007).

CSD.[24] The term *intermediated security* is used to reflect the chain of interests between issuer and investor described above.[25]

3.4 Comingling and segregation

A key feature of modern intermediated securities arrangements is that *comingling* is often present. That is, while the books of the custodian will typically reflect which of its clients owns which interest in a given security, the CSD may only record a single interest from the custodian's clients.

The term *segregation* is typically used to describe arrangements whereby client assets are held or recorded separately from house (or proprietary) assets, with the intention that they should be remote from the bankruptcy or insolvency of the holder. This situation is nuanced for several reasons:

- It is important to understand which level in the intermediation chain is being referred to, and what degree of segregation is being described. An interest in a security may be segregated at the level of the custodian, for instance, in the sense of being identified on the custodian's books as an asset of clearing member *X*, but the corresponding instrument on the CSD's books may not be similarly segregated.
- Accounts can be legally separated but operationally comingled (a form of segregation known as 'LSOC' and which forms a key part of US cleared margin arrangements). That is, a client might have a legal right to a particular amount of a security held elsewhere, but operationally that security is held in an account where it is comingled with the interests of other clients.

The combination of book entry arrangements, intermediation, comingling, and differing degrees of segregation creates a complex (if reasonably efficient) system of securities holding. This in turn forms the basis for modern collateral practices involving securities.

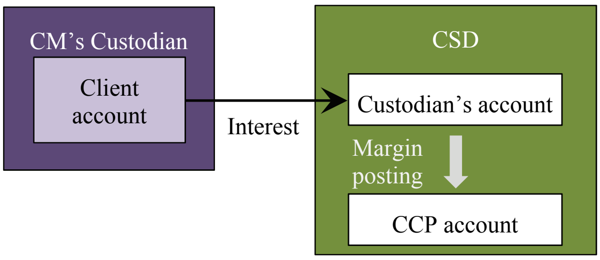

Figure 3: The flows in one model of securities margin posting

3.5 Intermediated securities as collateral

There are a number of models of posting securities collateral to clearing houses depending on the collateral type and the collateral agreement. One common one is shown in Figure 3.[26] Here:

- The CCP has an account at the CSD;
- The clearing member's custodian also has an account at the CSD;

[24] Other arrangements are possible too. In particular it should be noted here that in the UK's settlement system CREST, legal title is determined by registration, so book entry transfer in CREST transfers legal title to the security, not just to an interest in the security. See *Uncertificated Securities Regulations 2001/3755* ('CREST regulations'), Regulations 24(1) and 38(5).
[25] For more details on intermediated securities and CSDs, see D. Turing, *Clearing and settlement in Europe*, Bloomsbury Professional (2012) or J. Benjamin, *Interests in Securities*, Oxford University Press (2000).
[26] This model only works where the CCP can open an account in its own name at the CSD and it can settle securities into that account. If that is not possible or practical, it may need its own settlement bank and custodian. The EMIR regulatory technical standards require that if a CCP can use the CSD, it must.

- The clearing member effects posting of securities collateral by instructing its custodian to settle a transfer of the securities into the CCP's account.

Operationally this looks like a title transfer: the CSD records the CCP as having title to the security, and if for instance the security pays a coupon or matures, those funds will be passed to the CCP. However, understanding the nature of the rights so transferred requires an explanation of the nature of interests in securities, and in particular an important legal concept which allows us to separate legal from beneficial ownership, as we explain next.

3.6 Trusts and security interests

A trust in English law is a legal relationship in respect of assets between:

- A person or persons known as the trustees; and
- A person or persons known as the beneficiaries; whereby
- The trustee holds the assets on behalf of the beneficiaries.

The trustee is obliged as legal owner of the entrusted property to deal with it for the benefit of the beneficiaries, and any of these beneficiaries may enforce the obligation. The precise obligation will usually be documented, so the trustee's duties are defined.

In English law, the concept of trust is used to characterise modern securities custody arrangements. The custodian holds the client's interests as trustee: similarly the CSD holds the rights in the bonds as trustee for the custodian.[27] Overall, there is a chain of interests in securities, held on trust by one party for another. This analysis also helps to understand collateral posting by clearing members, where the collateral concerned is made up of interests in securities. There are two possible arrangements, either or both of which may be supported by a given CCP:[28]

1. The collateral provider (i.e., the clearing member) can pass full title in its interest in the securities to the CCP, with some contractually-documented right to get equivalent collateral back once its obligations under the agreement are fulfilled (a *title transfer collateral arrangement*);[29] or
2. The collateral provider can grant a *security interest* over its collateral to the CCP.

In this second situation the flows in Figure 3 would be characterised as the CCP acquiring rights in the clearing member's custodian's interest in the securities, subject to the terms of the collateral agreement between them.

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[27] Our analysis follows M. Yates and D. Montague, *The law of global custody*, Bloomsbury Professional (2013). They characterise the custody relationship, following *Hunter v Moss* and *Re Stapylton Fletcher Ltd*, as one where the custodian holds assets in a comingled client account and the clients are equitable tenants in common, with the custodian acting as their trustee. (See *Hunter* v *Moss* [1994] 1 WLR 452 and *Re Stapylton Fletcher Ltd* [1994] 1 WLR 1181.) This is wholly consistent with Brigg J's description of the relationship in *Re Lehman Brother International (Europe)* [2009] EWHC 2545 (Ch), an important English law case concerning holdings in intermediated securities.

[28] For a detailed account of the law of proprietary protections for creditors, see L. Gullifer and J. Payne, *Corporate Finance Law: Principles and Policy*, Hart (2015).

[29] Note that the right to get title-transferred collateral back on the default of the collateral taker is only enforceable against the taker personally, not against the collateral itself. Thus if there is a degree of over-collateralisation – 105 of collateral value given against 100 of exposure, for instance – the claim for the return of the excess is unsecured. Moreover, if the collateral takes the form of securities where legal title is immobilised at a CSD, the transfer may well be of an equitable interest in the security. This means that the transferee may be vulnerable to pre-emption of its claim (for instance arising from its notice or knowledge as are discussed in section 5.3 below).

The choice between the arrangements depends on a variety of operational and legal considerations.[30] For instance, in title transfer, the collateral taker has full ownership of the asset and thus (as least absent any other restrictions) can use it as they wish. This is important for cash collateral, as the taker will typically need to earn a return on cash: CCPs typically do this by investing in reverse repos or high quality securities. On the other hand, collateral providers may prefer security interest arrangements which (absent express agreement) do not allow the collateral takers the right of reuse over the collateral, as their assets may be easier to recover if the collateral taker fails. EMIR partly addresses this concern by requiring CCPs and clearing members to offer clients *individually segregated* accounts. These keep client assets distinct from those of other clients and of clearing members, and thus provide another means to reduce the risk that the collateral may be lost upon the failure of a clearing member. They also insulate the client from the risks created by other clients.

Thus it can be seen that the safety of a particular collateral arrangement to both giver and taker is a sensitive matter, dependent not just on the form of transfer, but also how (and at what level) collateral assets are segregated; on whether they can be re-used by the taker (and if so, for what purpose); and on the operational robustness of the arrangements.[31]

3.7 Security arrangements

A security arrangement involves party *X* granting an interest in his property to a second party, *Y* in order to secure *X*'s debt or obligations to *Y*. Both *X* and *Y* have property rights in the asset concerned. *X* retains the right to redeem, i.e. the right to end *Y*'s interest in the property by settling his obligation. The legal term for the right to get the collateral back in security arrangements is the *equity of redemption*. *X* also retains the right to any surplus of the asset above the value of the debt. *Y* is in a strong position on the insolvency of *X*, because (within certain limits, discussed below) the secured assets will be available to pay his debt, with only any surplus claim over the realised value of the collateral going into the pool of general (unsecured) creditors' claims.

There are four possible types of consensual security interest in English law: charges, mortgages, pledges and liens. Only the first will be considered in detail in this paper.[32]

A charge may be *fixed* or *floating*. A fixed charge attaches to a particular asset (e.g. a piece of machinery) meaning that it may not be sold without the consent of the taker. However, this is not practical in relation to assets which the provider may need to deal with day to day, such as the varying contents of a traded securities account. The alternative is a floating charge: here the provider maintains the right to deal with the charged assets without the taker's consent. This flexibility means that it is possible for a provider to give a floating charge over all of the assets of a business.[33]

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[30] See P. Wood, *Comparative Law of Security Interests and Title Finance,* Sweet & Maxwell (2007).

[31] This last should not be underestimated: a highly robust legal regime might be little consolation to a collateral provider if it turned out that the collateral taker had (without consent) re-used their assets and thus they were left with an unsecured claim after the failure of the taker, especially if there was no practical way of discovering this fact beforehand.

[32] This is because pledges and liens require possession and are therefore not applicable to intangible assets. Mortgages will not be considered in detail here because the type of mortgage which would be most relevant to this discussion bears little practical difference to the charge.

[33] Landmark cases have confirmed that the defining characteristic of the floating charge is that the chargor has the power to modify or dispose of the assets without the consent of the chargee. For example, the ability to replace plant and machinery would be definitive of a floating charge: see *Smith* v *Bridgend County Borough Council* [2001] UKHL 58. The landmark cases on the nature of the floating charge are *Re Yorkshire Woolcombers Association* [1903] 2 Ch D 284; *Agnew* v *Commissioner of Inland Revenue* [2001] UKPC 28; and *Re Spectrum Plus* [2005] UKHL 41.

4. Insolvency law and CCPs' default management processes

The risks created by the potential for financial institutions to default are the main motivations for central clearing. If clearing members did not fail, or their failure never created losses, then much of the point of central clearing would be lost. The capacity to handle defaults safely is therefore fundamental for a CCP. One (but not the only) reason that clearing members default at the CCP is that they are or shortly will be insolvent. Therefore, in this section we look at important aspects of insolvency law for CCP default management processes ('DMP').

4.1 Insolvency regimes

In England, there are numerous insolvency regimes which might apply to a failing or failed company. One analysis has suggested that a bank in England could be subject to any one of eleven different types of insolvency procedure.[34] The full details of these regimes are outside the scope of the paper, but, following Gullifer and Payne,[35] it is helpful to distinguish:

1. *Procedures which can be thought of as 'statutory compromises'*. These are procedures such as company voluntary arrangements and schemes of arrangement which are 'private deals' without the involvement of an external insolvency practitioner, and which do not involve a moratorium on enforcement by creditors while a rescue is sought for the company; from

2. *Formal insolvency proceedings, which are either an administration or a winding up*. The primary objective of an administration is 'rescuing the company as a going concern'[36] and the administrators are in the ordinary course of events to act in the interests of the company's creditors as a whole. Administration differs from *winding up*, or liquidation, which involves gathering in the company's assets for distribution to creditors and shareholders, in an order discussed below, followed by the dissolution of the company.

   The key point for our purposes is that administration is designed to provide breathing space for the company, thus it imposes a *moratorium* on insolvency proceedings (i.e. the company cannot be wound up in this period) and on other legal process including on the enforcement of security over the company's property without the permission of the court or the administrator. The administrators have very broad powers during the moratorium, including, in some circumstances, disposing of property subject to a floating charge as if it were not subject to the charge, and applying to court for an order to dispose of property subject to other types of security interest.

   During a winding up (which may be an alternative to, or the conclusion of, an administration), the company is dissolved. Liquidators enjoy extensive statutory powers with the aim of collecting in assets of the company and distributing them. This distribution is in a prescribed order. The winding up waterfall from most senior to most junior claims is, in outline:

[34] See D. Turing, *Clearing and Settlement in Europe*, Bloomsbury Professional (2012). Turing's eleven types moreover do not include creditors' schemes of arrangement (section 895 of the Companies Act 2009) or the special resolution regimes under the Banking Act 2009.

[35] See L. Gullifer and J. Payne, *Corporate Finance Law: Principles and Policy*, Hart (2015) or V. Finch, *Corporate Insolvency Law: Perspectives and Principles*, Cambridge University Press (2009) for a further discussion.

[36] Section 3(1) of Schedule B1 of the Insolvency Act 1986, as added by the Enterprise Act 2002, created the current regime for administrations. Section 3(1) includes other objectives, being (b) achieving a better result for the company's creditors as a whole than would be likely if the company were wound up (without first being in administration) and (c) realising property in order to make a distribution to one of more secured or preferential creditors. Sections 3(3)-(4) make it clear that these objectives are in order of priority.

- Holders of fixed charges; then
- Expenses of the liquidation (or administration); then
- Preferential creditors (e.g. employees); then
- Holders of floating charges (subject to sacrificing a 'prescribed part' of their proceeds to the general creditors); then
- General creditors; then
- Shareholders.

The different priorities of the two types of charge may therefore be important: fixed charge holders have top priority, with floating charge holders lower down the distribution list.

4.2 Default management without protection

If the statutory insolvency regime described above were the only legal framework for handling the default of a major clearing member, CCP default management would be much harder and more uncertain than it is. This is because the insolvency regime puts the insolvency practitioner in charge of many aspects of default management. For instance, the CCP could not quickly close out an insolvent clearing member and liquidate their collateral, or return a net amount (or make a net claim) were insolvency law to be the governing framework. Indeed, it might even be vulnerable to some of the defaulter's contracts being disclaimed by the insolvency practitioner.

4.3 Contractual provisions and their limitations

Under English law, commercial parties have considerable freedom to frame their mutual rights and obligations without interference from the courts. Therefore one might think that a CCP and its clearing members could frame their contracts in such a way as to avoid disruption by insolvency law. However, English law freedom of contract is not unlimited, and it is not possible to contract out of some legal provisions.

The limits in this area were demonstrated graphically in *British Eagle* v *Air France.*[37] In this case seventy six airlines had entered into a mutual clearing arrangement where they agreed to settle net debts amongst each other. A central body, IATA, calculated the monthly net sum due to or from each member: there was no central party, and no novation of exposures. When British Eagle failed, it was a net debtor as regards the overall scheme but a creditor of Air France. Its liquidators sued Air France for the debt alleged to be owed to British Eagle, on the basis that the clearing rules did not apply after insolvency. They argued that to do otherwise would prevent assets being applied for the rateable benefit of all creditors (or '*pari passu*') as provided for in (the then) section 302 of the Companies Act 1948. A majority in the House of Lords agreed.[38] The mischief here was an asset being diverted away from British Eagle on insolvency.[39] This is an example of the common law *anti-deprivation principle*, which, in summary, states that any agreement that allows assets to belong to a company until its insolvency, but then to be taken away from the insolvent estate, is invalid as a matter of public policy.[40] The British Eagle case demonstrates that the law will not always uphold contractual

[37] See *British Eagle* v *Compagnie Nationale Air France* [1975] 1 WLR 758.

[38] Subsequently, IATA amended its clearing rules to provide for the novation of debts, and this arrangement has been upheld by courts in Australia: see *IATA* v *Ansett Australia Holdings Ltd* [2008] HCA 3. For a further discussion, see M. Bridge, *Clearing Houses and Insolvency* (2008) 2 Law and Financial Markets Review 418.

[39] The distinction is discussed in M. Bridge and J. Braithwaite, *Private Law and Financial Crises* Volume 13, No. 2, Journal of Corporate Law Studies 361.

[40] Clearly credit assessment is considerably more difficult if the assets of a creditor can disappear on insolvency. Anti-deprivation addresses this unfairness. It has a long history in English law, going back to at least the mid-18th century: see Neuberger LJ, quoting *Ex p Jay* (1880) 14 Ch D 19, 26 (Cotton LJ) in *Perpetual Trustee Co Ltd v BNY Corporate Trustee Services Ltd* [2009] EWCA Civ 1160, [2010] Ch 347 (CA).

relationships, no matter how clearly written or reasonably motivated, or how sophisticated the counterparties.[41] There are various ways in which parties may validly structure their transactions to mitigate the risk of contravening this aspect of insolvency law. The typical clearing house structure, whereby debts arise only between the clearing member and the CCP is one such approach.[42] Furthermore, legislation has stepped in to provide *safe harbours* from general insolvency for certain types of arrangements.

Table 1 sets out in more detail some of the aspects of insolvency law which might cause issues for managing defaults.

Table 1: General Principles in English insolvency law which could, if not appropriately addressed, challenge CCP default management

General rule or principle	**Issue**	**Insolvency Act (IA)/rules (IR) reference**
Mutual set off	Mutual set off is overseen by the liquidator rather than the CCP.	Rule 4.90 of the IR
Disclaiming onerous property	The liquidator has power to disclaim onerous property (e.g., an unprofitable contract). If a counterparty suffers losses, it becomes a creditor of the company.	Section 178 of the IA
Property transfers are void	Any disposition of company property or shares after commencement of winding up is void unless the court orders otherwise.	Section 127 of the IA
Undervalued transactions can be struck out	If a transaction gave less value to a company than it 'should' have done and occurred in a window before liquidation or administration, then the liquidator or administrator can petition the court to strike it out.	Section 238 of the IA
Preferences	If a transaction concluded in a window before liquidation or administration puts the creditor in a better position on insolvency than would otherwise be the case, the office holder can apply to court to strike out the transaction.	Section 239 of the IA
Floating charges	Fixed and floating charges give creditors security over a debtor's assets, as for instance in a collateral agreement. The difference between the two types of charge relates to the debtor's freedom to dispose of its assets. With a fixed charge, it has a very limited ability to do so, whereas it has more flexibility in a floating charge. Floating charges are more problematic in insolvency, and in particular if they were created in a window before insolvency, they can sometimes be invalid.	Section 245 of the IA
Disposal of charged property	The administrator of a defaulter can apply to the court for permission to dispose of charged property that is subject to a security (other than a floating charge) The court will give permission if it is satisfied this would 'be likely to promote a more advantageous realisation of the company's assets than would otherwise be effected'. The administrator of a defaulter can dispose of charged property that is subject to a floating charge without the need to go to court.	Paragraphs 70, 71 of Schedule B1 to IA

[41] In a more modern Lehman Brothers-related case, *Belmont Park Investments Pty Ltd* v *BNY Corporate Trustee Services Ltd* [2011] UKSC 38, the anti-deprivation principle was the basis of an unsuccessful challenge to a provision in a structured finance transaction which flipped the order of priorities of two sets of creditors on the insolvency of one of them. This recent Supreme Court decision provides some comfort that the English courts will be slow to invalidate a bona fide commercial transaction between sophisticated parties provided that these parties have not tried to contract around inviolable legal principles.
[42] Confirmed in the Australian case of *Ansett Australia Holdings Ltd* v *IATA* [2008] HCA 3 (HC).

4.4 The need for safe harbours

Major jurisdictions grant a safe harbour to certain classes of financial transaction. If one party defaults, these allow the other to close out covered transactions promptly, to sell collateral, and to establish a net close out valuation after the use of collateral. Hence they allow non-defaulting parties to avoid some of the issues with using insolvency law alone to address the failure of a large financial counterparty. They are found in many legal regimes, including the US Bankruptcy Code and the EU Financial Collateral Directive. While the scope of the safe harbour is slightly different for each jurisdiction, OTC derivatives, securities financing transactions such as repos, and transactions cleared through a CCP are amongst the usual beneficiaries.

The financial stability benefits of this policy are obvious. Without a safe harbour making financial collateral effective and allowing counterparties to quickly close out against the defaulter, important risk transfer and funding mechanisms such as OTC derivatives and repo would be much less attractive. The market would adapt to some extent (for instance packaging up a derivative and the collateral against it into a security, a phenomenon already seen in structured product development), but the resulting financial system would be less efficient and less safe.[43]

4.5 Safe harbours for CCP default management processes

Various pieces of UK and European legislation are in place to provide speed and certainty to derivatives default management. Collectively, this legislation creates safe harbours for certain, carefully defined contractual arrangements, by modifying insolvency law so that these arrangements can take effect as intended. The most important pieces of legislation for CCP DMP are as follows:[44]

- *EMIR* and its accompanying *Regulatory and Implementing Technical Standards* ('RTS'). These lay down the clearing mandate for OTC derivatives and other aspects of the framework for central clearing in Europe, as well as providing a detailed regulatory regime for CCPs, and new rules about trade reporting, among others;
- Part VII of the (UK) *Companies Act 1989* ('Part VII'), which provides certain safeguards for CCPs' default management processes, most notably with respect to insolvency law;[45]
- The *Financial Markets and Insolvency (Settlement Finality) Regulations* 1999/2979 ('SFR'), which implement the Settlement Finality Directive 1998/26/EC. The Directive aims to provide a consistent Europe-wide treatment of the process of settling a financial transaction, including where one of the system's participants becomes insolvent. The SFR applies to designated 'systems', and it is an EMIR requirement that any authorised CCP has to be designed a 'system' for the purpose of the SFR; and
- The *Financial Collateral Arrangements* (No.2) *Regulations* 2003/3226 ('FCAR') which implement the Financial Collateral Arrangements Directive 2002/47/EC. This Directive seeks to harmonise rules for the creation, perfection and enforcement of financial collateral across the EU, and increase legal certainty about such arrangements.

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[43] For a further discussion here, see P. Paech, *The Value of Insolvency Safe Harbours* (2016) Oxford Journal of Legal Studies.

[44] Note that the legislation on this list has been amended since coming into force. In the interests of simplicity, amending legislation is not listed here and references made to legislation are to the versions as of end 2015.

[45] Part VII principally facilitates a recognised clearing house's default proceedings by modifying insolvency law, and these provisions are the focus of the discussion in this paper. However, Part VII also assists default proceedings in other ways, e.g. section 160 imposes a duty to assist with a recognised clearing house's default proceedings on any person who has or had control of the defaulter's assets, or who has or had documents relating to a defaulter.

This set of legislation alters insolvency law as it applies to CCPs' default management processes:

1. *General disapplication of any conflicting insolvency law.* The breakwater of the safe harbour legislation for CCPs is Part VII which exempts market contracts and the default rules of recognised clearing houses (amongst other things) from the general insolvency regime.[46] This broad protection for clearing house rules is of great importance in practice. However, Part VII is not quite the cure-all it is sometimes taken for, as we discuss below.
2. *Specific disapplications, or limitations, of particular provisions of the Insolvency Act 1986.* This is the most common approach adopted in this set of legislation, whereby the 'general law of insolvency' is held to have effect subject to particular exclusions.[47] We discuss some of the most important of these disapplications below and summarise them in Table 2 below.

4.6 Protections for collateralisation

The legal regime outlined above also provides some specific protections for collateral arrangements used by CCPs (and others).

The FCAR applies to both security interest and title transfer collateral arrangements over 'financial collateral'. This is defined as 'cash, financial instruments or credit claims',[48] so it covers nearly all of CCP collateral. The FCAR contains a number of helpful disapplications, notably:

- Regulations 4, 5, 6 and 7 disapply legislative and common law rules which would otherwise require certain formalities to be complied with before a collateral arrangement is enforceable, such as the registration of charges;
- Regulations 8 to 11 prevent certain provisions of the Insolvency Act 1986 and other insolvency rules from applying; while
- Regulation 12 permits a close out netting provision in a financial collateral arrangement to take effect in accordance with its terms even if a party to the arrangement is being wound-up or is subject to reorganisation proceedings, subject to certain conditions.

These are useful protections,[49] and CCPs must take care to ensure that their arrangements enjoy them.

More specific protections for collateralisation within financial market infrastructure are found in Part VII and in the SFR. In the former, express protections are provided for

- *Market contracts* (broadly defined in section 155 of Part VII and including contracts between a recognised clearing house and its members);
- *Market charges* (defined in section 173 as a 'charge, whether fixed or floating, granted … in favour of a recognised clearing house, for the purpose of securing debts or liabilities arising in connection with their ensuring the performance of market contracts…'); and
- *Market property* (addressed in section 177, which covers margin in relation to a market contract and default fund contributions).

[46] See specifically section 159 of Part VII (Proceedings of exchange or clearing house take precedence over insolvency procedures).
[47] Examples include Part 3 of the FCAR, sections 164-165 and 175 of the Part VII and regulations 16-19 of the SFR.
[48] Each term is separately defined in Regulation 3 of the FCAR.
[49] The FCAR's importance is underlined by the fact that its disapplication of insolvency law is broader than those found in CCP-specific legislation such as Part VII, and it is the only regime which expressly applies on the insolvency of the collateral taker or collateral provider (as expressly set out in Regulation 10(1)). In particular it is the only one of these legislative regimes to disapply section 176A of the Insolvency Act 1986.

In the SFR, there is specific modification of the law of insolvency with respect to a ‘collateral security charge and the action taken to enforce such a charge’,[50] where collateral security is defined as ‘any realisable assets provided under a charge or a repurchase or similar agreement, or otherwise ... for the purpose of securing rights and obligations potentially arising in connection with a system’. The SFR’s protections enhancing settlement finality are also important, especially for CCPs clearing securities or securities-based transactions.

Overall, EMIR, Part VII, the SFR and the FCAR offer extensive, if somewhat piecemeal, protection for the collateral arrangements entered into by CCPs.

4.7 Bank and investment firm resolution

Safe harbours and other provisions around insolvency may vary depending on the type of entity which is failing, as some now fall under the various resolution regimes which have been instigated both domestically and in other jurisdictions.[51]

In the UK, the Bank of England (as Resolution Authority) has very broad powers[52] which can be used to manage ailing financial institutions. These powers include stabilisation tools, such as the power to bail-in liabilities, and to transfer of some or all assets and liabilities to an asset management vehicle, bridge bank, or other purchaser. As a last resort, HM Treasury may transfer the institution to temporary public sector ownership. These powers enable Authorities to leave ‘bad’ assets and liabilities behind, separating them from the ‘good’ ones being transferred. This power could disrupt contracts between the failing bank and its counterparties, including contracts expressly designed to protect the counterparty in such circumstances (e.g. through netting or security arrangements), although *no creditor worse off* safeguards are intended to limit the extent of the potential disruption, and/or to provide appropriate compensation to affected counterparties.

These resolution powers have been disapplied in some of the cases where they may clash with the rights of a CCP. The limits on the resolution powers in this context include:

- The Bank of England may not make a partial property transfer order with respect to a failing entity which modifies or makes unenforceable the default rules of a recognised clearing house or rules for the settlement of market contracts by a recognised clearing house.[53]
- Temporary stays under section 70A of the Banking Act 2009 may not be used by the Bank of England to stay the rights of CCPs, because CCPs constitute ‘excluded parties’ for this section.

However, CCPs are *not* excluded from the effects of section 48Z of the Banking Act 2009. This means where a clearing member is a firm falling under the special resolution regime, the CCP cannot call an Event of Default just because:

- The member is in resolution; or
- The authorities have taken another form of ‘crisis management measure’ or ‘crisis prevention measure’; or
- A recognised third-country resolution action has been taken with respect to the member; or
- Because of any event ‘directly linked’ to such a measure.

[50] Regulation 18 of the SFR.
[51] For example, banks, building societies and certain investment firms either are now or could in the future be members of CCPs, and these entities are sometimes subject to their own resolution regimes.
[52] These are in The Banking Act 2009 and the Investment Bank Special Administration Regulations 2011.
[53] The Banking Act (Restriction of Partial Property Transfers) Order 2009/322.

This provision (and similar wording which has been added into the FCAR) expressly does not affect a CCP's right to call an Event of Default where the member is not meeting its 'substantive obligations' under its agreement with the CCP. These are expressed as '*including* payment and delivery obligations and provision of collateral' [author's emphasis], and it is unclear what other obligations might count as 'substantive'. This matters, because the drafting of section 48Z provides that disregarding certain events for these purposes is only possible where the 'substantive obligations … continue to be performed.'[54] The general disapplication in section 48Z is not captured by the modification of 'insolvency law' in the legislation discussed above (as it is not a part of insolvency law). Overall, then, any close out rights linked to whether or not the clearing member is in resolution and/or to events directly linked to resolution appear to be stayed if the clearing member is performing on substantive obligations, but not if they aren't. Moreover, there seems some room for debate over what substantive obligations and events directly linked to resolution are.

So far, this paper has established that the capacity of CCPs to fulfil their default management objectives depends on the common law, parties' contracts, and the legislative regime. In particular, we have seen that the contractual provisions underpinning DMP may, *prima facie*, conflict with insolvency rules and other legal formalities, but that, reflecting the public policy benefits of fast and certain default management processes, this conflict is addressed by various exceptions to the usual insolvency provisions. The following sections of this paper consider some of the more specific legal considerations, going step-by-step through a typical default timeline.

5. Stage one: declaration of default

It is vital for a CCP to get the declaration of default right, as this triggers the full-blown default management process. 'Right' here typically means:

- The CCP should not unduly delay in declaring a default, in order to reduce the risk that the market will move against it on the defaulter's portfolio; but also
- The declaration should be safe, i.e. that the CCP knows the contractual grounds under which it is declaring the default, and these are robust; finally
- It is important that the circumstances of the default are such that the CCP's DMP will fall within the statutory safe harbours that the CCP expects and intends to rely upon.

5.1 Defining default at the CCP

The first stage in default management is the declaration that a member is in default at the CCP. Without this, nothing more can be done.

This is a matter of the terms of the CCP's contracts with the (potential) defaulter. Events of Default clauses will usually be drafted broadly; insolvency is not the sole trigger, and other common Events of Default are designed to cover the situations where:

- The clearing member has not paid sums due to the CCP (perhaps after some short period to cure the breach has expired); or
- It is in breach of the terms of membership of the CCP; or
- It is in breach of other (perhaps non-financial) terms.

This list covers many different types of failure (and, arguably, near-failure). It is vital that a CCP is clear on which ground it is actually declaring default, and when. Not only is this to ensure that the

[54] See Section 48Z(5) of the Banking Act 2009.

clearing house is acting within its contractual rights (e.g. not before any grace period which the member is entitled to in order to cure a default has expired or without any required notice being served), but also because the basis of the default can affect the safe harbours which apply.

The extensive English litigation surrounding the close out of Fluxo-Cane Overseas Limited's positions in exchange traded sugar derivatives demonstrates how significant the contractual basis for a default may become. In these cases, the first line of attack by a trader having been closed out by several of its brokers was to claim that there was no contractual entitlement for the close out. In one case,[55] Fluxo-Cane argued that one of its brokers had prematurely begun the liquidation of its positions at a time when it had no right to do so. This claim required the judge to conduct a detailed review of the Terms of Business between the parties as against the events leading up to the close out. Various Events of Default were discussed in the judgment. The judge found that the broker was not entitled to rely on the most obvious Event of Default in this case (the non-payment of margin) because the contract provided for there to be 'one Business Day' between a 'notice of non-performance' from the broker and the start of liquidation, which had not been provided. A second Event of Default for non-payment of indebtedness when due was also held not to be triggered at the time that liquidation started, with the judge finding that it would be wrong to allow this clause to bypass the notice provisions in the non-payment of margin Event of Default. Similarly, the judge held that the broker could not rely on a cross-default clause, which it had submitted was triggered by findings in a parallel case between Fluxo-Cane and another broker. This, the judge held, would lead to too much 'commercial uncertainty'.

The broker was saved, however, by the judge's finding that different Events of Default had been triggered before liquidation commenced. The first valid Event of Default was the term covering the situation where Fluxo-Cane disaffirmed, disclaimed or repudiated any obligations under the agreement. On the facts, the judge held this happened at a meeting between Fluxo-Cane and its brokers before the liquidation commenced. The second was a broad term which allowed the broker to close out if 'necessary or desirable for our own protection'. However, to rely on either of these Events of Default, the broker had to persuade the judge that it did not matter that these Events of Default were not expressly relied upon at the time of the liquidation. They did this successfully, but with the judge noting the 'exceptional' circumstances of this close out.

This litigation demonstrates the numerous challenges around the declaration of default, when events will often be unfolding at speed. It may be hard to keep track of notice and grace periods; different CCPs may have different Events of Default, so some may be entitled to act sooner than others; cross-default clauses may not help if the original Event of Default is in doubt; and declaring a default may come down to a question of fact which will be hard to prove in court some years later. An incorrect declaration could lead to potentially large and complex counterclaims from the allegedly 'defaulting' party. Furthermore, as discussed in Section 4.7 above, if the CCP member concerned is a bank or investment firm in resolution, the CCP may only call a default for this or a directly-linked reason if the member fails to meet its 'substantive obligations '. This may be obvious in some cases but not others (for instance if there has not been a failure to pay). Awareness of the exact grounds of default and of exactly which contractual Event of Default has been triggered is therefore very important.

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[55] *Sucden Financial Limited* v *Fluxo-Cane Overseas Limited* [2010] EWHC 2133 (Comm). See also *ED & F Man v Fluxo-Cane Overseas Limited* [2010] EWHC 212 (Comm) and *Marex Financial Limited* v *Fluxo-Cane Overseas Limited* [2010] EWHC 2690 (Comm).

5.2 Which boats are in the harbour?

It is not enough that the CCP has valid grounds in its contract to call an Event of Default. Given the likelihood that a defaulting member will be insolvent, or near-insolvent during the process of managing the default, it is also important that CCPs' DMP fall within the available statutory protections from insolvency law. The risk they will not needs to be carefully considered. To some extent, this might turn on the grounds on which the default has been called in the first place.

The issues here are particularly delicate not least because there is no consistent definition of the term 'default' in the legislation providing safe harbours for CCPs' rules. Whilst most statutory protections also extend to other types of CCP procedures, it is important to ensure that, if a particular CCP rule does not qualify as a 'default rule' in law, and it is vital to default management, then it qualifies as one of these other protected procedures. A related issue here is that the dangers that legislation is protecting a covered process *from* also vary.

Table 2a: Summary of the legislative exemptions and derogations for CCP default management processes in EMIR

Protection for default rules? If so: how are default rules defined?	**Non 'default rules' protected?**	**Protection from?**	**Overall coverage**
Yes. No express definition of 'default' or 'default rules' but Article 48(1) suggests that 'default procedures' are 'procedures to be followed if a clearing member does not comply with the participation requirements of the CCP 'laid down in Article 37'.	No.	No safe harbours for DMP expressly provided in EMIR, but Recital 64 indicates that if a member defaults, the EMIR requirements on segregation and porting, designed to protect the clients of the defaulting member 'should therefore prevail over any conflicting laws, regulations and administrative provisions of the Member States that prevent the parties from fulfilling them'.[56]	Client segregation and porting.

Table 2b: Summary of the legislative exemptions and derogations for CCP default management processes in Part VII Part VII of the Companies Act

Protection for default rules? If so: how are default rules defined?	**Non 'default rules' protected?**	**Protection from?**	**Overall coverage**
Yes. 'Default rules' are defined in section 188. For recognised CCPs, the definition includes default procedures referred to under Article 48 of EMIR and rules relating to the client clearing default procedures referred to in Article 4(4) of the RTS.	Yes. Part VII protects actions under default rules, but also 'market contracts', 'market charges' and 'market property', as defined in Part VII.	Insolvency law relating to the distribution of assets of a person on bankruptcy, winding up or administration (but *not* provisions outside insolvency law, e.g. relating to the registration of charges).	Broad protections achieved by modifying insolvency law.

Table 2c: Summary of the legislative exemptions and derogations for CCP default management processes in the Financial Collateral Arrangements Regulations

Protection for default rules?	**Non 'default rules' protected?**	**Protection from?**	**Overall coverage**
No.	Financial collateral arrangements, defined as either a security financial collateral arrangement or title transfer financial collateral arrangement, i.e. it must be an arrangement over financial collateral.	The disapplications include insolvency provisions relating to the enforcement of collateral, formalities, the need to register charges, and the need to apply to a court to before seizing collateral under an 'appropriation'.	The two defined types of collateral arrangements are protected from a range of legal rules, not just those applicable on insolvency.

[56] Implemented into law in the UK by amendments to Part VII.

Table 2d: Summary of the legislative exemptions and derogations for CCP default management processes in the Settlement Finality Regulations

Protection for default rules? If so: how are default rules defined?	**Non 'default rules' protected?**	**Protection from?**	**Overall coverage**
Yes. Covers 'default arrangements', which are defined as arrangements to 'limit systemic and other types of risk which can arise in the event of a participant or a system operator of an interoperable system appearing to be unable, or likely to become unable, to meet its obligations in respect of a transfer order, including, for example, any default rules within the meaning of Part VII or any other arrangements for (a) netting (b) the close out of open positions (c) the application or transfer of collateral security or (d) the transfer or assets or positions on the default of a participant in the system.'	Yes. Regulation 14 expressly lists contracts covered, including 'a transfer order', 'the default arrangements of the designated system', 'the rules of a designated system as to the settlement of transfer orders not dealt with under its default arrangements' and 'a contract for the purpose of realising collateral security in connection with participation in a designated system or in a system which is an interoperable system in relation to that designated system … otherwise than pursuant to its default arrangements.'	Regulation 14 sets out the principle that the proceedings (broadly defined and including default arrangements) of a designated system will take precedence if inconsistent with insolvency law; later regulations disapply specific provisions of IA.	The SFR offers broad coverage for CCPs' procedures, including as they relate to interoperable systems. As with Part VII, however, the SFR provide a safe harbour only from insolvency law. It follows that the FCAR may also be needed.

Table 2e: Summary of the legislative exemptions and derogations for CCP default management processes in The Banking Act (Restriction of Partial Property Transfers) Order 2009

Protection for default rules? If so: how are default rules defined?	**Non 'default rules' protected?**	**Protection from?**	**Overall coverage**
Yes. 'Default rules' are defined by reference to section 188 of Part VII. See section 7(2).	Section 7 covers default rules but also 'a market contract' (defined as in section 155 of Part VII); and 'the rules of a … recognised clearing house as to the settlement of market contracts not dealt with under its default rules'.	Those parts of the Banking Act 2009 giving the Resolution Authorities powers to make partial property transfers. This means that a partial property transfer may not be made which would modify or render unenforceable any of the protected types of arrangements.	Protection from specific parts of the Banking Act 2009's special resolution regime: relevant if defaulter is a bank.

Tables 2a, 2b, 2c, 2d and 2e summarise the coverage of the various exemptive provisions. This summary highlights how the definition of 'default rules' (or the equivalent) varies across each piece of legislation comprising the statutory protection relevant to CCPs default management. The ambit of protection is different in each case, with the SFR definition being the broadest and EMIR the narrowest.[57] Furthermore, in each case bar EMIR, the definitions of default rules states that these are the rules which apply when the defaulter is unable or likely to become unable to meet its obligations to the CCP. This is a narrower and more subjective definition that if default rules were simply defined as the rules which apply once the CCP has called a default. In other words, 'default rules' for the purposes of legislative safe harbours may not exactly coincide with 'default rules' for the purposes of CCPs' rulebooks.

The significance of this issue can be illustrated as follows. Some contractual Events of Default will not require the member to breach or be about to breach its obligations to the CCP. For instance, if a

[57] A related coverage issue, which we do not discuss further, is the extent to which these protections hold in the event of CCP insolvency.

member is part of a group where other entities are failing,[58] and at that time the member shows no signs of itself being in breach of membership requirements, the CCP may nonetheless have the right to call an Event of Default.[59] However, in terms of the default management which followed, to qualify as 'default rules' under Part VII, or as 'default arrangements' under the SFR, the CCP might have to show that the member appeared likely to become unable to meet its obligations to the CCP. If this was impossible, to benefit from the legislative safe harbours, the CCP may instead have to show that the rules it was relying upon fell into another protected class, for example because they related to 'the settlement of market contracts not dealt with under its default rules'.

5.3 Notice

It may be the case that a CCP's rights on a default are compromised because it has, or is deemed to have, notice of certain facts. The common law provides that certain rights are compromised if a party has *notice* (or the closely related idea of *knowledge*) of wrong-doing. This can happen if a CCP becomes aware of a third party's rights in assets posted by the member of the CCP, or of a breach of duty by the member (e.g., where a member has misapplied client assets). Moreover, it is important to note that the test for having notice is broader than actual or public notice, i.e. a party may have constructive knowledge or constructive notice of a fact where it failed to make the proper inquiries 'suggested by the facts at his disposal'.[60]

The consequences of having notice or knowledge are potentially severe. For a CCP, it may mean that if they know or reasonably suspect that client assets have not been properly segregated by a clearing member, but instead used as house assets, then this might taint the whole house margin account. The CCP may also be liable for clients' losses. As a given client's claim against the CCP would be a personal one, it would not matter if the CCP no longer had the assets in question.[61]

The issue of whether a CCP had notice that collateral posted by a member belonged to another entity in the member's group or to its clients could affect whether the CCP acquired property rights in that collateral. This problem has been raised by a commentator discussing the issues which might have featured in a dispute between MF Global UK Limited and MF Global, Inc. over the ownership of T-bills transferred from US to UK and then posted by the UK entity to various clearing houses.[62]

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[58] This was famously considered for the Lehman Brothers group, where the parent company LBHI entered into insolvency before some of its subsidiaries, and some of those subsidiaries continued to make payments when due for some days after the parent's default.

[59] See section 48Z(5) of the Banking Act 2009: this limits a CCP's ability to call an Event of Default where the relevant clearing member is a subsidiary of a bank in resolution, and its obligations are guaranteed by a member of the same group as the bank. See section 4.7 above for more detail on this part of the Banking Act.

[60] In practice, while there is extensive case law here, it will be a matter of fact in each case because, as Lord Sumption put it in a recent judgment finding that a bank did have constructive notice of impropriety, these questions 'are often highly sensitive to their legal and factual context'. See *Crédit Agricole Corporation and Investment Bank* v *Papadimitriou* [2015] UKPC 13.

[61] Part VII does not help here. Section 177 states that as regards 'property … held by the …clearing house as margin in relation to a market contract' '[s]o far as necessary to enable the property to be applied in accordance with the rules of the … clearing house, it may be so applied notwithstanding any prior equitable interest or right, or any right or remedy arising from a breach of fiduciary duty *unless* the … clearing house had notice of the interest, right or breach of duty at the time the property was provided as margin.' The SFR does help somewhat, in that the notice provisions of sections 163, 164 and 175 of Part VII are disapplied, but this only applies to a) 'a market contract which is also a transfer order through a [CCP]' and b) 'a market charge which is also a collateral security charge'.

[62] In this case, the dispute in question settled after a preliminary procedural hearing: see A. Lenon QC, *An unresolved collateral issue: Re MF Global UK Ltd and the ownership of US Treasury Bills posted as margin*

6. Stage two: returning to a matched book

Once a default is declared, the CCP must, as EMIR's Article 48 has it,

> *"… take prompt action to contain losses and liquidity pressures resulting from defaults and shall ensure that the closing out of any clearing member's positions does not disrupt its operations or expose the non-defaulting clearing members to losses that they cannot anticipate or control."*

In other words, the CCP has to close out the defaulter's cleared portfolio, while managing its risk and liquidity position. This stage should be distinguished from using the assets making up the defaulter's collateral, which is considered in Section 7.

The legal framework here is informed by a string of cases relating to close out under the two principal versions of the ISDA Master Agreement (1992 and 2002). Collectively these cases give significant insight into what does and does not constitute a legally robust close out under the terms of the Master Agreement. This in turn raises the interesting design question of whether clearing houses should use essentially the same language, given its known properties, or whether they should try to draft new documentation which tries to give the CCP more flexibility, but which is untested.

6.1 The basis of challenge

The manner in which a party closes out another's positions may be challenged on the basis of the contract (e.g. by claiming that the process differs from what have the parties agreed will happen) but also by alleging that the party closing out has certain other types of duties, which it has breached.

Case law suggests that the English courts will generally be reluctant to intervene in a close out conducted in good faith and in accordance with contractual terms. The relevant principles which the English courts apply are, in outline:

- Each case will depend on the exact words of the parties' contracts.
- Even if a contract gives one party the sole discretion to take a decision, e.g. as to the value of a defaulter's obligations, this right is not unfettered. The decision-maker must anyway exercise its discretion in a rational way, meaning that the discretion is limited 'by concepts of honesty, good faith and genuineness and the absence of arbitrariness, capriciousness, perversity and irrationality'.[63]
- Subject to this duty of rationality, the decision is that of the party taking the decision, not the market or the court. The deciding party is entitled to act in their own interests.[64]

The courts have explained the implications of this test as follows. There are 'parameters' defining the range of values which might be arrived at if the valuation exercise is conducted 'honestly and rationally' but within those parameters the valuing party 'is entitled to have an entirely proper regard for any danger to itself from valuing too optimistically'.[65] This gives the valuing party considerable room for manoeuvre. That said, there have been examples of valuations falling outside of these parameters. In *WestLB AG* v *Nomura Bank International Plc*, for instance, Nomura's valuation was found to be 'irrational'. Nomura had valued the assets by conducting a dealer poll, but it did not

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(July/August 2014) Butterworths Journal of International Banking and Finance Law 433, discussing *Re MF Global UK Ltd* [2012] EWHC 3415 (Ch).

[63] See *Paragon v Nash* [2001] EWCA Civ 1466. The view here is based on the 'Wednesbury' test, set out in *Associated Provincial Picture Houses* v *Wednesbury Corporation* [1948] 1 KB 223, discussed in Box 3.

[64] See for instance *Socimer International Bank v Standard Bank* [2008] EWCA Civ 116, [112]

[65] See *WestLB AG* v *Nomura Bank International Plc* [2012] EWCA Civ 495.

know and therefore could not tell the dealers what was in the relevant portfolio. It received no bids. The court held that, to be a 'rational' valuation, Nomura should have canvassed another possible buyer (the Fund's administrator, who did know what was in the portfolio). The court proceeded to determine what the outcome of a rational valuation process would have been.

6.2 Loss determination

Derivatives counterparties are required to calculate a termination amount in respect of all close outs: they must tell defaulters what the value of their portfolio is on close out, and hence how much of the defaulter's margin or other resources have been used. The terms of the agreement between the parties typically provide detailed procedures for valuation, including how the non-defaulting party should perform the process and when. However, even when detailed rules are provided (for example in the 1992 and 2002 ISDA Master Agreements, or in CCP rulebooks) and even where the close out process falls within a legislative safe harbour, the valuation part of close out may remain contestable.

Some of the potentially controversial questions in determining a close out amount are:

- Should close out be trade-by-trade or on a portfolio basis, to the extent that that is possible?[66]
- If quotes are obtained from market makers, should the price taken be the bid or offer price? What if there is no market for the contracts in question?[67] When will it be acceptable to use a pricing model rather than market quotations?
- Derivatives portfolios are often hedged by dealers. To the extent that the close out amount is based on actual losses, should the behaviour or value of the hedge be taken into account in valuing the trade(s) to be closed out?[68]
- In the stressed markets that often accompany a default, market prices for many assets are likely to be depressed. This can be exacerbated by 'fire sales' caused by other close outs. To what extent are prices obtained by a 'request for quotation' process indicative of a 'commercially reasonable' value which can be used for close out purposes?
- To what extent *must* a non-defaulting party act to mitigate its own losses?[69]

These issues have all been litigated in the context of the bilateral market, and this may well offer guidance for the management of close out calculations in other contexts. Moreover, looking beyond the technical aspects of the procedure for determining a close out amount, there are broader lessons which may be drawn from the case law in the bilateral market and which illuminates some of the more fundamental challenges which may arise in the CCP context: these are discussed in Box 3 below.

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[66] Firth points out that under the 1992 and 2002 ISDA Master Agreements, the determining party (i.e. usually the non-defaulting party) may seek quotations for replacement contracts either on a transaction by transaction basis or for groups of transactions. While the Master Agreement does not expressly deal with this choice, he suggests that there may be implications of failing to take one or other approach if the choice taken is not commercially reasonable or in good faith. See S. Firth, *Derivatives Law and Practice*, Sweet & Maxwell (2015).

[67] In *WestLB AG* v *Nomura Bank International plc* [2012] EWCA Civ 495, the Court of Appeal held that 'a portfolio of mainly unquoted and exotic stocks and shares, at a time of a historic "credit crunch" in the world markets' could reasonably be assessed as having no value (bar a 'hope value' of 5%).

[68] In *ANZ* v *Société Générale* [2000] 1 All ER (Comm) 682, the closing out party suffered losses not only under the principal contract with ANZ, but also under hedges with other parties. The court held that losses under the hedging contracts did not fall within the definition of 'Loss' in the principal contract (which was the 1992 ISDA Master Agreement) because they were not caused by the termination of the principal contract.

[69] In *Glencore Energy UK Ltd* v *Transworld Oil Ltd* [2010] EWHC 141 (Comm) it was found that the non-defaulting party had a duty to mitigate its loss once the defaulter's non-performance became clear.

Box 3: The 'commercially reasonable' test and rationality

Commercial reasonableness is a term used in both versions of the ISDA Master Agreement with respect to the amounts due on close out. The 1992 version requires that parties using one measure of close out amount (market quotation) switch to the alternative (loss) if the original measure 'would not (in the reasonable belief of the party making the determination) produce a commercially reasonable result.' The 2002 version uses commercial reasonableness in two ways: the party closing out (i.e. the non-defaulter) must use commercially reasonable procedures and these must produce a commercially reasonable result.

The case of *Peregrine* v *Robinson* demonstrates that commercial reasonableness is not always achieved. Here, considering the 1992 Master Agreement, the court disagreed that Robinson's valuation, even though honestly thought reasonable by Robinson, met the requirement to produce a commercially reasonable result.[70]

The judgement here was informed by an approach from public law known as the 'Wednesbury' test.[71] This test requires that parties act honestly, in good faith and not arbitrarily, capriciously or unreasonably. It follows that an action is unreasonable if no reasonable person acting reasonably could have made it. This does of course beg the question of what a reasonable default management group member might or might not reasonably do, but it is at least clear that the non-defaulting party does not have a duty to optimise its close out to minimise losses to the defaulter's estate.

The duty to act in a 'rational' way, as defined by the 'Wednesbury' test will also apply when one party has the contractual right to use its discretion.[72] This duty is therefore relevant during the close out process, where the non-defaulting party usually has a great deal of discretion. Helpfully for non-defaulters, it is often difficult to show that the rationality standard has been breached. For instance, in *Euroption* v *SEB*[73] it was confirmed that the non-defaulting could act in their own interests. Thus Euroption failed in their claim that SEB owed them a duty to conduct the close out with reasonable skill and care: the court found that a reasonable person acting reasonably could have closed-out as SEB did, even though this did not maximise value for Euroption. The judge emphasised that during a close out, SEB was acting to protect its own (not its client's) interests, and that it was not the job of the court to re-run the entire close out process to second guess what might have been done differently.

Therefore, the standard of 'rationality' does not provide a strong procedural constraint nor does it require a precise outcome; instead, the court has to put itself in the shoes of the decision-maker to decide what is reasonable in that context. This means that, in many cases, it will be difficult to show that the duty of rationality has not been met.

[70] See *Peregrine* v *Robinson* [2000] C.L.C. 1328. Firth raises the possibility that the two-part 'commercially reasonable' test in the 2002 ISDA Master Agreement close out calculations, as it has not yet been tested in court, may be an objective standard rather than the 'rational' standard discussed in *Peregrine* v *Robinson*. See S. Firth, *Derivatives Law and Practice*, Sweet & Maxwell (2015).

[71] This comes from *Associated Provincial Picture Houses Ltd* v *Wednesbury Corp* [1948] 1 K.B. 223, and is discussed in *Peregrine* v *Robinson*.

[72] See *Socimer* v *Standard Bank* [2008] EWCA Civ 116.

[73] See *Euroption Strategic Fund Ltd* v *Skandinaviska Enskilda Banken AB* [2012] EWHC 584 (Comm).

6.3 Challenges to CCP close out

A challenge to a given default management strategy may be particularly likely if market prices are in flux, or, as in *Peregrine* v *Robinson*, if the close out amount differs markedly from the mark-to-market valuation at the point of default. CCPs face a particular risk here, in that while Part VII gives them an indemnity from damages for certain acts 'in the discharge or purported discharge' of '…its default rules', there is the proviso 'unless the act or omission is shown to have been in bad faith'. The bar for establishing bad faith is high, but it is important to be aware of the possibility of challenge especially given the sums at stake. As with commercial reasonableness, good record keeping of default management decisions and executions[74] will undoubtedly help here, as will the drafting of CCP terms of business to limit or exclude liability arising from the close out process.

6.4 Auctions

A CCP may organise an auction of the defaulting member's positions, in order both to find another member to take on the defaulter's contracts and to establish a close out valuation. Auctions are a relatively new feature of CCPs' DMP, and many CCPs retain flexibility to organise them in a variety of ways. In some cases, for example, members may be incentivised to provide good bids by rules providing that, after the auction, should there be losses to meet from the default fund, the contributions of members who have not submitted acceptable bids will be used before those of members who have. Moreover CCPs are sometimes able to organise auctions where they have discretion about who can participate. As with other aspects of close out, when organising an auction, a CCP will have to comply with the terms of its agreement with members and be aware of exercising its discretion in a 'commercially reasonable' way, as discussed above.

7. Stage three: collateral management

If, after the portfolio close out process outlined above, the CCP faces losses caused by the default of a member, it will seek to assert its rights against the defaulter's collateral. Secured assets do not enter the insolvent's estate to be made available to general creditors, and secured creditors are not required to go to court to enforce their rights against the collateral, so if all goes well this process can be quite quick. However, in practice, the manner in which a CCP can enforce its rights against a defaulter's collateral depends on the provisions of the CCP rule book, the terms of the collateral agreement between CCP and the defaulter, and any issues caused by the location of the collateral, so care is needed in all these aspects.

For title transfer, enforcement is often straightforward as the collateral already belongs to the taker. Security interests create a challenge though: in order to be effective, they must have been validly created and attached to the collateral before they can be enforced. This can be problematic if there is a lack of clarity as to whether the charge is fixed or floating, so we look at this issue next. This leads to a discussion of the benefits of qualifying for the FCAR 'safe harbour'. The section concludes with a short review of the particular challenges posed by the use of cross-border intermediated securities.

[74] *In re MF Global UK Limited (in special administration)* [2015] EWHC 2319 (Ch) involved an application brought by joint special administrators of MF Global UK Limited under section 236 of the Insolvency Act 1986 against two clearing houses, which had closed out MF Global's open positions 'very shortly' after the appointment of administrators. The purpose of the application was to force discovery so that the administrators could consider if there were grounds for bringing proceedings against one of them. The case was made more complex by extra-territorial aspects, but helpfully for default managers the Court held that difference between the close out prices on 2 November, and screen quotations for the same positions on 3 November was not something that warranted further investigation. In particular, it was not sufficient to justify the administrators' far-reaching request for documents and information about the close out.

7.1 Fixed and floating charges

Insolvency law puts the floating charge holder at a disadvantage compared to the fixed charge holder, because they are less senior in the order of creditors, and because floating charges can be set aside by an insolvency administrator in some cases.[75] This phenomenon would be less problematic if it was always clear what was a fixed charge and what was not. Unfortunately there is a risk that in some cases a court may *recharacterise* an arrangement that the collateral taker thought was a fixed charge as a floating one.[76] Even worse, if a charge is recharacterised as floating, it may fall outside the scope of the FCAR. The slope from here is slippery: without the FCAR, a charge which is unregistered may be void, so the recharacterisation of a charge the CCP believed was fixed into a floating charge outside the scope of the FCAR could potentially mean that it had no collateral at all.

7.2 Qualifying for the FCAR

The FCAR expressly protects security financial collateral arrangements, which are defined as involving the creation of a 'security interest'. The Regulations define security interests as including pledges, mortgages, fixed and floating charges. Of these, only the floating charge is defined further, and in a way which has caused difficulties in practice.[77]

Regulation 3 of the FCAR states that in the case of a floating charge, the financial collateral must 'be in the possession or under the control of the collateral-taker or a person acting on its behalf …' After amendments in 2010, regulation 3(2) of the FCAR defines 'possession' to include the situation where the collateral is put in an account in the name of the collateral taker, but this definition is subject to an unhelpful proviso, limiting the rights of the collateral provider.[78] While it is technically possible, since a 2012 Lehman Brothers case on the point, to have 'possession' of an intangible asset such as interests in securities for the purpose of the FCAR, other aspects of the test for a collateral taker having 'possession' or 'control' remain the subject of debate. In practice, if the collateral remains in an account in the name of the collateral taker, and the provider cannot substitute assets without the permission of the taker and can only withdraw excess collateral, the risk of FCAR disqualification for a floating charge is reduced.[79]

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[75] Under section 245 of the Insolvency Act 1986, floating charges created in the run-up to insolvency are set aside, unless for new value. Moreover under paragraph 70 of Schedule B1 of the same Act, an administrator has the power to dispose of floating charges without the leave of the court. See L. Gullifer and J. Payne, *Corporate Finance Law: Principles and Policy*, Hart (2015).

[76] Recharacterisation risk occurs in other contexts too. For instance, in *Welsh Development Agency* v *Export Finance Co Ltd* [1992] B.C.C. 270, the Court of Appeal had to consider whether a particular Master Agreement, which was expressed to be an agreement of a sale, in fact merely created a secured loan. Taking account of the substance of the parties' dealings, the Court of Appeal found that it was valid as what it purported to be, namely an agreement for sale.

[77] In *Gray* v *G-T-P Group Ltd* [2010] EWHC 1772(Ch) and *Re Lehman Brothers International (Europe) in administration* [2012] EWHC 2997 (Ch) floating charges were held to fall outside the FCAR. Both cases considered the FCAR before the 2010 amendment discussed below.

[78] The Financial Markets and Insolvency (Settlement Finality and Financial Collateral Arrangements) (Amendment) Regulations 2010/2993, which came into force in April 2011, added a new definition of 'possession'. This amendment was not wholly helpful in that, while the definition of possession was widened to cover the situation where 'financial collateral has been credited to an account in the name of the collateral-taker', the amendment added an unhelpful qualification: 'provided that any rights the collateral-provider may have in relation to that financial collateral are limited to the right to substitute financial collateral of the same or greater value or to withdraw excess financial collateral.' This does raise the concern that *any* other right retained as part of the security interest arrangement might mean it falls outside this definition of possession. For a further discussion see L. Gullifer and J. Payne, *Corporate Finance Law: Principles and Policy*, Hart (2015).

[79] It might also be helpful in situations where a trust relationship is relied upon to ensure that the CCP's own assets (for instance generated by the investment of cash margin) are not comingled with collateral assets.

7.3 The benefits of qualification

The FCAR's benefits are not limited to avoiding the need to register the charge. The regulation also provides the remedy of appropriation: on default, the collateral taker can seize the collateral without an order from the courts and regardless of whether any other remedy (such as foreclosure) is also available.

The FCAR also helps in another way, in that it requires the collateral taker to value the collateral when it exercises a power of appropriation, 'in accordance with the terms of the arrangement and in any event in a commercially reasonable manner'.[80] This language (matching the 'commercial reasonable' requirement for the valuation of positions discussed in Box 3) sets a standard for collateral valuation at the point of appropriation.

7.4 Intermediated securities as collateral

Modern holdings in securities are characterised by intermediation, as we noted above. This often introduces further jurisdictions into what may already be a cross-border transaction, and thus intensifies conflict of law issues.[81] The absence of a consensus about how to work out which law applies to intermediated holdings in securities, coupled with the lack of consistency between domestic laws, creates legal uncertainty and, potentially, the risk that parties will not be able to enforce the rights they think they are entitled to as they do not apply in what turns out to be the relevant jurisdiction.

A related problem is that while in ordinary conditions most or all of the rights of the security holder pass along the intermediation chain – so that for instance if the security pays a coupon, this passes from the CSD to the custodian and then on up to the end investor – *all* rights do not always pass up. Thus far the cases in this area relate to types of security which are not permitted forms of collateral at most CCPs,[82] but market participants nevertheless should be aware that having rights in securities are not always the same as having securities.

The default rule with regards to the governing law for property rights is that the applicable law will be that of the place where the property is located (*lex situs*). This rule is straightforward to apply with traditional forms of securities: for bearer instruments, for example, the governing law would be the law of the location of the securities. It is not straightforward where there is a chain of interests in securities represented by book entries in accounts, and this problem continues to command a good deal of attention from stakeholders.

One approach to this problem that has gained traction in financial markets legislation is 'PRIMA', or the application of the law of the 'place of the relevant intermediary account'. This approach determines the law of each link in the intermediated holding chain by looking at the relationship between account holder and account provider. The PRIMA approach is adopted by the Hague

[80] See Regulation 18 of the FCAR. Collateral agreements will typically also expressly provide for the collateral taker to have a power of sale of the assets after an event of default, as an additional protection.
[81] Law reform has resolved some, but by no means all of these issues, as discussed later in this section.
[82] For instance, in *Eckerle* v *Wickeder* 2013 EWHC 68 (Ch), the ultimate beneficiary of interests in shares in a company registered in England but listed in Germany and held on an intermediated basis was found not to be a shareholder for the purpose of section 98 of the Companies Act 2006, and thus did not have standing to sue the company. See E. Micheler, *Intermediated Securities and Legal Certainty*, LSE Law Society and Economy Working Paper Series 03-2014 for a further discussion of the issues in this area.

Conference,[83] and in slightly different form by the FCAR and the SFR.[84] It ensures that only one law governs securities in each account. The shortcomings of the approach, however, include that it may be difficult to agree where an account is maintained in some cases, and that different governing laws will apply to different parts of the chain of interests in securities. Moreover, choice of law rules such as PRIMA do not harmonise the underlying substantive laws, so they do not ensure that a given process is necessarily treated in the same way in all jurisdictions.[85]

There has been some progress on harmonisation of substantive law relating to securities at an EU level. The FCD represented progress for rules relating to collateralisation, further underlining the point made above that it will be very important that CCPs' collateral arrangements are covered by this regime. A Securities Law Directive is being discussed which, if implemented, would seek to harmonise further securities law in the EU. Substantive reform on a global level is profoundly challenging, however. Thus for instance while UNIDROIT developed the 'Geneva' Convention on Substantive Rules for Intermediated Securities to address many of the issues we have discussed,[86] it has not yet been signed by any states apart from Bangladesh. Therefore, despite some regional progress, the substantive rules governing interests in securities remain fragmented, creating the potential for incompatibility and uncertainty.

8. Conclusions

The post-crisis financial markets reforms created many changes in market practice and structure. Systemic risk has been transformed, and some institutions, notably some CCPs, have flourished in these changed conditions. At the same time, other forces have also been playing out, such as the move from bearer to intermediated securities, and the increasing use of collateralisation. It is not unreasonable to call the totality of these changes an evolutionary jump in financial markets.

Large scale change can threaten parts of an ecosystem. In our context, practices that used to be effective may no longer be so, and new risks can arise. Legal uncertainty is one example of this.

We have shown how the legal framework provides certainty around many aspects of financial markets, but also that this robustness has been created through a combination of common law, contract, and legislation at both UK and EU levels. Some parts of the framework were equal to the challenge of providing robustness to the post-crisis reforms; others have been modified to meet this challenge.

However, it is inevitable, given the scale of the change in market structure and the complexity of the risk transfer being attempted, that some challenges should remain. One arises through the piecemeal

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[83] See Hague Conference on Private International Law, *Convention on the law applicable to certain rights in respect of securities held with an intermediary* (2006). This convention has not been signed by any members of the EU.

[84] See in particular Regulation 19 of the FCAR, where it is referred to as the 'standard test', and Regulation 23 of the SFR. The PRIMA test in this legislation differs from that in the Hague Convention. In the latter, the law of the account is the law agreed by the parties (Hague Convention, Article 4 (Primary rule)). In the FCD and SFD, as implemented in English law, the law of the account is the law of the country where the relevant account is maintained, or (for SFD purposes) where the register or central deposit system is maintained.

[85] Conflicts of law and substantive legal issues relating to intermediated securities holdings in the EU are discussed in detail in P. Paech*, Cross-border issues of securities law: European efforts to support securities markets with a coherent legal framework*. Briefing note (Directorate General for Internal Policies, Policy Departement A: Economic and Scientific Policy), May 2011, IPA/ECON/NT/2011-09.

[86] See H. Kanda, C. Mooney, L. Thévenoz and S. Béraud, *Official Commentary on the UNIDROIT Convention on Substantive Rules for Intermediated Securities*, OUP (2012).

nature of the legislative framework. Another is created by the key role of contractual provisions in derivatives markets: here robustness depends on getting the drafting right. We address each of these further below.

8.1 Coherence of legislation

Central clearing is now subject to a great deal of detailed regulation. We have shown that there is extensive support for CCPs' default management processes, directly in Part VII and the SFR, and indirectly through the FCAR. However, we have also shown that there remain some elements in the legal framework for DMP which lack complete coherence, or where questions and uncertainty may arise. Now that the surge of rule-making in the wake of the crisis is subsiding, it is a timely moment to consider how the legislative framework as a whole fits together, and how disparate elements may be made to work together more efficiently. Table 3 summarises the principal areas where consolidation or harmonisation could increase legal certainty in this context.

Table 3: Potential areas of law reform to enhance legal certainty in CCP DMP

Legislation	Issue	Change to consider
FCAR	The definition of covered floating charges in regulation 3.	Clarifying the rights available to collateral providers which give rise to qualifying charges especially with regard to intermediated securities.
Part VII	Coverage of section 159.	Broadening the disapplications to provide protections to CCP default rules beyond the provisions of insolvency law.
Part VII	Notice.	To remove or reduce the limitation in section177, e.g. to situations where the CCP has actual notice. To afford CCPs appropriate protection from claims arising from notice and knowledge.
Part VII; SFR (EMIR)	Various definitions of default rules.	Harmonisation across legislation, and simplification so that 'default rules' in legislation match default rules in CCP rule books.
Banking Act 2009	Section 48Z: stays.	Clarifying which 'substantive obligations' permit a CCP to call a default and when a CCP cannot call a default because the trigger is linked to resolution.

More broadly, given the growth of intermediated securities and the importance of custodians in the financial system, there may be a case for considering the benefits of harmonising the legal framework for custody arrangements and the treatment of assets held in connection with custody agreements across the EU. The recent Central Securities Depositories Regulation which provides rules to regulate CSDs in the EU may provide an exemplar here.[87]

8.2 Contractual documentation

We have demonstrated that effective default management requires clearing houses and their counterparties to have well-drafted contracts. Our analysis offers various specific recommendations for such contracts, as the issues are, in places, somewhat delicate. We summarise the points discussed in the body of the paper in Table 4 below.

An over-arching point is that, while there is relatively little case law directly pertaining to CCPs, there is great value in drawing upon other lessons available from the financial markets. In particular, litigation around calculating Early Termination Amounts under the 1992 and 2002 ISDA Master Agreements, and around close out of various types of financial contracts, provides valuable lessons for CCPs about how to draft contracts and act in accordance with them in order to increase legal certainty.

[87] See the CSDR.

Table 4: Some key contractual pitfalls in clearing arrangements and potential mitigations

Issue	**Mitigation**
Potential need to declare default at the CCP without a failure to pay or insolvency.	Widely drafted events of default including cross default provisions and credit support provider default.
Some defaults at the CCP may fall outside desired protections.	CCP processes should include explicit consideration of the protections available, given the nature of the default.
Possibility of *post hoc* challenges to CCP close out valuations.	Careful drafting is needed in clearing agreements which give the CCP discretion in valuation, including in auctions. Consideration of implications of 'commercially reasonable' language pertaining to processes and/or valuations.
Potential for badly-structured collateral arrangements to fall outside FCAR.	Collateral agreements should clearly document the rights available to the collateral provider, and should be informed by the FCAR restrictions.
Importance of identifying the precise nature of the collateral provided.	Ensure that operational arrangements for collateral allow the collateral to be identified, and that collateral agreements are effective given the intermediation chains in use.
Conflict of law in intermediated collateral.	Make clear provision for governing law, taking into account the law of the location of the underlying securities and of the intermediaries involved in the chain. Awareness of substantive law relevant to the chain, especially to the extent there are interests outside the EU.
Risks of cash collateral or arising from collateral being held 'as banker'.	Clear characterisation of all cash used as or arising from collateral.

8.3 Final thoughts

The central finding of our paper is that reliable and enforceable default management relies on robust contracts and the predictable application of legislative rules. Accordingly, responsibility for legal certainty is shared between CCPs, their counterparties, and law-makers. We have shown that there is already comprehensive, if not complete, support for CCP default management processes through various pieces of legislation including EMIR, Part VII, the FCAR and the SFR. One important question is whether so many domestic and regional sources of law work together wholly coherently: there are some areas where the issues here are substantial enough to warrant consideration of further legislation.

Clearing houses should be aware that it is impossible to preclude the possibility of legal challenges to a complex aspect of a complex industry. It is only by paying close attention to the underlying legal framework, and by looking beyond the sector in order to learn from the experiences, shocks and evolutionary leaps in other parts of the financial markets that CCPs will be in a strong position to manage these risks.

Notwithstanding all this, the construction of legally robust default management procedures can be approached with some optimism by the well-advised. The issues are sometimes delicate, but the legal framework has proved capable of providing substantial legal certainty despite the evolutionary jumps that financial markets are prone to display.

Appendix – Principal legislation for UK CCPs (in chronological order, by main instrument)

EU level 1[88]	EU level 2	UK primary	UK secondary	Notes:
		Part VII Companies Act 1989 Part 18 Financial Services and Markets Act 2000	Financial Services and Markets Act 2000 (Recognition Requirements for Investment Exchanges and Clearing Houses) Regulations 2001/995 (as amended- see EMIR, below)	Proceedings of recognised clearing houses (as defined by FSMA and secondary legislation) take precedence over insolvency law
Settlement Finality Directive 98/26/EC			Financial Markets and Insolvency (Settlement Finality) Regulations 1999 SI 1999/2979 as amended by: -Regulations 2006/50 -Regulations 2009/1972 -Regulations 2015/347	Designated 'systems' protected from disruption caused by insolvency of participant in system. Certain aspects of insolvency law disapplied. Any authorised CCP is a system for SFD purposes: see Article 17(4) EMIR.
Financial Collateral Arrangements Directive 2002/47/EC as amended by 2009/44/EC			Financial Collateral Arrangements (No. 2) Regulations 2003/3226 as amended by, e.g.: -Regulations 2010/2993	Facilitates posting of financial collateral, e.g. by disapplying formalities and protecting netting and a collateral-taker's right of use.
European Market Infrastructure Regulation (EU) 648/2012	December 2012: Six regulatory technical standards and three implementing technical standards. E.g. RTS for CCPs: -152/2013: capital -153/2013: requirements for CCPs -149/2013: indirect clearing, clearing obligation, NFCs Further RTS e.g. August 2015 on clearing IRS	Resulting amendments in numerous UK rules e.g. - Financial Services and Markets Act 2000 (OTC derivatives, CCP and Trade Repositories) Regulations 2013/504 - Financial Services and Markets Act 2000 (OTC derivatives, CCP and Trade Repositories) (no. 2) Regulations 2013/1908 - Bank of England instrument: Recognised Clearing House Rules Instrument 2013 - FCA instruments: OTC derivatives, CCP and Trade Repositories Instrument 2013 and OTC derivatives, CCP and Trade Repositories Instrument (no. 2) 2013, amending FCA Handbook. - CASS rules for client assets[89]		EMIR imposes mandatory clearing obligation for certain classes of derivatives (Article 4) and reporting obligation for all derivatives (Article 9). Framework rules for risk mitigation in non-cleared contracts (Article 11). Also sets up regime for authorisation and supervision of CCPs (Title III) and requirements for CCPs (Title IV) and for trade repositories (Title VI).
Banking Recovery and Resolution Directive 2014/59/EU		Banking Act 2009	Banking Act 2009 (Restriction of Partial Property Transfers) Order 2009/322 Banking Act 2009 (Restriction of Partial Property Transfers) (Recognised Central Counterparties Order) 2014/1828*	Regime for recovery and resolution of credit institutions and investment firms. Provides for transfer of property to private sector entity or to bridge bank, or transfer of ownership. Recovery and resolution regime for CCPs is ongoing work at EU level but see 2014 UK secondary legislation to extend equivalent regime to CCPs.*

[88] EU Regulations take effect without the need for implementing national legislation, but national law may need to be amended to remove inconsistencies or facilitate measures in the Regulations. EU Directives require implementation by member States.
[89] See FSA, *Changes to client assets regime following EMIR*, Policy Statement PS12/23 (December 2012).