CLEARING

SPECIAL REPORT

FOW SUPPLEMENT | October/November 2014

THE HOUSE THAT TREVOR BUILT

The new LME Clear chief reflects on a three-year project to build Europe's newest clearing house

CONTENTS

CROSS-MARGIN CLEARING IN EUROPE FACES LONG JOURNEY

WHEN EUREX, THE CLEARING HOUSE OF DEUTSCHE BORSE GROUP, INTRODUCED IN JUNE THIS YEAR THE FIRST EUROPEAN CROSS-MARGINING SERVICE BETWEEN INTEREST RATE SWAPS AND FIXED INCOME FUTURES MANY IN THE INDUSTRY WELCOMED THE DEVELOPMENT.

Clearing members and their clients in the US already use portfolio margining across asset classes and cross margining between listed fixed income products to reduce their margining and risk management costs.

Eurex cited as benefits of its European launch higher capital efficiencies as well as more accurate netting effects for listed and between listed and over-the-counter positions.

Matthias Graulich, chief client officer at Eurex, said: "With our risk management methodology we enable users to realise significant margin savings. For some products like futures assets swaps, there can be margining efficiencies of up to 70%. This margin efficiency goes hand-in-hand with a reduction in risk treating the future and the swap as a portfolio."

Cross-margining works by factoring in correlations between cleared products - in this case interest rate swaps and fixed income futures - when calculating margin requirements, instead of determining collateral on each individual product. If the risk in each product can be offset, which is the case when futures are used to hedge a portfolio of interest rate swaps, a lower net margin amount is possible.

The Eurex Clearing Prisma launch was heralded by clients as breakthrough in June but four months on business is slow and no other firms have come to market with a similar offering.

CME Clearing Europe clears mostly foreign exchange futures and cross-margining would only make sense if they supported OTC FX contracts which is a medium-term plan. ICE Clear Europe is currently focused on credit default swaps while the LME has said cross-margining is in its product roadmap (see page 32).

The European clearing house that could benefit the most from cross-margining is LCH.Clearnet, which is majority-owned by the London Stock Exchange Group.

LCH and Eurex are looking at cross-margining from different places however. LCH is the top interest rate swaps clearer but has no futures while Eurex Clearing has a big futures book but hardly any swaps.

London-based LCH and Frankfurt-based Eurex could be readying to try to eat each other's lunch as LCH eyes Eurex's futures book and Eurex goes after LCH's over-the-counter (OTC) swaps inventory.

ICE could also come in and try to leverage its futures business to win swaps volumes from LCH but it would have to launch interest rate swap clearing first, something it is reportedly considering.

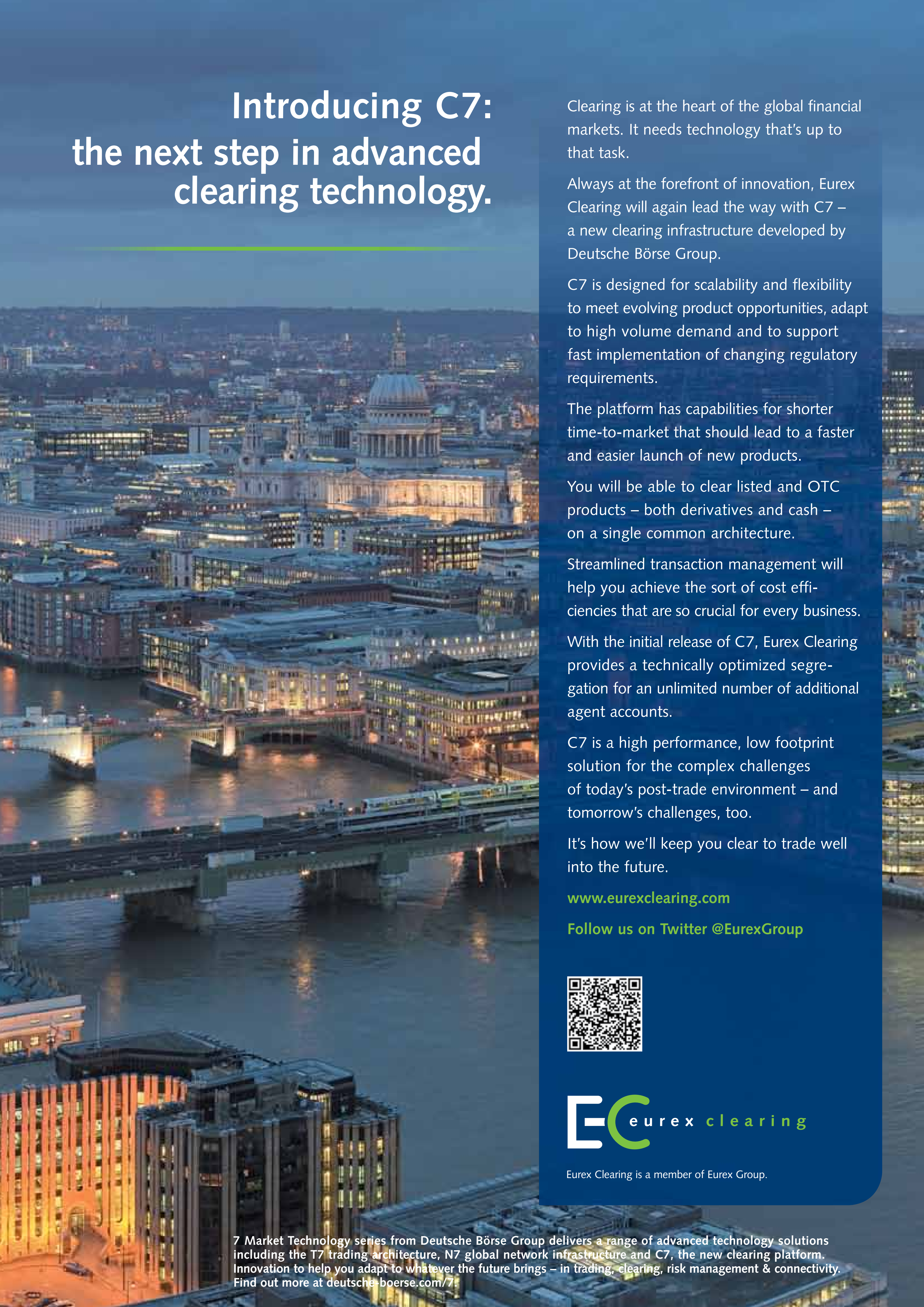
It is not certain who would have the upper hand in the event that LCH.Clearnet and ICE were to launch cross-margining however.

Speaking at the FOW Derivatives World CEE conference in October, Lee McCormack, executive director of client clearing at Nomura, said: "Cross-margining is starting to happen in the US as clients demand efficiencies. OTC interest is easier to move than futures liquidity. If I have futures, I think I am in a good position over the medium term."

GLOBAL OTC INTEREST RATE DERIVATIVES MARKET. AMOUNTS OUTSTANDING IN US DOLLARS • *Source: bis.org*

	NOTIONAL AMOUNTS OUTSTANDING				GROSS MARKETVALUES			
	H1 2012	H2 2012	H1 2013	H2 2013	H1 2012	H2 2012	H1 2013	H2 2013
Total contracts	**494,427**	**489,706**	**561,314**	**584,364**	**19,113**	**18,833**	**15,081**	**14,039**
With reporting dealers	139,1461	16,892	104,210	96,197	6,568	6,024	4,486	3,742
With other financial institutions	316,905	338,083	421,266	469,611	11,483	11,669	9,732	9,503
With non-financial customers	38,376	34,731	35,838	18,556	1,062	1,141	863	794
Up to 1 year[2]	207,236	190,672	219,237	198,302	-	-	-	-
Between 1 and 5 years[2]	170,252	180,262	206,887	234,284	-	-	-	-
Over 5 years	116,938	118,772	135,190	151,778	-	-	-	-
US dollar	164,024	148,676	169,029	173,792	7,386	5,936	4,734	4,312
Euro	179,076	187,363	227,356	241,067	7,941	9,067	7,258	6,838
Yen	60,092	54,816	55,086	52,873	1,055	911	715	696
Sterling	39,913	42,244	46,334	52,214	1,462	1,616	1,103	1,293
Swiss franc	5,494	5,357	5,583	5,777	161	149	113	121
Canadian dollar	7,380	7,507	9,333	10,372	195	166	146	139
Swedish krona	6,994	6,193	5,906	6,406	94	116	73	77
Other	31,452	37,551	42,687	41,862	819	872	938	563
Memo: Exchange-traded contracts[3]	*55,581*	*48,546*	*62,178*	*57,007*	-	-	-	-

[1] Based on the data reported by 11 countries up to H1 2011. Includes data reported by Australia and Spain from H2 2011 onwards. Data on total notional amounts outstanding, gross market value and gross credit exposure are shown on a net basis, ie transactions between reporting dealers are counted only once.
[2] Residual maturity.
[2] Sources: FOW TRADEdata; Futures Industry Association; various futures and options exchanges.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MATTHIAS GRAULICH, EUREX

> "With our risk management methodology we enable users to realise significant margin savings"
>
> **Matthias Graulich, Eurex**

Silas Findley, managing director and EMEA head of futures, clearing and collateral at Citigroup, is not sure however, adding: "There is a massive advantage of being the incumbent but does that mean liquidity will stay where it is? No. I think it will be tough to lever liquidity away from London but there are a lot of factors that make it difficult to make a call on that," he added.

The slow uptake of the new European service is linked to a number of factors however.

One is this summer's delay to the regulatory mandate that would have required OTC interest rate swaps to be cleared. According to the latest Emir standards, financial counterparties have until the third quarter of 2016 to start clearing these types of assets though more detail is expected.

Traders argue that firms are currently more focused on implementing mandatory compliance ahead of the 2016 deadline rather than thinking about driving efficiencies off the back of it. Cross-margining is a secondary consideration that clients will come to later, banks have suggested.

"It is important to remember that the front-loading requirements are being applied to large buy side clients classed as Category 2 [financial counterparties] on the Esma mandate, which means it will be effective probably from January or February 2015, pending the final wording of the RTS," said Graulich.

Nick Chaudhry, head of OTC clearing at Commerzbank, one of three dealers working with Eurex Clearing Prisma, said: "Under the obligations determined in Emir, clients are looking to put in place these clearing services. Cross-margining brings efficiency. But the phase-in period … has led clients to rethink how long they have to implement the services to clear products. What you'll find is that as you approach year-end, clients are starting to think about the frontloading period."

Despite the deadline for compliance with Esma having been pushed back, Eurex and its partners will continue offering the service in the hope that firms start using it voluntarily to take advantage of the efficiencies it offers and to get ready for the mandatory clearing deadline by front-loading historic trades.

Front-loading is a regulatory requirement that requires trading firms to load into a clearing house historic trades before the mandatory clearing deadline takes effect in 2016.

"It is important to remember that the front-loading requirements are being applied to large buy side clients classed as Category 2 [financial counterparties] on the Esma mandate, which means it will be effective probably from January or February 2015, pending the final wording of the RTS," said Graulich.

Three banks, Commerzbank, Citigroup and Morgan Stanley, have been offering Eurex's cross-margining services to their clients since June.

They are adamant the client demand is there but say the relatively small number of brokers supporting the initiative is partly holding it back.

"Cross-margining is something that will drive liquidity if the sell-side go there," said Findley.

Though cross-margining is relatively simple in principle, in practice it can require dealers and clients to make significant structural changes to the clearing apparatus they have in place. Clients' portfolios may need to be rearranged to achieve higher efficiencies, for example.

"I think a lot of large financial counterparts are targeting to be ready before the end of the year and start clearing on a voluntary basis driven by the frontloading requirement by Q1 2015. I do not expect that large buy-side firms will wait until the effectiveness of the clearing obligation before actively clearing," said Graulich.

Graulich insists there are plenty of early adopters putting systems in place "before year end".

"Currently, we are in the middle of on-boarding clients onto EurexOTC Clear," he said. "We have already admitted 35 clearing members and approximately 45

2013 VERSUS 2012 • *Source: bis.org*

FUTURES	2013	2012	CHANGE	OPTIONS	2013	2012	CHANGE
CONF Future	141,272	150,484	-6.12%	Euro-Bund	35,220,103	39,924,387	-12%
Euro-Buxl®	3,987,038	2,465,158	61.74%	Euro-Bobl	14,790,234	11,378,443	30%
Euro-Bund	190,299,482	184,338,704	3.23%	Euro-Schatz	16,343,935	20,570	-21%
Euro-Bobl	129,299,482	107,645,238	20.33%	Euro-OAT	18,605		
Euro-Schatz	95,505,726	93,840,656	1.77%				
Euro-BTP	9,285,418	4,870,645	90.64%				
Euro-BTS	1,961,926	814,408	140.90%				
Euro-OAT	11,734,475	4,342,912	170.20%				
Euro-OAM	350,965						
Total futures	**442,797,279**	**398,468,205**	**11.12%**	**Total options**	**66,372**	**877**	**-7.65%**
Total fixed income	**509,170,156**	**470,341,981**	**8.26%**				

registered clients. A significant number of further clearing members are in the pipeline to be admitted until the end of year. We also have more than 100 buy side clients, which are in the process of on."

It is still too early to call whether Eurex have made a smart move by going early and will hoover up business because of that or if the German clearing house faces months or years of negligible activity.

More certain is that cross-margining will take-off over time, which will suck in the other exchange groups.

CME has been successfully cross-margining interest rate swaps and fixed income futures in the US since May 2012, owing in part to the regulatory framework already in place that requires the clearing for these products.

The Merc could also look at cross-margining as it expands its product coverage in its exchange CME Europe, something it has committed to do over the next few years.

The LME has said it is looking at cross-margining, which will see it trying to find margin efficiencies between related listed and OTC metals products.

ICE has said it currently has no plans to launch European cross-margining but this could change if it launches interest rate swap clearing through ICE Clear Europe.

The US energy exchange group's London-based Liffe is the second largest European futures market behind Eurex, so the launch of interest rate swap clearing opens the door for cross-margining between those cleared products and Liffe's listed futures. This could be a powerful proposition if ICE gets the clearing and cross-margining parts right.

The real action (in the short term at least) will start when LCH.Clearnet accepts the inevitable and introduces its version of cross-margin netting to complement its various and successful compression services.

A big winner if LCH were to do that would be Nasdaq OMX's NLX which launched last year promising the advantages of cross-margining between related fixed income futures products.

"Following the introduction of clearing for NLX, we are exploring the possibility of extending portfolio margining across a range of interest rate products cleared at LCH.Clearnet, subject to appropriate regulatory obligations and in line with our high standards of risk management. This remains a strategic objective and has the potential to be an efficient model for all users," said an LCH.Clearnet spokesperson.

Europe's largest clearing houses are playing their cards close to their chests at the moment but there will be many twists and turns in this story before it is over. Watch this space.

> "There is a massive advantage of being the incumbent but does that mean liquidity will stay where it is? No. I think it will be tough to lever liquidity away from London but there are a lot of factors that make it difficult to make a call on that"
>
> **Silas Findley, Citigroup**

VOLUME OF FIXED INCOME FUTURES TRADED BY EUREX IN 2013 • *Source: cmegroup.com*

OTC IRS MARKET DATA (AS OF CLEARING DATE: OCT 17, 2014)

Currency	Volume	Open Interest	USD Equivalent Volume	USD Equivalent Open Interest
USD Total	$ 107,526,812,880	$ 13,742,032,415,882	$ 107,526,812,880	$ 13,742,032,415,882
EUR Total	e30,668,445,000	e3,175,990,664,915	$ 39,277,077,512	$ 4,067,491,244,557
GBP Total	£ 8,400,746,000	£ 1,556,056,402,177	$ 13,514,280,090	$ 2,503,227,934,182
CAD Total	$ 1,536,000,000	$ 307,909,879,360	$ 1,364,848,054	$ 273,600,390,404
JPY Total	¥ 69,210,000,000	¥ 56,159,373,915,434	$ 650,959,364	$ 528,210,815,562
AUD Total	A$ 1,953,350,000	A$ 155,961,680,450	$ 1,710,353,260	$ 136,560,047,402
CHF Total	CHF 8,000,000	CHF 13,357,732,000	$ 8,488,964	$ 14,174,163,837
CZK Total	Kc 0	Kc250,000,000	$ 0	$ 11,651,209
DKK Total	DKK 0	DKK 40,600,000	$ 0	$ 6,984,466
HKD Total	HKD 0	HKD 1,001,000,000	$ 0	$ 129,023,111
HUF Total	Ft 0	Ft 74,800,000,000	$ 0	$ 312,213,038
MXN Total	MXN 6,188,900,000	MXN 361,868,997,000	$ 456,812,814	$ 26,710,141,497
NOK Total	NOK 65,000,000	NOK 100,257,205,000	$ 9,935,040	$ 15,323,990,065
NZD Total	NZD 17,500,000	NZD 21,294,454,760	$ 13,917,750	$ 16,935,479,871
PLN Total	zł 0	zł 5,960,620,000	$ 0	$ 1,806,795,999
SEK Total	SEK 55,000,000	SEK 166,303,679,500	$ 7,698,229	$ 23,277,161,383
SGD Total	There is no market data at this time.			
ZAR Total	R 0	R 5,544,700,000	$ 0	$ 499,167,259
Total in USD			**$ 164,541,183,957**	**$ 21,350,309,619,722**

The house that Trevor built

A month after going live, Trevor Spanner, the chief executive of LME Clear, reflects on a three-year job well done, writes Luke Jeffs.

The LME's new clearing system went live on September 22 when its members' positions moved over from former clearing provider LCH.Clearnet, making LME Clear the first new major piece of European market infrastructure since CME Group launched its clearing house in 2011.

"All 43 members transferred over on day one. It was a big bang approach so we transferred over that weekend some 2.2 million positions from LCH to ourselves. There was also an $8bn collateral transfer from LCH. It had to be a big bang because otherwise client positions would have been split," Trevor Spanner, LME Clear chief executive, told FOW in mid-October.

Spanner said he wasn't concerned ahead of the migration. He has worked on a clearing house previously – EuroCCP, a cash equities clearer owned by the DTCC – and the LME Clear launch had been meticulously tested.

"We had done it ourselves, with LCH and members at least three times so on the day we knew what was going to

LME CLEAR IN NUMBERS:

-8	AVERAGE JANUARY TEMPERATURE IN UMEA, SWEDEN
6	NO. OF CHECKPOINTS IN THE WEEKEND BEFORE MIGRATION
43	NO. OF CLIENTS THAT MOVED ON SEPTEMBER 22
500	NO. OF TIMES A SECOND LME CLEAR CAN MAKE MARGIN CALLS
2.2M	NO. OF POSITIONS THAT MOVED ON SEPTEMBER 22
10BN	VALUE IN DOLLARS OF COLLATERAL THAT MOVED

happen and when. There were six formal checkpoints over the weekend, and the Bank of England and the boards of LME, LME Clear and LCH were being kept updated as we went."

The LME chief said LCH collected the funds from the Friday night call and LME Clear novated the positions at 9.30 so they were on risk from 9.30, at which point LME was responsible for an additional margin calls.

Spanner makes it sound simple but that act was the culmination of a three year project that began in November 2011 when LME, which was at that time independent from Hong Kong Exchanges and Clearing, hired Spanner.

THREE YEAR PROJECT

"LME had been looking at clearing for a long while, as far back as 2010. They were getting their minds in the right space, they just needed pushing over the line. They hired me to do the feasibility study and make a recommendation on moving ahead. I did that in December 2011 and the board made the decision to go, by which time the HKEx bid had been announced."

Spanner believes the LME pledge to build its own clearing house and start clearing metals trades on LME made the British exchange more appealing to suitors.

"Once people got to know the exchange was serious about clearing that made it more attractive, that's what really drove a lot of the commercials behind the bid," he said.

HKEx was not the only suitor however. A rival bid from US energy giant the IntercontinentalExchange cast a shadow over Spanner's clearing project in early 2012.

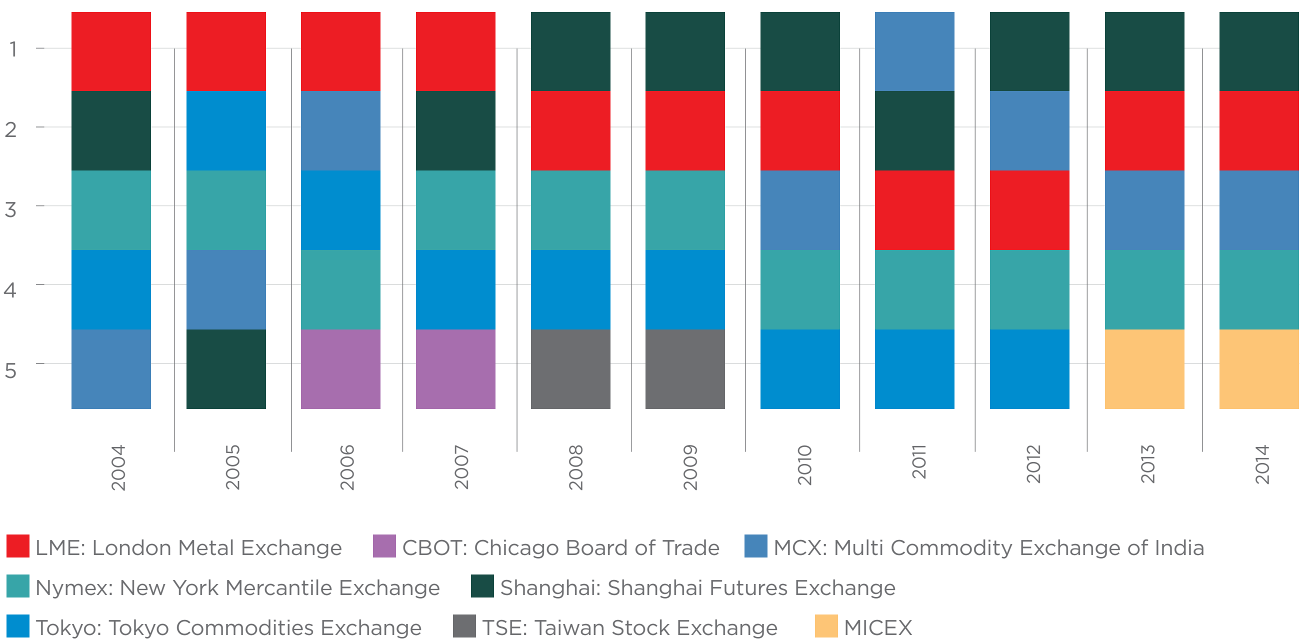
"When we started running the programme we weren't quite sure how it was going to turn out. If Hong Kong bought us they wanted us to build a clearing house but if ICE had won, they've already got one so they'd be closing everything down so it was quite tricky period to manage," Spanner said.

"We couldn't hire any permanent staff because no-one would join because they didn't know what the outcome would be. So we hired a load of really experienced contractors," he added.

The situation was finally resolved in

> "Once people got to know the exchange was serious about clearing that made it more attractive, that's what really drove the commercials behind the bid"
>
> **Trevor Spanner, LME**

TOP 5 METALS EXCHANGES SINCE 2014 • Source: FOW TradeData



GARRY JONES, LME

> We wanted to be code complete by the end of the year and we took final delivery in January so all-in it the build took about twelve months
>
> **Iain Greig, LME**

June 2012 when HKEx's $2.2bn bid saw off Ice and effectively gave Spanner the green light to go ahead with LME Clear.

Regulation posed another challenge in early 2012 however.

"Another challenge was the changing regulatory picture. European Markets Infrastructure Regulation level one regulations had been set but the detailed level two standards which drive your functional requirements were still being defined over the early part of 2012," Spanner said.

The chief executive said the original plan was to go live with LME Clear in early 2014 but slow progress by European regulators also cast doubt over that target.

Iain Greig, LME Clear's chief technology officer who joined in July last year after stints at Enron, Accenture and BP, takes up the story.

"The general direction and requirement was understood but the detail was still being elaborated. We took an agile approach with Cinnober, which meant we refined the requirements as we went along with the developer," Greig told FOW.

Cinnober is based in Sweden so Greig said he and his team spent months working on-site with their developers in the Northern Swedish town of Umea, not far from the Arctic circle.

"What you get is real momentum and every month or so you get a new delivery which you can then expose to the user community and the members.

"We wanted to be code complete by the end of the year and we took final delivery in January so all-in it the build took about twelve months," Greig said.

Testing with client early adopters began immediately in February this year but the firm was already feeling confident because it had been testing the system itself as it went and had conducted successful trial runs with the LME exchange, run by chief executive Garry Jones (pictured).

"We'd been testing with the exchange from October through to February so we were pretty confident it was working well and when we took it to members we were prescriptive about the testing they needed to do," said Greig.

Spanner continued: "We worked closely with clients. When we asked them what they disliked about their current system, there were two types of answers. There was the "what", that is the functional things about the system but they also raised the "how", wanting more on the client service, relationship management side."

The LME Clear chief executive hired in 2012 Bernie Kennedy, formerly of Goldman Sachs, Turquoise (now part of the London Stock Exchange Group) and LCH.Clearnet who then brought in three relationship managers to work with clients through testing and implementation.

LME's 43 clients represent a range of firms, from the largest global investment banks to local, specialist brokers.

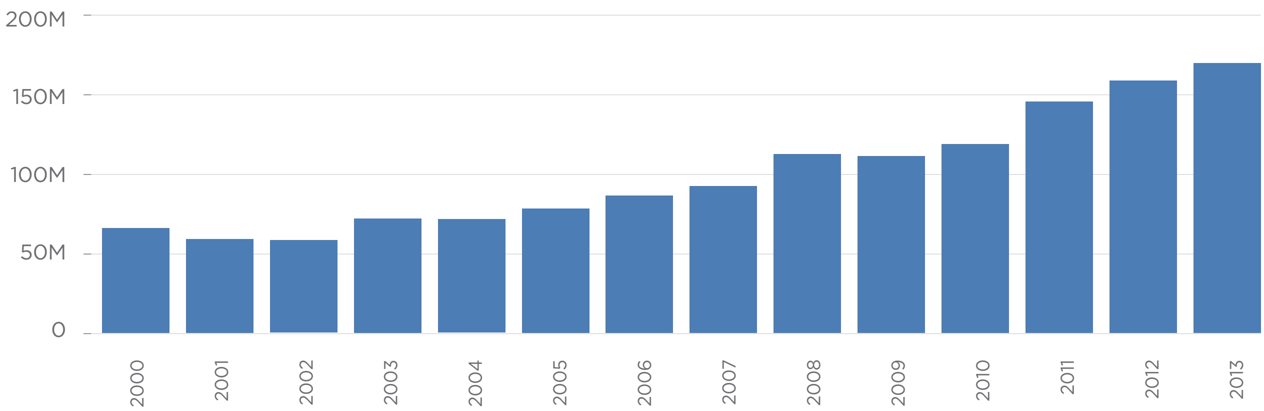
"You've got large banks like Goldman Sachs at one end with big teams on this and at the other end there are the small metals brokers with small back offices and not a lot of capacity for change. They need more hand-holding," said Spanner.

The technology challenges did not end there, however. LME Clear is a real-time system that can make intra-day calls for extra margin which is a very different prospect to older systems that make a single margin call each day.

Greig said: "Our clearing platform has similar DNA to the trading platform and the real-time nature of the clearing platform reflects this."

LME Clear represents significant functional changes, according to Spanner. "The

LME ANNUAL PERFORMANCE 2000-2013 • Source: FOW TradeData



technology we have on board captures trades on a real time basis, looks how much collateral is there and calls members for extra if there's not enough. It can do that 500 times a second.

"That's a change for them, in the past there was intra-day risk which would be stored up for the 2 o'clock call but now we can make margin calls intra-day if we need more collateral. For some of the market that's been a behavioural change," said Spanner.

Technology was only one part of the challenge, however.

FACING THE COLLEGE

As a new clearing house, LME Clear had to be signed off by the European Commission at a time that all European clearing houses were having to re-apply for their licenses to operate under the new European Markets Infrastructure Regulation (Emir).

Spanner and his team initially worked with the Bank of England on its filing.

"It was a long process of working with the bank on our application. It was 300-400 pages, pretty chunky stuff. We worked with the bank to demonstrate compliance with Emir, describe what we do, how we do it, our governance, everything from soup to nuts basically," he said.

"Under Emir, "deemed complete" means your application is good enough to be looked at. It was a long process, probably six, seven months working with the bank before we knew that if we gave them the application, they were going to deem it complete," Spanner added

A "complete" application goes before a college made up of the regulators of the three European markets that are home to the applicant's largest clients, so the British, German and French regulators in LME Clear's case.

"Once it is deemed complete, it sets a timeline of six months by which time a decision has to be made on your authorisation. We sent our application to the college and had something like 300 questions come back, which is not unusual," said Spanner.

"Ultimately, once we were authorised by the college, the bank had to do a couple of things and we were authorised. Literally, it took six months."

The fact all the other clearing houses were also applying for re-authorisation did not ultimately hold up LME Clear's approval however.

"There were other central counterparties already up and running that had to submit their applications at the end of 2012 so priority was obviously given to those CCPs. We always expected to be at the back of the queue," said Spanner.

The six month deadline for the authorisation under Emir suggested a LME Clear launch date of September.

"Through the summer the big push was getting the members and the markets ready, getting them on-boarded, doing the testing and getting the authorisation done and that all came together in August, September," said Spanner.

"We couldn't be public about the dates but because of the six month timeline we knew we'd definitely be done by September 22," the chief executive added.

Spanner said the original go-live target of the first quarter this year was impossible in retrospect because the first clearing house to secure Emir approval (Nasdaq OMX) did not do so until the end of March this year.

But this delay worked out well for LME Clear, he added.

"We'd originally indicated a start date of Quarter 1 2014. However, looking at the regulatory time frame, it just made sense to agree a date of September, which

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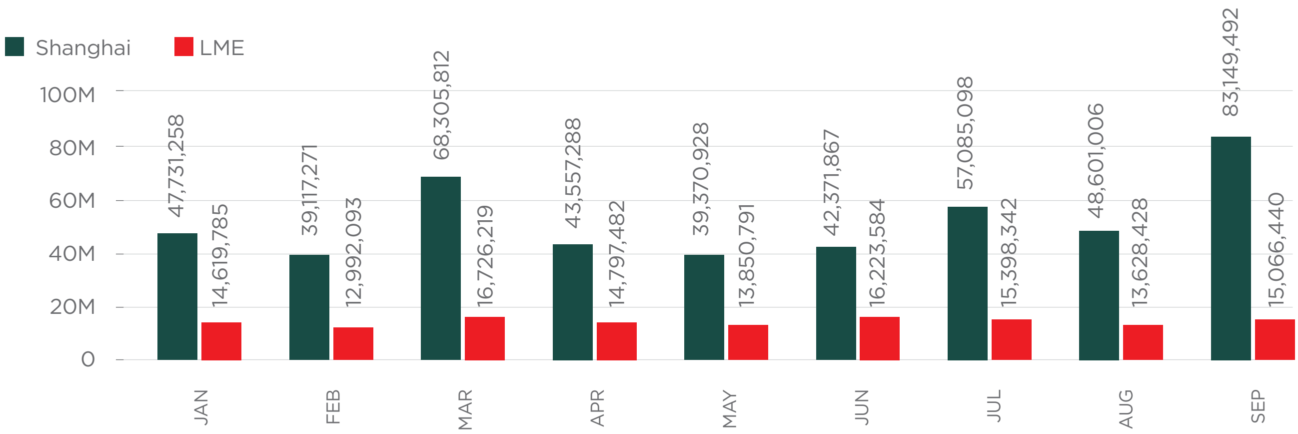
> **Trevor Spanner, LME**

LME VS SHANGHA1 MONTHLY DATA 2014 • Source: FOW TradeData



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> **Trevor Spanner, LME**

allowed LCH, Clearnet and the wider market to get their Emir changes in and then we came afterwards. In the event, this was absolutely the right decision, as the first CCP to be Emir authorised did not happen until March 2014."

WHAT NEXT?

Spanner and his team are understandably keen to let the system and clients bed down over the coming weeks but he does have plans.

"By Christmas we're lining up the acceptance of renminbi as cash collateral, which is generating interest given our Asian focus.

"For next year, we've got a range of things around expanding the use of the collateral base, the extension of tri-party repo facilities in Clearstream and the use of warrants as collateral, although there are legal considerations to work through," said Spanner.

"We're also going to look at expanding our OTC offering, which could be a Quarter 3 release. There are other things members are interested in, like compression services. There's a list of things and we'll have to do the usual juggling act of members, the exchange and ourselves. It's just a question of fitting it in," he added.

LME Clear has committed to two technology upgrades each year, at the end of the first and third quarters.

"Some of our work will be on behalf of the exchange, if they want to launch a new product for example. And there are a number of bits of functionality that we didn't get into the first phase so they're lined up for the first quarter. We're using the third quarter window for anything we want to do on a bigger scale," said Spanner.

LONGER TERM

LME Clear is wholly-owned by HKEx but it is a separate legal entity to LME, the exchange which it clears. This is a legal requirement but this independence is also important if LME Clear were to look to work with other exchanges outside of the HKEx Group.

"Working with other exchanges is not an immediate priority but a longer term ambition. We are having background conversations and if a real winner comes off, we'll do it now. But our immediate priorities are things like renminbi, collateral services and focusing on the LME and Hong Kong about the products they want to develop," said the LME Clear chief.

"We're looking to expand our commodities franchise in Asia. We are looking at some of the more established commodities already done by some of the other exchanges and we're doing that hand-in-hand with the exchange, Garry and his team. You would need a joint exchange/clearing house proposition to do that successfully," said Spanner.

TOP 10 METALS EXCHANGES YTD 2014 • *Source: FOW TradeData*

EXCHANGE	VOLUME	OPEN INT	YTD VOLUME
SHFE	83,149,492	2,896,066	469,290,020
LME	15,066,440	2,338,541	133,303,164
DCE	11,056,720	717,978	60,703,216
MCX	7,391,550	318,618	69,876,316
Comex	6,268,923	2,518,081	57,795,419

TOP 10 METALS CONTRACTS YTD 2014 • *Source: FOW TradeData*

CONTRACT	EXCHANGE	VOLUME	AVG VOLUME	OPEN INT	%OI OF VOL	YTD VOLUME	%YTD V LYTD VOL
Steel Rebar Future	SHFE	55,232,698	2,630,128	1,790,840	3	229,956,316	-7
Iron Ore Future	DCE	11,056,720	526,510	717,978	6	60,703,216	N/A
Silver Future	SHFE	9,155,665	435,984	325,469	4	130,121,654	20
Zinc Future	SHFE	8,034,626	382,601	164,439	2	28,031,176	184
Copper Cathode Future	SHFE	6,360,531	302,882	292,626	5	52,526,602	-1
Primary High Grade Aluminium Future	LME	5,534,506	251,568	808,206	15	49,034,431	2
Copper Grade A Future	LME	3,356,975	152,589	302,577	9	28,722,630	-7
Gold Future	Comex	3,205,752	152,654	381,370	12	28,830,696	-23
Special High Grade Zinc Future	LME	2,599,748	118,170	297,067	11	20,482,275	-7
Aluminum Future	SHFE	2,532,781	120,608	190,499	8	10,615,760	303

Comex: New York Mercantile Exchange - Comex Division • DCE: Dalian Commodity Exchange • LME: London Metal Exchange
MCX: Multi Commodity Exchange of India Ltd • SHFE: Shanghai Futures Exchange

CLIENT PROTECTION MODELS: A PLETHORA OF CHOICE

CLEARING HOUSES HAVE RESPONDED TO REGULATORY DEMANDS FOR BETTER DEFINED CLIENT PROTECTION MECHANISMS BUT THERE IS LITTLE CONSISTENCY OF APPROACH, WRITES WILLIAM MITTING.

Protection of client assets is a central pillar of the reform of the over-the-counter derivatives market in Europe and the US. But while the Dodd-Frank Act in the US mandates one fund segregation model, European regulators mandated two broad concepts, which in turn have been spun into a variety of different models by EU-based clearinghouses.

The European Markets Infrastructure Regulation requires that clearing members and central counterparties (CCPs) in the EU offer clients a choice between omnibus and individually segregated accounts in which to register collateral (clearing members must also offer the same for client positions).

Omnibus accounts are based on the traditional futures model where the positions and collateral of multiple clients are held in a single account. This provides netting opportunities in many cases and as such brings down the collateral requirements for individual clients.

As a result of the comingling of positions and margin, clients are exposed to losses associated with other clients or the default of their clearing member.

Under Emir, all omnibus accounts are segregated from the clearing member's house account and from other omnibus accounts run by the clearing member but the risk within each account is to a large extent mutualised.

Individually segregated accounts offer more protection to individual clients. These are accounts in which the positions and collateral of the client are booked in an account registered exclusively to that client.

This means that the client is not exposed to risk emanating from other client positions. It also means it is more likely to be able to port its positions and collateral in the event of the default of its clearing member (more on this later).

DIFFERING MODELS

While the distinction between individually segregated and omnibus accounts is clear, CCPs in Europe are offering a number of different options based broadly around the two main classifications. Indirect Pledge Accounts, Asset Omni Accounts and the concisely named Individually Segregated Margin-flow Co-mingled Accounts are just three of the 24 different accounts currently offered by Europe's six largest derivatives clearinghouses (see box-out).

If a segregation model does not separate both the positions and assets of a specific client, it is by definition omnibus. However, omnibus can mean omnibus in respect of collateral or client positions. The LSOC model in the US and the ValueSeg construct at LCH.Clearnet are examples of accounts that involve collateral mutualisation but not position mutualisation.

Within the omnibus account model, some CCPs are offering clients a choice between gross and net accounts. Net accounts are ones in which the CCP nets off the positions of all the clients in the account to establish the collateral required against that account.

While this will reduce the collateral posted to the CCP to manage those positions, clearing members will usually still margin their clients on a gross basis and retain the additional collateral.

Gross omnibus accounts calculate the required collateral on a gross basis and all collateral is held at the CCP for those positions meaning there is no netting of exposures across the clients in the omnibus account.

Other CCPs offer greater optionality for omnibus accounts. For example, Nasdaq OMX, which offers six segregation models to clients, allows firms to establish a Single Client Account, which is a sub-account within an omnibus account. Under the SCA, the CCP records all the transactions attributable to that client. Eurex offers an omnibus account which is CASS compliant. This is offered to UK domiciled clients in addition to its basic Elementary Clearing Model omnibus account.

CCPs are also offering enhancements on the basic Individually Segregated model. LCH.Clearnet SwapClear is offering (on both omnibus and individually segregated accounts) the ability to register specific assets to be returned in the event of a default. In addition it is currently developing a "CustodialSeg" account in which assets remain with a custodian, eliminating the transit risk associated with other models.

Nasdaq OMX offers Direct Pledge Accounts in which the client has a direct legal relationship with Nasdaq OMX. CME offers what it terms a Fully Segregated Account in which the account is also protected against the default of the CCP.

PORTABILITY

A clients' choice of segregation model will have the biggest impact on how it is treated in the event of the default of its clearing member. Emir has established processes under which positions and collateral can be ported to another clearing member in the event of the default of a clearing member.

Given this porting will occur during a time of immense market stress, it is unlikely that all clients will be able to port their positions and collateral within the 24 hour time frame proposed by EU regulators.

Omnibus accounts will be the hardest to port. Under most omnibus models, the accounts would have to be ported in their entirety meaning that all clients would have to agree on the clearing member to

> "We are not seeing a huge take-up of ISAs. Many large asset managers are happy with the gross omnibus account, which is similar to what they have in the US under the LSOC model"
>
> **Silas Findley, Citigroup**

whom the positions would be ported and the clearing member would have to agree to take on all the clients.

In cases of net omnibus accounts, the collateral held by the clearing member for the positions of the clients in the account will likely be tied up in the legal procedures resulting from their default meaning that the new clearing member will call additional margin against the positions.

Individually segregated models make that decision far simpler as there will be just one client involved in the process. In addition, in the event that an agreement to port has not been reached and the CCP liquidates the positions most individually segregated models mandate that any excess monies resulting from the liquidation are returned to the client rather than the clearing member.

However, provisions within Emir that stipulate a client can pre-agree with a clearing member to port a portfolio are wishful thinking. No Futures Commission Merchant is likely to agree potentially years in advance to accept a client's positions.

WHAT'S RIGHT FOR YOU?

The level of protection required will depend on a whole range of factors. Some pension funds, for example, will build complex portfolios of bonds with each specific asset chosen for its individual characterist-

CLIENT SEGREGATION ACCOUNTS • *Source: FOW TradeData*

	Omnibus or segregated	IM calculations by client/clients
Nasdaq		
Omnibus account	Omnibus	Netted across account
Single Client Account	Omnibus	Netted across account; gross against omnibus
Individual Client Segregated Account	Individually segregated	Gross
Indirect Pledge Account	Omnibus	Gross
Direct Pledge Account	Individually segregated	Gross
Clearing Client's Clearing Account	Individually segregated	Gross
Eurex Clearing		
Individual Clearing Model	Individually segregated	Gross
Multiple Omnibus Segregated Account (with optional UK CASS protection)	Omnibus between known clients	Netted for undisclosed clients /gross for disclosed clients
Standard Omnibus Segregated Account	Omnibus	Netted for undisclosed clients /gross for disclosed clients
LCH.Clearnet		
Individually Segregated Account	Individually segregated	Gross
Omnibus Segregated Account - Gross margin	Omnibus	Gross
Omnibus Segregated Account - Net margin	Omnibus	Netted across all positions in the account
SwapClear		
Asset Omni	Omnibus	Netted against positions in account
Asset Seg	Individually segregated	Gross
Value Omni	Omnibus	Netted against positions in account
Value Seg	Individually segregated	Gross
Custodial Seg	Individually segregated	Cross
ICE Clear Europe		
Customer Omnibus Accounts (Net margin)	Omnibus	Netted across all positions in the account
Customer Omnibus Accounts (Gross margin)	Omnibus	Gross
Individual Segregation through Sponsored Principal Account	Individually segregated	Gross
Individaully Segregated Margin-flow Co-mingled Account	Individually segregated	Gross
CME Europe		
Fully Segregated Account	Individually segregated	Gross
Omnibus Segregated Account	Omnibus	Gross
Individually Segregated Account	Individually segregated	Gross

ics. Such funds will be keen to ensure that they continue holding the particular bonds that they have invested in.

Meanwhile a hedge fund that follows a broad strategy and is seeking a wider exposure from its assets on a shorter time-frame may well be happy with the return of equivalent assets.

"While the ETD market participants are generally comfortable with the net omnibus basis, OTC clients are generally more comfortable with the gross accounts," says Silas Findley, head of EMEA OTC clearing at Citigroup.

"We are not seeing a huge take-up of ISAs. Many large asset managers are happy with the gross omnibus account, which is similar to what they have in the US under the LSOC model."

There is tension currently over the amount that clients should be paying in initial margin against the member contributions to the default funds. Clients want to minimise the amount they are paying in IM but the trade-off is that clearing members will be less flexible when it comes to porting portfolios or taking on new clients.

The FCM taking a liquidity hit on the guarantee fund when it comes to bringing in a new client will be a problem. Clients are therefore ultimately better off taking on more of the IM to ensure a smoother market operation in the long-term.

Collateral used to cover other clients' losses	Default contribution	Portability
Yes within omnibus account	Clearing member	Basic
Yes within connected omnibus account	Clearing member	Basic
No	Clearing member	Comprehensive
Yes but only other Indirect Pledging Customers of member	Clearing member	Basic
No	Client	Advanced
No	Client	Advanced
No	Clearing member	State-of-the-art
Only with known clients	Clearing member	Advanced
Yes	Clearing member	Basic
No	Clearing member	Advanced
Yes	Clearing member	Basic
Yes	Clearing member	Basic
Yes	Clearing member	Basic
No	Clearing member	Advanced
Yes	Clearing member	Basic
No	Clearing member	Advanced
No	Clearing member	State-of-the-art
Yes	Clearing member	Basic
Yes	Clearing member	Basic
No	Clearing member	State-of-the-art
No		Comprehensive
No - account is protected against CCP default as well	Clearing member	State-of-the-art
Yes	Clearing member	Comprehensive
No	Clearing member	Advanced

MARKET INNOVATION: A NEW BREED EMERGES

ONLY A FEW YEARS AGO CLEARING WAS SEEN AS A BACK OFFICE BURDEN THAT ADDED UNWANTED COST THAT DRAGGED ON THE PROFITABILITY OF TRADERS AND BROKERS ALIKE. LEHMAN BROTHERS CHANGED ALL THAT.

BY LUKE JEFFS

> "Clearing then has become a big deal and trading firms are desperately seeking new ways to mitigate the impact of these new rules and drive efficiencies around clearing"

Markets that used clearing houses, including futures and options, moved in the hours after Lehman's 2008 collapse to their pre-defined default processes and firms holding these assets knew their exact positions in days if not hours.

The far-larger swaps markets, which were not required to use clearing at that time, had a problem however, so much so that some six years later many of these positions are still in dispute and the court cases roll on.

They could be accused of shutting the door after the horse had bolted but the world's top regulators responded by announcing in 2009 tough measures to force the more liberal over-the-counter markets to start using clearing houses.

Five years later, we are in implementation phase. Europe is gearing up to mandate its rules in 2016 and bring itself into line with the US which forced its rules through last year.

Asia's key markets are also working on their OTC clearing mandates, with differing targets for implementation.

Clearing then has become a big deal and trading firms are desperately seeking new ways to mitigate the impact of these new rules and drive efficiencies around clearing.

FOW looks at four new services aiming do just that.

LCH.CLEARNET'S BLENDED RATE COMPRESSION:

LCH.Clearnet has been a pioneer in compression services that write-off swaps sitting on a firm's balance sheet and therefore reduce its commitments under the Basle III capital requirements.

Blended compression, launched by LCH's SwapClear unit in mid-September, takes compression one step further however, allowing firms to net trades with different interest rates but the same remaining cashflow dates.

The service won immediate plaudits from members. Michelle Neal, global head of listed derivatives at Deutsche, said: "Blended rate compression provides members with the flexibility to perform significant amounts of compression on their cleared portfolio at LCH.Clearnet, and it is a welcome development for the industry."

Steven Mahoney, managing director of Credit Suisse, said: "Blended rate compression is an all-round win. It reduces the size of the client portfolios therefore allowing the economic risk to be more closely aligned with the bank's resulting leverage ratio calculation."

LCH's rationale is that most dealers have a lot of swaps with the same remaining cashflow dates so they have built a proprietary algorithm that allows firms to effectively replace a number of swaps with a single swap based on the net exposure across the range of eligible swaps.

The clearing house, which is majority-owned by the London Stock Exchange Group, said blended rate compression can reduce the value of swaps on a bank's balance sheet by up to 83% which represents a huge savings on capital charges.

A month after launch, the new service is also delivering, according to Cameron Goh, head of clearing solutions at LCH. Clearnet's SwapClear.

"We executed several blended rate compression cycles in September. In that month alone we compressed 56,000 trades worth a combined notional of $4.4tn across seven currencies. So far we have 8 sell side firms along with a number of buy side firms signed up to use the service," he told FOW

Goh said it's also a simple process. There are two blended compression cycles each week, one in London and one in New

> Blended rate compression provides members with the flexibility to perform significant amounts of compression on their cleared portfolio at LCH. Clearnet, and it is a welcome development for the industry
>
> **Michelle Neal, Deutsche**


MICHELLE NEAL, DEUTSCHE

York.

LCH has provided its clients with simulation tools so they can see what swaps are eligible for compression before the compression run. Clients then simply choose which swaps they want to run through compression, inform LCH of their decision and the compression goes ahead before LCH updates the clients on their new positions, which is then fed back into the member's internal systems.

LCH believes compression has replaced notional outstanding as the benchmark for clearing house performance.

"For banks resource management is top priority under the new capital requirements, the race is on to compress their balance sheets by as much as possible," said Goh.

NETOTC:

NetOTC is a new firm for the new regulatory paradigm and does not, therefore, fit with conventional thinking over the functional roles of established clearing firms.

"Our proposition is a simple one: to deliver transparency and the benefits of clearing to non-standardised OTC derivatives," Neeraj Sharma, group chief executive and co-founder of NetOTC, told FOW.

When the G20 agreed in 2009 to force OTC products to clear, they accepted the more esoteric, bespoke end of the OTC market should be exempt but only on the understanding that firms are required to put up additional margin against these non-standardised products.

Sharma said: "The regulators reacted to the financial crisis by requiring increased reporting and clearing but also the introduction of bi-lateral margin for non-cleared OTC products."

Some of the rules on non-standardised margin are only now taking shape.

The US Office of the Comptroller of Companies, the Federal Reserve and other Federal agencies opened in October a consultation to "establish minimum margin requirements for registered swap dealers, major swap participants, security-based swap dealers, and major security-based swap participants (swap entities) subject to agency supervision".

The OCC said: "If finalised as proposed, this rule would establish minimum requirements for the exchange of initial and variation margin between covered swap entities and their counterparties to non-cleared swaps and non-cleared security-based swaps."

So firms are having to think seriously about what will be the impact on the cost of handling exotic swaps and how they can seek to mitigate the associated risk.

Various studies have estimated the additional margin required under the current proposals could be anything between several hundred billion and a few trillion, which has helped focus minds on the challenge at hand.

"In a BCBS-IOSCO consultation some 19 banks estimated their additional collateral requirements at about $1trillion, in other words, there exists a $1trillion of risk that needs to be collateralised with these

> Our proposition is a simple one: to deliver transparency and the benefits of clearing to non-standardised OTC derivatives
>
> **Neeraj Sharma, NetOTC**


NEERAJ SHARMA, NETOTC

> Historically, large dealers handled the allocation of margin to the various clearing houses they used themselves but recent regulatory reforms have made this process more onerous


MAS NAKACHI, OPENGAMMA

banks alone," said Sharma.

"The paper also identified a potential 73% saving if such transactions could be subject to multilateral netting. We are working with banks and other financial institutions to determine their potential netting benefits and we believe that risk reduction in this region is achievable across the industry," the NetOTC chief added.

NetOTC is still awaiting regulatory clearance to launch but the plan is that NetOTC will sit at the heart of the market effectively streamlining the movement of bi-lateral margin between counterparties.

The firm will handle for non-cleared trades one of the functions that clearing houses perform for cleared products, but it is not a clearing house, Sharma is keen to stress.

A number of large investment banks have already backed the initiative and it boasts an impressive board chaired by Bob Wigley, the former chairman of Merrill Lynch International, Roger Liddell, the former chief executive of LCH.Clearnet, and Dr. Robert Barnes, the chief executive officer of Turquoise.

Sharma is the former chief operating officer at LGT Capital Management and a legal director at Barclays Capital.

"From 2016 all new trades will be subject to mandatory initial margin while their legacy trades will be subject to Basle III requirements so there is an opportunity for institutions to post margin against their Basle III requirements which could further accelerate the implementation of initial margin allocation and still be more cost effective to the industry," said Sharma.

"The advantage is that with the proposed regulatory change programmes, firms are going to have to invest in this kind of technology anyway."

OPENGAMMA

The OpenGamma platform is a real-time system that streamlines the process of making margin calculations for cleared derivatives across multiple clearing houses.

Historically, large dealers handled the allocation of margin to the various clearing houses they used themselves but recent regulatory reforms have made this process more onerous.

"Regulation is a key driver for what we do. If you look at the old way of doing things, there were exotic, highly bespoke contracts and then vanilla products. Today, however, the banks have been forced to exit the specialised end of the market and are now focused on flow products where the key question is what is my margin call from my various central counterparties," said Mas Nakachi, the chief executive of OpenGamma.

"Recently initial margin has evolved from what was a straightforward daily number conversation to a far more dynamic and challenging situation which requires continual initial margin evaluation," the chief executive added.

The heightened frequency of margin calls is a key challenge for banks.

"Calculating VAR across every step of a Monte Carlo simulation is no small undertaking and people are now coming to realise there is a significant cost to doing this kind of intelligent analysis themselves – that's where we come in," said Nakachi

The increased importance of central clearing has also forced clearing providers to initiate more changes to their individual risk management techniques and to do this more often, which adds another challenge for firms.

"Margin methodologies are constantly changing also and there is a cost to keeping up to date with these changes," said the OpenGamma chief.

"Globally there are enough different central counterparties with different default fund arrangements to keep us busy. For firms to maintain that themselves, it is going to be expensive," he added.

> Calculating VAR across every step of a Monte Carlo simulation is no small undertaking and people are now coming to realise there is a significant cost to doing this kind of intelligent analysis themselves – that's where we come in
>
> **Mas Nakachi, OpenGamma**

Founded in 2009 and run by Nakachi, a former director of business development at Calypso, OpenGamma is backed by over $23m of funding from a consortium including Icap, the world's largest inter-dealer broker, and investors Accel Partners, Euclid Opportunities and Firstmark Capital.

The firm is looking ahead however and sees opportunities working with large fund management companies, a group that will have to take more responsibility for clearing as regulation forces them to insource a function that they have historically given up to their brokers.

"Collateral is more of a pain point for the buy-side. If a large asset manager needs to move its collateral around between funds that is a major challenge but once that's in place the next challenge is to optimise that and we are working hard in this area," said Nakachi.

The OpenGamma chief said the company is also looking at streamlining margin calls for non-cleared derivatives, a move that represents a natural extension of what it already does and one that would potentially take it into competition with NetOTC.

"We are also looking at bilateral initial margin which has a different methodology. This could be an industry initiative, so something that the dealers use to simulate their calculations.

"Rather than many different firms doing their own things, it makes more sense for something to act as a singular point to manage bilateral margin."

GCSA PARTNERS:
Like the other firms profiled here, GCSA Capital is a new company offering a new solution but this time to a familiar problem -- GCSA is trying to use insurance to underwrite clearing houses.

Financial clearing houses have historically been underwritten by their members, namely the banks, but this model has been called into question over recent years as the G20 rules have forced more products to clear.

This has meant clearing houses are becoming too big to fail, fuelling a debate over who will stand behind a failing clearing house.

Commercials banks have argued national central banks should be the lender of last resort but the central banks have maintained the industry would need to sort itself out in the event of a clearing house reaching the brink of collapse

Founded in 2011, GCSA believes the insurance industry offers a solution.

Chris Cononico, the president of GCSA, told FOW: "We started out by asking the question: "Is insurance participating in a portion of the default waterfall of clearing houses a good idea?

"We always thought this was a good idea for a number of reasons. It diversifies loss absorption in the clearing waterfall and affords clearing houses the advantage of additional macro-prudential surveillance."

Cononico, based in New York, said the insurance market should be interesting to clearing houses as it provides another set of eyes to look at their clearing models and insurance firms are different to investment banks in that they are focused purely on risk management whereas the banks will have vested interests at the time of a clearing house collapse, namely their own positions.

GCSA, which is chaired by David Hardy, the former chief executive of the London Clearing House before it merged to create LCH.Clearnet, has brought together a consortium of large insurance houses to work with different clearing houses.

Cononico is mindful that insurance should not replace the established default mechanisms at clearing houses, rather it could complement what it already there.

"There are various layers in the clearing default fund and the insurance layer could work in various places but we feel that it would be most effective in the catastrophic layer. We are mindful that we want to preserve the incentives in place for brokers. We are also wary that we don't want the counterparty risk falling on just one clearing house so that is why we have a consortium of up to 20 insurance firms."

The firm struck its first deal with Nordic clearer Nos Clearing in 2012 before that firm was acquired later that year by Nasdaq OMX, offering GCSA a valuable proof of concept but the president of the firm said it is ready to move to the next level.

"Smaller regional clearing houses will have a default fund of a few hundred million dollars but we are capable of supporting the largest clearers whose funds run into several billions of dollars," said Cononico.

"We are pretty far along with several large clearing houses. We are confident we are planting the seeds of a long term partnership between the insurance and clearing industries, and we think the timing is right in 2015 for this partnership to blossom in a big way."

GCSA believes a benchmark transaction will make it easier for other CCPs to follow.

"We would have to ensure that any solution we offer meets regulatory requirements but we have spent the past year talking to these people so it won't be a surprise when an application comes across their desk," the president added.

"Insurance is one of a number of tools that can be used to mitigate counterparty risk. It is not a panacea but it should be used appropriately to diversify loss absorption at the end of the waterfall.

CHRIS CONONICO, GCSA

"Smaller regional clearing houses will have a default fund of a few hundred million dollars but we are capable of supporting the largest clearers whose funds run into several billions of dollars"

Chris Cononico, GCSA