

Financial Services Authority

Assessment of LCH.Clearnet
Limited against the
CPSS-IOSCO recommendations
for Central Counterparties

June 2006



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1 Introduction

Assessors and objective

Assessors: The Financial Services Authority (FSA) and the Bank of England (BoE).

Objective: To assess whether the methods used by LCH.Clearnet Limited (LCH) to manage the risks it faces as a central counterparty (CCP) comply with the internationally recognised ‘Recommendations for Central Counterparties’ developed jointly by the Committee on Payment and Settlement Systems (CPSS) and the Technical Committee of the International Organisation of Securities Commissions (IOSCO).

Scope of the assessment

The assessment is focused on LCH only, as it is the main CCP active in the UK’s financial markets. The CCP activities of other firms are not currently of a scale to attract an assessment.

Where relevant, this assessment takes into account the fact that LCH is now a wholly owned subsidiary of LCH.Clearnet Group Limited.

Scope of coverage of the CCP

LCH provides CCP services for:

- London Stock Exchange (LSE);
- Euronext.LIFFE (LIFFE);
- ICE;
- ICE Futures;

- London Metal Exchange (LME);
- virt-x; and
- EDX.

It also provides a broad range of services to the over-the-counter (OTC) markets for products including interest rate swaps, bonds and repos. It operates in a number of currencies including Sterling, Euro and US Dollars. Further details on the markets served can be found on LCH's website.¹

Institutional and market structure

- Cash equity trading is undertaken via the LSE and virt-x, cleared by LCH (as CCP), and settled in CREST, Euroclear Bank SA/NV (Euroclear)² and SegaInterSettle (SIS),³ as securities settlement systems (SSSs).
- Bond trading is undertaken via multilateral trading facilities, bilateral trading systems, voice brokers, etc., cleared by LCH as CCP and settled at CREST, Euroclear and Clearstream International (Clearstream) as SSSs.
- Financial derivatives are traded at LIFFE and EDX, and commodity derivatives at the LME, ICE Futures and LIFFE, with clearing taking place at LCH. Almost all instruments (with the exception of certain commodities and metals) go to cash settlement on expiry rather than physical delivery.
- In terms of volume cleared by LCH, the overall trade volume for 2005 was 665 million contracts. These trades represented a notional value cleared of €386 trillion.

Regulatory structure

LCH is incorporated in the UK as a private limited company, and as such is subject to UK company law. It is regulated by the FSA:

- as a Recognised Clearing House (RCH) under the Financial Services and Markets Act 2000 (FSMA);
- subject to the Financial Services and Markets Act 2000 (Recognition Requirements for Investment Exchanges and Clearing Houses) Regulations 2001 (SI 2001/995) (the Recognition Requirements);
- according to the FSA's specialist sourcebook 'Recognised Investment Exchanges and Recognised Clearing Houses' (REC); and

1 www.lchclearnet.com

2 An International Central Securities Depository (ICSD)

3 The Swiss CSD

- designated under the Financial Markets and Insolvency Regulations 1999 (SI 1999/2979) (the Settlement Finality Regulations);

it is also

- a Designated Clearing Organisation in the USA and subject to Commodity Futures Trading Commission (CFTC) rules and the US Commodity Exchange Act;

in each case as amended from time to time.

LCH has an embedded payment arrangement, known as the Protected Payment System (PPS), which is used to transfer funds to and from its members. The BoE has oversight responsibilities for payment systems, as set out in the 2006 revised Memorandum of Understanding (MoU) between the BoE, the FSA and the Treasury, and oversees LCH's operation of the PPS. It sets out its conclusions in its annual Payment Systems Oversight Report, which can be found on its website.⁴

The BoE must also be consulted about the designation of embedded payment arrangements under the Settlement Finality Regulations.

Information and methodology used for the assessment

The assessment uses the recommendations and the methodology developed jointly by the CPSS and IOSCO as set out in their report entitled 'Recommendations for Central Counterparties' published in November 2004.

Assessors gathered sufficient information to formulate draft answers to the key questions, which were then discussed with LCH and updated as appropriate.

The main sources of information used in making the assessment were:

- LCH's own documentation and their answers to supplementary questions;
- the FSA's and BoE's cumulative knowledge and experience from their regulatory and oversight relationships with LCH.

4 www.bankofengland.co.uk/publications/psor/index.htm

2 Assessment of observance

Executive summary

This is the first assessment of LCH against the CPSS-IOSCO recommendations for CCPs. These recommendations represent an internationally developed and agreed minimum standard of good practice that systemically important CCPs should seek to achieve.

LCH observes fully 14 of the 15 recommendations and broadly observes the other, as set out in Table 1 below.

LCH uses a combination of the central bank and private settlement bank models for the PPS, its embedded payment system, and has been designated by the FSA (after consultation with the BoE) under the Settlement Finality Regulations (Recommendation 9). Consequently, the finality of both securities and payment transfers is protected from legal challenge in the event of a member of the system becoming insolvent. Additionally, LCH routinely monitors the operational performance of PPS banks and their efficiency in meeting the required deadlines. However, the impact of PPS or commercial concentration bank failure in terms of potential losses and liquidity pressures is not routinely assessed. Instead, LCH uses a ratings-driven approach to managing its total exposure to any one bank. In order to achieve full observance of this recommendation, LCH should assess routinely the potential losses and liquidity pressures arising from the failure of a PPS or commercial concentration bank.

As a systemically important CCP, we consider that LCH should seek to achieve full observance of all 15 recommendations. The actions we consider necessary to secure full observance of Recommendation 9 are summarised in Table 2.

Table 1: Collation of assessment results by assessment category

Assessment category	Recommendations
Observed	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15
Broadly Observed	9
Partly Observed	
Non-Observed	
Not Applicable	

Table 2: Summary of Action(s) to secure full observance

Recommendation	Action(s) to secure full observance
9 (Money settlements)	LCH to assess routinely the potential losses and liquidity pressures arising from the failure of a PPS or commercial concentration bank.

Recommendation by recommendation assessment of observance

Recommendation 1 – Legal risk

A CCP should have a well founded, transparent and enforceable legal framework for each aspect of its activities in all relevant jurisdictions.

Answers to key questions

Question 1 (Clarity, coherence and availability of laws and regulations)

As a private limited company, LCH is subject to UK company law. As a RCH it is subject to FSMA, the Recognition Requirements and the REC part of the FSA Handbook. As a Designated Clearing Organisation in the USA it is subject to CFTC rules and the US Commodity Exchange Act.

LCH members are subject to the rules made by LCH in the conduct of their business.

All applicable legislation, regulations and rules are publicly available on the relevant websites.⁵

⁵ www.opsi.gov.uk (for national legislation and statutory instruments), <http://fsahandbook.info> (for FSA rules) www.lchclearnet.com (for LCH rules), www.cftc.gov (for Designated Clearing Organisation rules)

There is no evidence (for example, through successful legal challenges) that the applicable legislation, regulations and rules are not internally consistent.

Question 2 (Effectiveness of laws and regulations)

LCH's operations as a CCP are governed by the contract it has with its members. All members enter into registered contracts as principal rather than agent, whether or not they are acting on behalf of a client.

LCH's rules and other procedures cover all significant features of its operation as CCP and are enforceable against members by virtue of the contractual relationship. Further assurance on finality issues is provided by LCH's designation under the Settlement Finality Regulations, which implement in the UK the EU Settlement Finality Directive (Directive 98/26/EC). These regulations reduce the risks associated with participation in designated payment systems by minimising the disruption caused by insolvency proceedings against certain participants in such systems.

Question 3 (Enforceability of rules, procedures and contracts on member default)

LCH is protected by Part VII of the Companies Act 1989 (Part VII) from the general application of the insolvency laws of England and Wales. In the event of a member default, Part VII protects LCH's rights to manage the default by – for example – netting positions or offsetting profits and losses, and prevents a liquidator from 'cherry-picking' profitable contracts. The default rules, as protected by Part VII, apply to all (UK and non-UK) members.

Part VII is due to be strengthened further to take account of changes that have occurred since the Companies Act 1989 was passed, but it remains broadly fit for purpose.

Further protection comes from LCH's designation under the Settlement Finality Regulations. This protection further reduces any possibility that English courts would entertain a challenge to the actions taken by LCH to manage a member default.

LCH has had very few cases of member default and its actions have not been subject to legal challenge in the UK. But, given the protections afforded by both Part VII and the Settlement Finality Regulations, we do not believe there is any significant risk that actions taken by LCH in managing a future default would be subject to successful legal challenge.

Question 4 (Conflicts of laws)

LCH has taken steps to check the adequacy of its legal framework for cross-border participation. Recognising that the protections of the Settlement

Finality Regulations are limited to EU Members, LCH has taken legal advice in the US and other countries regarding the enforceability of its charge and other methods of taking collateral. Non-UK members wishing to lodge non-cash collateral have to provide a legal opinion to demonstrate the charge would be enforceable in their country and/or highlight any relevant issues.

Although LCH's netting arrangements are subject to local insolvency regimes, the resulting legal risk is minimised through the holding of collateral and other stock in countries where LCH is more comfortable with local enforceability and local insolvency law and wherever possible in accounts in its own name. LCH has external legal advice on US, Swiss and Belgian enforceability issues.

Assessment: Observed

Recommendation 2 – participation requirements

A CCP should require participants to have sufficient financial resources and robust operational capacity to meet obligations arising from participation in the CCP. A CCP should have procedures in place to monitor that participation requirements are met on an ongoing basis. A CCP's participation requirements should be objective, publicly disclosed and permit fair and open access.

Answers to key questions

Question 1 (Financial and operational requirements)

LCH has established minimum requirements for its members' financial resources which vary depending on the markets to be cleared and the type of membership. For example, LCH – in coordination with the exchanges served by LCH – sets minimum requirements for the net capital and core capital of exchange clearing members. The required minimum levels applicable to the clearing of any one exchange vary according to the range of clearing business undertaken, with the requirement for the clearing of own business being the lowest and the requirement for the clearing of the business of other exchange members being the highest.

There are higher minimum capital requirements in non-exchange markets, reflecting the inter-professional nature and high volume/value of transactions on those markets. The minimum capital requirement of a member clearing more than one market or product is the sum of the minimum capital requirements for each market or product. Members must also comply with regulatory capital requirements relevant to the full scope of their activities.

LCH's requirements are not additional to financial regulatory requirements, but if the regulatory requirements are lower than the LCH minimum, additional resources must be provided.

In terms of creditworthiness, members are given a credit score which serves to focus LCH's monitoring (see answer to Question 2 below). Credit evaluations of each member are established using primary inputs of financial reports and regulatory returns, external credit ratings, LCH's own evaluation of standards of management and control, and in certain circumstances information received under information-sharing agreements

In terms of operational capability, LCH requires that members have:

- arrangements to effect payment obligations to LCH;
- arrangements to effect collateral and delivery obligations to LCH;
- staff with appropriate experience and training; and
- a board and senior management conforming to suitable standards of fitness and properness.

All members must have money settlement arrangements with a PPS bank, through which cash margin payments to and from LCH, payments for physical deliveries under commodity contracts, cash settlements and contributions to the default funds are made.

The PPS arrangements operate both in the UK and the USA. The UK-based arrangements operate until 16:00 London time, and all members are also required to have PPS banking arrangements in the USA to effect FedWire transfers to LCH accounts beyond the UK cut-off time for PPS.

In addition, all members must have the necessary CSD or SSS facilities necessary to meet their delivery obligations.

Question 2 (Monitoring of requirements)

LCH monitors that membership requirements are met on an ongoing basis, with less credit-worthy members subject to closer monitoring. LCH also pays particular attention to positions that are large in relation to either a member's financial resources or to open interest in a particular contract or product group.

Compliance with net capital requirements are monitored through the regular, automated receipt of FSA returns from those firms that are FSA registered. Other firms either submit management accounts or submit the returns they make to their non-UK regulators. Data is generally received within 30 days of the end of each financial quarter. In addition, members are required to immediately notify LCH of significant decreases in their capital and of any

additional information relevant to their financial health and clearing membership.

LCH is currently working on completing the backlog of member reviews and is in the process of changing its policies to ensure its approach is more risk based.

Question 3 (Objectivity and disclosure of participation requirements)

LCH publishes only minimum membership criteria. Any additional participation requirements are set on the basis of a credit judgement about the potential member concerned.

LCH has procedures in place to facilitate the orderly exit of members. LCH or the member firm is able to terminate membership with three months notice. The member is obliged to close out all positions within this period before their membership finishes. LCH will help the member through this process as necessary. LCH publishes a summary of the process on its website.⁶

Assessment: Observed

Recommendation 3 – measurement and management of credit exposures

A CCP should measure its credit exposures to its participants at least once a day. Through margin requirements, other risk control mechanisms or a combination of both, a CCP should limit its potential losses from defaults by its participants in normal market conditions so that the operations of the CCP would not be disrupted and non-defaulting participants would not be exposed to losses that they cannot anticipate or control.

Answers to key questions

Question 1 (Measurement of exposures)

LCH measures its exposures to its members at least once a day and the information on which the calculations are based is timely.

LCH has routine intra-day capability (the ability to register contracts and recalculate initial and variation margin using real time positions and prices) for all markets except LIFFE, ICE, LME and ICE Futures (the Futures Markets).

6 www.lchclearnet.com

For the Futures Markets, contracts are registered at the end of the day and margin is collected in the early morning call the next day. Once registered, LCH can call additional margin intra-day if intra-day price movements are severe enough to challenge the adequacy of existing margin. LCH usually uses a price movement of at least 65% of the initial margin level as the trigger for an intra-day call.

LCH's monitoring of positions is focused according to its internal credit evaluations. Particular attention is paid to positions which are large in relation to either a member's financial resources or to open interest in a particular contract or product group that threaten the assumed holding period of the initial margin calculation.

Position monitoring looks at house and client accounts both separately and together. If the monitoring gives rise to concerns about the size of positions in a member's client account further information is sought, notably about the concentration of individual client positions and the risk management of client related business.

Question 2 (Limitation of exposures)

LCH limits its exposures to potential losses from defaulting members on the basis of its membership requirements (see Recommendation 2), margining and other risk control mechanisms. While LCH's margin requirements are central to its risk management, LCH also has other measures at its disposal, including:

- additional financial resource requirements (buffers);
- additional initial margin requirements;
- imposition of position limits;
- trading for liquidation only;
- prior authorisation of trades above a certain size; and
- issuing instructions to reduce positions.

LCH also monitors large cumulative profits or losses. If large and unusual trading activity is detected (relative to previous exposures) LCH will contact compliance officers and seek assurances from the senior executives or boards of a member firm or parent company.

Assessment: Observed

Recommendation 4 – Margin requirements

If a CCP relies on margin requirements to limit its credit exposures to participants, those requirements should be sufficient to cover potential exposures in normal market conditions. The models and parameters used in setting margin requirements should be risk-based and reviewed regularly.

Answers to Key Questions

Question 1 (Sufficiency of margin cover)

LCH's initial margin policy is that it should provide cover for potential losses due to price variations before the contract can be closed out in all but extreme market conditions. The holding period for each contract is set to reflect LCH's assumptions regarding likely market volatility and liquidity.

Variation margining, to reflect price movements after the registration of a contract, takes place at a maximum interval of 24 hours. LCH can and does make intra-day margin calls when prices are especially volatile (see Recommendation 3).

The performance of margin models is assessed daily through the comparison of initial margin held against actual observed profits and losses. In addition, at each review of parameters, LCH assesses the actual level of observed coverage against that intended. LCH will consider the new parameters in the context of intended coverage and both observed and future market volatility.

The observed performance of the models is reviewed daily to identify any areas of immediate concern. In addition, parameter reviews are held a minimum of every three months and compared against intended coverage.

Question 2 (Ability to make intraday margin calls)

LCH's routine intraday margin calls are subject to the call being above the minimum transfer amount of £10,000. In addition, LCH allows for some small intra-day erosion of initial margin levels in markets with full intra-day capability to minimise the number of intra-day calls.

LCH has routine intra-day capability (the ability to register contracts and recalculate initial and variation margin using real time positions and prices) for all markets except the Futures Markets. Intra-day recalculations are made at least four times per day. Additional margin is called either routinely at 13:00 or on an ad hoc basis as necessary.

For the Futures Markets the current methodology employed by LCH is consistent with the end-of-day registration of new trades, and intra-day margin is called only in respect of registered contracts. If prices in a contract change by the trigger amount (65% or 85% of the initial margin level for that

contract, dependent upon the importance of the contract) during the trading day, LCH will make an intra-day call on members on the basis of their positions the previous night (see Recommendation 3).

Where additional funds are required, they are collected in cash through the PPS. Where surplus cover, in cash or non-cash collateral, is available, LCH uses it to satisfy the call. LCH pre-notifies exchange staff of intra-day calls but its full authority to exercise its risk management discretion is the same as it is for increases in initial margin levels. Again, members are not involved in the decision taking process.

Question 3 (Collateral acceptability and haircuts)

LCH keeps the collateral lodged by members under constant review and has the discretion to decline any type of collateral used by its members even if it is covered within its policy.

The types of collateral that LCH accepts are the most liquid and highest quality financial instruments. These include cash and government debt from certain countries. A full list is available on LCH's website.⁷

The application of the collateral acceptance policy is subject to internal audit. The appropriateness of the policy is reviewed by senior management in the Risk Management, Treasury, Operations and Legal departments each year, and by the Risk Committee every two years.

Collateral haircuts are set by the Risk Management Department which reviews their appropriateness every six months. If market conditions dictate, haircuts can be changed between the regular reviews.

Assessment: Observed

Recommendation 5 – Financial resources

A CCP should maintain sufficient financial resources to withstand, at a minimum, a default by the participant to which it has the largest exposure in extreme, but plausible, market conditions.

Answers to key questions

Question 1 (Stress testing scenarios and default procedures)

LCH's default fund is designed to withstand the default of the member with the largest position and its associates, together with the simultaneous default

⁷ www.lch.com/risk_and_margining/collateral.asp

of the five least creditworthy members, representing a measure of contagion risk. It is stress tested daily, and uses a combination of:

- historical scenarios (for example, the 1987 stock market crash, Sterling Exchange Rate Mechanism exit, the 1998 bond market crisis, the Long Term Capital Management collapse and Hurricane Katrina);
- theoretical stressors (where observed correlations in historical scenarios are stressed further); and
- regulatory driven Capital Adequacy Directive (CAD) scenarios.

LCH has a total of 70 scenarios which are run daily across the portfolios of all members.

The results of stress testing are integral to the overall member monitoring undertaken by the Risk Management Department, and in that respect form part of the routine oversight and monitoring of members.

The results of stress testing also inform the 'Default Fund adequacy exercise', undertaken each quarter by the Risk Committee and reported to the Board.

If the results of stress testing move beyond certain trigger points between quarterly assessments, the Secretary of the Risk Committee is obliged to report to the Chairman of the Risk Committee (who is a non-executive director). If they consider it necessary they would convene a special meeting of the Risk Committee. In any case, the Secretary of the Risk Committee is obliged to provide a full report with recommendations at the next meeting of the Risk Committee.

LCH's policy focuses exclusively on the adequacy of the Default Fund and ignores the supplementary insurance cover. The Default Fund is held as secured cash deposits at a number of financial institutions.

LCH has a clear policy on actions to be taken in the event that stress testing results indicate resources are not likely to be adequate to meet LCH's obligations resulting from a default. LCH has adhered to this policy in the past, and the policy is available to participants and authorities.

Question 2 (Financial resources in the event of a default)

The default fund is currently £582.5m. In addition, should the default fund be exhausted by a catastrophic default, LCH would have access via an insurance policy to a further £100m per single member group default (with a maximum pay out of £200m). This amount would be available within 10 business days of a claim being made.

Question 3 (Any financial resources not immediately available)

LCH has no committed credit lines in place to cover against a delay in payment by the insurer, although this potential risk is mitigated by LCH having £60m of uncommitted guidance lines. LCH also has a Board set, minimum daily liquidity target of £1.15b in various currencies. LCH's Treasury meets this target using a combination of overnight unsecured and tri-party repos.

Assessment: Observed

We consider that LCH observes this recommendation because it maintains significant daily liquidity, mitigating the risk that its uncommitted guidance lines would not be available to cover a delay in payment by the insurer. (Q3)

Recommendation 6 – Default procedures

A CCP's default procedures should be clearly stated, and they should ensure that the CCP can take timely action to contain losses and liquidity pressures and to continue meeting its obligations. Key aspects of the default procedure should be publicly available.

Answers to key questions

Question 1 (Default procedures)

LCH's default rules are published on its website.⁸

A default is defined as ‘...a member appearing to the Clearing House to be unable or to be likely to become unable to meet his obligations...’ permitting some discretion in deciding what constitutes a default. The default procedures give wide discretion to LCH to manage the situation in the most appropriate way and permit the application of the defaulter's financial resources lodged with LCH.

Questions 2 (Enforceability of default procedures)

Part VII and designation under the Settlement Finality Regulations give a significant degree of assurance that the decisions taken would not be stayed or reversed. However, as mentioned under Recommendation 1, further changes to the Companies Act 1989 are necessary to remove any uncertainty arising from innovations since the Act was passed. Member and client assets are treated separately under the default arrangements.

8 www.lch.com/Images/DEFAULT%20RULES%20Apr2005%20numbering_tcm3-359.pdf

Question 3 (Internal plans for default management)

LCH has an internal Default Management Framework that provides the framework for single or multiple product default management. In addition, LCH has default management plans and arrangements for each of the business streams.

All of the plans for managing a default are subject to the discretion and assessment, at the time, of the Chief Executive, who has overall responsibility for the management of a default.

The plans address the need to coordinate with the regulatory authorities, the cleared exchanges and LCH.Clearnet SA⁹ (SA) and are subject to ongoing review and development.

Question 4 (Default procedures publicly available)

As previously noted, the default rules are available on LCH's website.

Assessment: Observed

Recommendation 7 – Custody and investment risks

A CCP should hold assets in a manner whereby risk of loss or of delay in its access to them is minimised. Assets invested by a CCP should be held in instruments with minimal credit, market and liquidity risks.

Answers to key questions

Question 1 (Custody risk)

LCH holds cash collateral at a number of banks, while non-cash collateral is mainly held in CSDs, although a bank custodian is used for US Treasuries. LCH places reliance on SA's verification of these entities' procedures and practices, which are performed for group purposes and confirm compliance with Recommendation 12 of the CPSS-IOSCO Recommendations for Securities Settlement Systems.

LCH has conducted due diligence on the legal agreements surrounding the holding of collateral. This has confirmed the enforceability of the legal arrangements in all the jurisdictions in which collateral is held. The only securities held outside the European time zone are held in New York. LCH has agreements and procedures for liquidations of government bonds held for members as collateral.

⁹ The other member of the LCH.Clearnet Group, and the CCP for contracts on various exchanges in France, Belgium, the Netherlands and Portugal.

Question 2 (Investment security)

The vast majority of cash deposits are secured on a tri-party repo basis. However, not all cash can be secured owing to LCH's liquidity requirements, intra-day calls made too late in the day to be invested on a secured basis, settlement failures and payment flow imperfections. Any loss arising to LCH from the default of a bank holding an unsecured deposit cannot be covered by member margin or the default fund.

Overall counterparty limits are set on the basis of public credit ratings, and where the legal counterparty is not credit rated, the parent rating is used. The overall limit cannot exceed 10% of the bank's regulated capital.

The collateral acceptance policy is covered in Recommendation 4, above. Market risk is minimised through conservative haircuts, while liquidity risk is minimised by accepting only the most liquid and highest quality financial instruments.

In the event of a member default, LCH would first apply the defaulting member's initial margin and any surplus cover from the defaulter to cover losses and costs arising from the default. Only if these resources were insufficient would LCH apply the following funds in order of recourse:

- assets and the default fund contribution of defaulter;
- current year's pre-tax earning (up to £10m);
- default fund contributions of non-defaulting members;
- insurance cover;
- any other commitments from members; and
- the capital base of LCH.

Question 3 (Overall exposure to obligors)

In making its investment decisions, LCH takes into account its overall credit risk exposures to individual obligors (whether from cash investments or other relationships) and ensures that its overall credit risk exposure to any individual obligor remains within acceptable concentration limits.

Assessment: Observed

Recommendation 8 – Operational risk

A CCP should identify sources of operational risk and minimise them through the development of appropriate systems, controls and procedures. Systems should be reliable and secure, and have adequate, scalable capacity. Business continuity plans should allow for timely recovery of operations and fulfilment of a CCP's obligations.

Answers to key questions

Question 1 (Procedures to identify operational risk)

Operational risk is managed through systems and procedures. Within these, processes are documented, authorisation is independent and transactions are monitored and reconciled regularly. To strengthen its procedures in this area, LCH is intending to implement the Basel II basic indicator approach for operational risk.

Question 2 (Business continuity plans)

LCH has comprehensive business continuity arrangements. These were tested fully on 7 July 2005, when the terrorist attacks in London meant that, although LCH's offices were evacuated for several days, activities continued uninterrupted. LCH is considering the lessons learned from the invocation of the business continuity arrangements, and is considering further enhancements, such as split-site operations.

Question 3 (Adequate controls and staff)

LCH has implemented the Turnbull approach, which provides a mechanism for management to provide assurance to the Board on the effectiveness of the internal risk control framework. This mechanism has identified all of the major risks arising from the activities of LCH, including those outsourced to third-party providers.

Reviews are conducted with a number of suppliers to discuss their role as service providers. These meetings are held at least at management level.

Independent review of operational performance is achieved through the Operations Committee of LCH. This committee regularly reviews reports for all production and operational incidents.

Part of the internal audit service involves providing advice on governance, risk management and control practices. Operational risk and control-related advice represents a significant proportion of this 'advisory service'. There is also an independent adviser on operational risk within executive management.

In keeping with good internal audit practices, operational risks and controls are an embedded part of internal audit work. Risk assessments conducted by internal audit take into account operational risk, both at a high level (for example, during regular reviews of the ‘audit universe’) and at a detailed level (for example, during the planning stage of audit assignments).

Question 4 (Availability of key systems)

LCH grades incidents affecting its key systems on a scale from 1 to 5, with 1 being the most serious and 5 the least.

There is no evidence from operational data received that key systems are not reliable, secure and able to handle volume under stress conditions.

LCH seeks to ensure that all systems have headroom capacity well in excess of expected volumes.

Assessment: Observed

Recommendation 9 – Money settlements

A CCP should employ money settlement arrangements that eliminate or strictly limit its settlement bank risks, that is, its credit and liquidity risks from the use of banks to effect money settlements with its participants. Funds transfers to a CCP should be final when effected.

Answers to key questions

Question 1 (Settlement bank model)

LCH uses a combination of the central bank and private settlement bank models for the PPS, its embedded payment system. Currently, for Sterling and Euro, the Bank of England is the concentration bank. For US Dollars, Citibank is the concentration bank and for all other currencies the concentration bank is HSBC.

Question 2 (Finality of payments)

LCH has been designated by the FSA under the Settlement Finality Regulations. The effect of this on the PPS is that when a PPS Bank sends a SWIFT message confirming payment on behalf of a member, the sending of the message represents an irrevocable commitment by the PPS bank on behalf of that member to pay what has been demanded by LCH. Funds transfers by the PPS banks to and from the concentration banks are effected through CHAPS Sterling, CHAPS Euro, FedWire or via nostro accounts.

Question 3 (Monitoring of settlement banks)

The PPS system exposes LCH to the risk that a PPS or commercial concentration bank could fail. This risk cannot be strictly limited, as the amounts involved will be a factor of business undertaken by members and price movements in the markets served.

If a PPS bank failed before making an unconditional transfer to the LCH account, then the members affected would be expected to instruct an alternative PPS bank. If a PPS bank failed after making an unconditional transfer to the LCH account, then the risk of loss would be with LCH.

This risk is mitigated in two ways. First, PPS banks have to have a minimum Fitch credit rating of A- (or the S&P or Moody's equivalent). Second, LCH has ensured that its policy on the timing of transfers from PPS banks to concentration banks is more closely adhered to, to more effectively limit the time period in which it is exposed to the risk of bank failure.

LCH routinely monitors the operational performance of PPS banks and their efficiency in meeting the required deadlines. A monthly report on performance is prepared for LCH senior management, and regular 'PPS bank forums' are held where performance issues are discussed. Particular performance issues are discussed directly with the senior management of the bank(s) concerned.

Question 4 (Exposure to settlement bank failure)

LCH does not routinely assess the impact of PPS or commercial concentration bank failure in terms of potential losses and liquidity pressures. Instead, LCH uses a ratings-driven approach to managing its total exposure to any one bank

Assessment: Broadly observed

LCH does not assess routinely the potential losses and liquidity pressures arising from the failure of a PPS or commercial concentration bank. (Q4)

Recommendation 10 – Physical deliveries

A CCP should state clearly its obligations with respect to physical deliveries. The risks from these obligations should be identified and managed.

Answers to key questions

Question 1 (Clarity of LCH's obligations on physical deliveries)

LCH's regulations state its obligations in respect of physical deliveries in all relevant markets. Contracts are physically delivered upon expiry or option

exercise. LCH obligations are thus to make delivery of the relevant instrument or (as appropriate) indemnify participants for losses incurred in the delivery process.

The procedures for members to follow are laid out in significant detail (Clearing House Procedures Section 5: Commodity Deliveries).¹⁰

Question 2 (Principal risk management)

In so far as LCH is obligated to take or receive deliveries of physical instruments it will, as far as possible, eliminate principal risk through the use of the Delivery versus Payment (DvP) mechanism provided by the relevant SSS.

Where no DvP mechanism is available, LCH uses a free-of-payment process where LCH holds the commodity until cash is received.

Question 3 (Liquidity, storage and delivery risk management)

LCH margins all contracts through the delivery cycle and may require full contract payment in advance. LCH charges margin to cover the risk of settlement default. The processes for commodities are based around ensuring good delivery to quality standards, with recourse to arbitration processes where those standards are not met.

Assessment: Observed

Recommendation 11 – Risks in links between CCPS

CCPs that establish links either cross-border or domestically to clear trades should evaluate the potential sources of risks that can arise, and ensure that the risks are managed prudently on an ongoing basis. There should be a framework for cooperation and coordination between the relevant regulators and overseers.

Answers to key questions

Question 1 (Links in operation)

Both LCH and SA are part of the LCH.Clearnet Group. However, the two CCPs continue to operate as distinct subsidiaries.

If LCH and SA were to move towards creating a single clearing platform, LCH has indicated that a thorough analysis of all the risks (including operational, credit and liquidity) would be undertaken.

10 http://www.lch.com/Images/SECT_5_%20-%20LCP%20Deliveries%20Sept%20DDavies_tcm3-373.pdf

In March 2000, LCH and the Chicago Mercantile Exchange (CME) implemented a cross-margining agreement. This is intended to replicate the margin offsets that would have been available to clearing members of LCH and CME if certain instruments on the respective exchanges (Short Term Interest Rate contracts on CME and LIFFE) were traded on the same exchange.

The agreement is intended to leave LCH and the CME Clearing House Division no worse off in terms of financial resources available in a default situation than for internal offsets. If the defaulting member's proprietary account is in profit at one clearing house, in terms of margin provided versus losses, then this amount would be used to offset any losses facing the other clearing house. The margin offsets granted are reviewed each quarter, but either clearing house can initiate a review at any time. Importantly, if there is disagreement about the credit that should be allowable, the lower of the two suggested amounts is applied.

LCH has two further cooperation arrangements in place where both LCH and a counterpart CCP clear the same instruments traded on a common market platform.

The first is on the virt-x market, where members can elect to clear UK equity trades via SIS x-clear or via LCH.

The second is on the EDX market, which offers a combined orderbook with Sweden's OMHEX. EDX trades are cleared via LCH while OMHEX contracts are cleared through the OMHEX integrated clearing house.

Question 2 (Rules governing link)

There is currently no link between LCH and SA and no decision has been taken about the applicable legal framework if or when the link comes into being.

The cross-margining agreement between LCH and the CME is based on the laws of the State of New York.

To accommodate the co-clearing arrangement for the virt-x market, the corresponding CCP x-clear has been granted a special membership of LCH (effectively similar to the General Clearing Member class (GCM)).

Question 3 (Operational, credit and liquidity risks)

Very few operational, credit and liquidity risks arise as a result of the group structure, as LCH and SA clear separate exchanges and contracts, and are currently largely operationally independent of each other. Operational risk, in particular, may arise in the future as both organisations standardise certain IT systems, and move to a more integrated model.

The cross-margining link between LCH and the CME is intended to leave each organisation no worse off in terms of financial resources in a default situation, and a defaulting member's account that is in profit at one organisation can be used to offset losses at the other.

Since the operational commencement of co-clearing, no material interruption of the data exchange with virt-x or EDX has occurred.

LCH's default rules will apply to contracts between LCH and an LCH GCM or Individual Clearing Member (ICM) or x-clear in the event of a default by the LCH GCM, ICM or x-clear.

Question 4 (Regulation and oversight of link)

The FSA and the BoE participate in the LCH.Clearnet Group Limited regulatory college led by the Commission Bancaire (France), and a MoU governing information sharing, communication, etc., has been signed by all regulators involved. The Commission Bancaire is the consolidated prudential supervisor of the group (even though the group holding company is a UK incorporated firm) as SA is a credit institution. LCH is solo supervised by the FSA as a RCH, and the embedded payment system is overseen by the BoE.

The CME is a self-regulatory organisation, subject to oversight by the CFTC. The FSA has a general MoU in place with the CFTC to permit regulatory cooperation if necessary.

The FSA has a MoU with the Swiss Federal Banking Commission (SFBC) and the Swiss National Bank (SNB) as x-clear is a Recognised Overseas Clearing House (ROCH) and was recognised as such in August 2004.

There is also a MoU between the FSA and the Swedish Financial Supervisory Authority (FI) which covers the activities of EDX.

Assessment: Observed

Recommendation 12 – Efficiency

While maintaining safe and secure operations, CCPs should be cost-effective in meeting the requirements of participants.

Answers to key questions

Question 1 (Review of costs and pricing)

LCH has in place procedures to control its costs of operation. These include an annual budget process, in which the budget for the year ahead is reviewed by senior management and approved by the Board. Additionally, monthly

management accounts compare actual results against budget, incorporate a full year forecast, and are distributed to the Board and discussed at Board meetings. LCH also undertakes monthly meetings with department heads to review actual and forecast costs.

Recently, LCH has been implementing a group-wide project known as the 'Value Improvement Programme'. This has identified a number of opportunities for cost reduction.

No formal benchmarking takes place of costs and charges, but pressure on the prices charged by LCH comes from users. A number of price reductions have taken place recently.

Question 2 (Review of service levels and operational reliability)

Operational reliability is monitored by the operations and IT areas of the business. Reports are produced for review by the Operations Committee. Capacity levels are also reviewed and monitored and when service enhancements are proposed, the impact on capacity is assessed and analysed. Performance/capacity tests are also carried out before a new service is implemented into the live environment.

Assessment: Observed

Recommendation 13 – Governance arrangements

Governance arrangements for a CCP should be clear and transparent to fulfil public interest requirements and to support the objectives of owners and participants. In particular, they should promote the effectiveness of a CCP's risk management procedures.

Answers to key questions

Question 1 (Clarity and transparency of governance arrangements)

LCH is a wholly owned subsidiary of LCH.Clearnet Group Limited (Group), and issues of group-wide governance rest with the Group Board. These governance arrangements are clearly specified and information regarding them is publicly available in the annual report of Group.¹¹

The LCH Board meets at least quarterly throughout the year and has a formal schedule of matters reserved to it. It has full and effective oversight of the company and monitors the executive management through review of and

11 http://www.lchclearnet.com/Images/Group%20Report%2005%20WEB_tcm4-23036.pdf

discussions about information provided to it by the executive management, as well as reports from internal and external audit.

Question 2 (Separation of reporting lines for risk management)

The Risk Committee is a sub committee of the LCH Board. It is chaired by an LCH Board member, and its members are user representatives. Based on the independence of the LCH Board Risk Committee and its discretion in relation to risk management policy, LCH appears to have a clear separation between the reporting lines for its risk management and those for its other operations.

Question 3 (Skills, incentives and accountability of management and Board)

As a UK incorporated company, LCH's Board and management are accountable to its shareholders, and appear to have the appropriate skills to deliver competent counterparty risk management, for example the Risk Committee comprises user representatives with expertise in risk related matters. All directors have direct access to the advice and services of the Company Secretary, and are knowledgeable in the financial services industry.

Question 4 (Disclosure of objectives, responsibilities and delivery)

The Group clearly states and makes publicly available its ownership structure and the composition and role of the Group Board and key Group Board committees. It also publishes its high-level objectives, although the website contains limited information on delivery against these.

Assessment: Observed

Recommendation 14 – Transparency

A CCP should provide market participants with sufficient information for them to identify and evaluate accurately the risks and costs associated with using its services.

Answers to key questions

Question 1 (Disclosure of risks)

LCH publishes its rules and procedures for the various markets cleared, together with information on risk management, application costs and procedures, minimum contributions towards and interest rates on the default fund, and the transaction tariffs.

Question 2 (Accessibility of information)

The rules and procedures, etc., are published in English on the internet.

Question 3 (Review of information)

Not applicable. This assessment has not been carried out by LCH but by the FSA and the BoE. It is the first assessment and is based on information as at 30 April 2006.

Assessment: Observed

Recommendation 15 – Regulation and oversight

A CCP should be subject to transparent and effective regulation and oversight. In both a domestic and an international context, central banks and securities regulators should cooperate with each other and with other relevant authorities.

Answers to key questions

Question 1 (Ability and resources of regulator and overseer)

Regulation and oversight of LCH is carried out by the FSA and the BoE. The FSA is the main regulator of LCH as a RCH, while the BoE's oversight remit is confined to the PPS. Regulation and oversight is on a risk focused basis, ensuring that available resources are directed appropriately.

Question 2 (Clarity and transparency of objectives, roles and policies of authorities)

Regulation and oversight take place in the public domain as far as is reasonably practical and within the confines of the relevant legislation.

The rules and guidance governing the regulation of LCH by the FSA are publicly available on the FSA's website,¹² and the FSA is required by law to consult on matters of policy which could affect the regulatory framework within which LCH operates.

The BoE publishes its assessment of LCH's compliance with the Core Principles for Systemically Important Payment Systems on an annual basis in its Payment Systems Oversight Report.¹³

12 www.fsa.gov.uk

13 www.bankofengland.co.uk/publications/psor/index.htm

The respective roles and responsibilities of the BoE and the FSA are contained in a publicly available MoU which is available on each institution's website (as well as the HM Treasury website). The BoE and the FSA have jointly published this assessment.

Question 3 (CCP reporting requirements)

Reporting requirements for LCH to the FSA are contained in the FSA handbook, which is published on the internet.¹⁴

The BoE receives regular information on payment flows across the PPS, and has access to some data on the performance of PPS banks as it is the concentration bank for Sterling and Euro.

Question 4 (Cooperation between authorities)

Domestic cooperation between the FSA and the BoE in the regulation and oversight of LCH is governed by the MoU mentioned above. In practice, this cooperation works well with all material issues disclosed regularly and effectively.

International cooperation is achieved through MoUs with the relevant regulators in the overseas jurisdictions. The MoUs primarily contain provisions on information sharing between the relevant regulators.

Meetings to discuss issues of common regulatory and oversight concern are held at least every three months between the regulators and central banks of the UK, France, Belgium, the Netherlands and Portugal.

Assessment: Observed

14 <http://fsahandbook.info>

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