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Market structures face test of trust

Regulators are struggling to take the lid off trading that is often super-fast and sometimes opaque, writes **Jeremy Grant**

When Magnus Böcker, the chief executive of Singapore's SGX exchange, and Robert Elstone, his counterpart at the ASX exchange in Sydney, unveiled a bold plan last month to combine their bourses it was confirmation that the world of trading, exchanges and clearing – known collectively as "market structures" – is a global affair.

It is also a part of the financial world that is undergoing its most radical change in living memory – a change that matches the revolution in the way banks are regulated in the wake of the financial crisis.

That change is being driven by a cocktail of three things: regulation, competition and technology.

Regulation has created competition between exchanges and new platforms in cash equities – such as Chi-X and BATS – leading to fragmentation and a battle for market share.

At the same time that has led to complexity. Technology is now vital to navigate multiple markets, be they exchanges or "dark pools", where larger orders are handled with prices posted only after trades are done. It is a far cry from 10 years ago, when most trading in the US, for example, took place on the floor of the New York Stock Exchange.

This market structure has opened the door for new types of participants as the traditional "specialist" and marketmaker roles have largely disappeared and proprietary traders have taken their place.

Such traders can generate more than 1m trades in a single day and now represent more than 50 per cent of US equity market volume, according to the Securities and Exchange Commission (SEC), the US regulator.

Trading speed is now an arms race, with trading done at speeds unthinkable only three years ago. Last month Nasdaq OMX introduced a new trading system that can handle a trade in less than 100 microseconds, pipping the London Stock Exchange's 126 microseconds, announced a few weeks earlier.

To attract high-frequency traders, exchanges are building data centres where traders can place their computer systems – packed with algorithms – to be as close to the exchange's trading system, shaving crucial microseconds off trading times. Thirty miles outside London, NYSE Euronext has built one as large as eight football fields. The trend is sweeping Asia, where the National Stock Exchange of India built a centre in January.

Yet, as Mary Schapiro, SEC chairman, says: "This transformation of market structure has raised serious questions and concerns."

She questions whether the quality of "price discovery" has deteriorated as a result of fragmentation, and whether these changes to market structure could "undermine the fair and level playing field essential to investor protection, capital formation and vibrant capital markets generally".

It is these questions that have transformed what may have seemed like an arcane subject into a vital public policy issue for regulators, operators of market structures and investors.

Even though the SEC was already studying market structures, it took the "flash crash" of May 6 for the issue to explode on to the public consciousness. On that day, 1,000 points were wiped off the Dow Jones average as a computer algorithm triggered panicked selling.

Illustration: MEESON

That brought home to ordinary investors how far removed markets now are from the traditional images of traders on the floor of an exchange. One result has been a sharp outflow of equity mutual funds since May, highlighting a worrying loss of trust in market structures.

Jim McCaughan, chief executive of Principal Global Investors, a US fund manager, says: "The SEC has made a good start in correcting the damage done to the equity market by 10 years of deregulation. But much more needs to be done to restore investors' confidence."

At the same time, equally profound changes are under way in another crucial area of market structures – over-the-counter (OTC) derivatives and clearing houses.

The collapse of Lehman Brothers in 2008 sparked the biggest regulatory overhaul of financial markets in generations. A key part of that is building new structures that will help safeguard the system against the fallout from another big default.

New rules are being implemented where swap dealers will be regulated; where most derivatives will be traded on transparent trading facilities – either exchanges or swap execution facilities (SEFs); and where there will be a requirement to clear "standardised" swaps through clearing houses to reduce the risk in the system.

A clearing house stands between buyer and seller in a transaction, stepping in if there is a default, using funds posted to it by its members as insurance.

These moves are contained in the Dodd-Frank act, signed into law by the Obama administration in June.

The SEC and the Commodity Futures Trading Commission, the US futures watchdog, are scrambling to complete a "rule-making" process that will work out the finer points of Dodd-Frank so that the industry can implement it.

In Europe, the same agenda is being pushed by the European Commission, which produced its proposals for OTC derivatives and clearing in September. How OTC derivatives are to be traded is being handled separately in a Brussels review of the Markets in Financial Instruments Directive (Mifid).

Many new businesses are up and running, illustrating how the industry is already embracing change. Last month CME Group launched clearing of OTC interest rate swaps, with LCH.Clearnet, a UK-based rival, expected to join the fray within weeks.

In September, BGC Partners became the first interdealer broker to launch electronic trading of interest rate swaps, followed a week later by larger rival Icap.

Yet much uncertainty remains. It has yet to be decided what a "standardised" OTC derivative looks like. Nor is it clear what an SEF would be, or indeed how many of these new platforms will emerge.

> 'The SEC has made a good start in correcting the damage done to the equity market by 10 years of deregulation'

On clearing, no one is sure what the "right" number of clearing houses is, although Jeff Sprecher, chief executive of IntercontinentalExchange, says: "I think you'll see the same market participants supporting multiple market offerings, especially in a time of crisis."

In the US, ownership caps are under discussion as a way of preventing conflicts of interest – such as dealers being able to influence what can and cannot be cleared. Yet dealers worry about exchange ownership of clearing houses too. Alex McDonald, chief executive of the Wholesale Market Brokers' Association, which represents interdealer brokers, says the new rules "should not allow for clearing houses operating within a vertical silo to favour an internal trading platform".

Given their increased systemic importance, clearing houses may yet become the next "too big to fail" institutions.

But a bigger worry is the overarching concern that, as long as the new rules of the road are unclear, it is hard for banks, brokers, exchanges and others to know where – and when – to commit investments.

Brian Daly, managing director of consolidated equities at Morgan Stanley, says: "The regulators globally are about to establish a brand new ecosystem in capital markets for OTC trades. Our clients need to prepare their 2011 and 2012 budgets today for this eventuality. Being unprepared will not be acceptable."

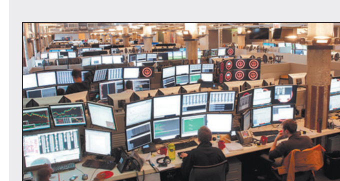
Off - exchange trading picks up

European equities turnover
By type (%)
On exchange; OTC; Off order book
60, 50, 40, 30, 20, 10, 0
Jan 2008, 09, 10, Oct

US equity market share
Per cent
Nasdaq; NYSE & Arca; BATS & DirectEdge; Internal by banks and brokers
35, 30, 25, 20, 15, 10, 5, 0
Jul 2008, 09, 10, Sep

NYSE/Nasdaq average trade size
Average trades per day ('000); Average shares per day (m); Average shares per trade
40000, 35000, 30000, 25000, 20000, 15000, 10000, 5000, 0
1600, 1400, 1200, 1000, 800, 600, 400, 200, 0
1997 98, 2000, 02, 04, 06, 08 09

Sources: Thomson Reuters EMSR; TABB Group



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Trading platforms The growing murkiness of dark pools makes for a difficult battleground for regulators, says **Jeremy Grant Page 2**

Regulation Pressure mounts over derivatives clearing, writes **Aline van Duyn Page 3**

Chicago City traders (pictured above) build on a reputation for fast finance, reports **Hal Weitzman Page 4**

On FT.com Penny pricing has fragmented liquidity, writes **Hal Weitzman** **www.ft.com/exchanges-trading-clearing-2010** and **www.ft.com/tradingroom** see also **www.twitter.com/FTTradingRoom**

Region in flux as bourses fragment

Asia

The pace of this fundamental change is far from uniform, says **Kevin Brown**

The fragmenting of stock markets away from traditional exchanges is spreading quickly to Asia from Europe and the US, shaking up the region's sedate institutions as it does so.

Change is everywhere. In the latest shock to the sector's system, the Singapore Exchange has offered $8.3bn to acquire the Australian Stock Exchange, largely as a way of gaining scale and protecting against marauding alternative exchanges.

Until recently, such a bid would have been unthinkable, because Asia was largely protected from emerging alternative platforms by its patchwork of national regulations. As a result, traditional national stock exchanges still have a firm hold – unlike their counterparts in London and New York.

Yet Asia is now the world's second-biggest securities trading region after the US, according to the World Federation of Stock Exchanges. Even with national boundaries firmly entrenched, that makes it an enticing prospect.

As Steve Grob, director of group strategy for Fidessa, the trading systems supplier, puts it, fragmentation is now "very much a global phenomenon". Nevertheless, the process is moving at different speeds and in different ways around the region.

Japan has emerged as a fertile ground for alternative trading platforms, where shares are traded electronically in much the same way as on the Tokyo Stock Exchange, with similar degrees of transparency.

Several exchanges are now hosting high-frequency trading systems like those that have captured a majority of trading in the west, where most trades are now done in nanoseconds by computers designed to spot the arbitrage profit in tiny price differences between markets.

Liquidity is also moving from exchanges into automated trading systems whose membership is open only to financial institutions. Some are an extension of traditional "upstairs trading" – bilateral deals that old-fashioned brokers used to handle on the phone.

Others are "dark pools" of capital – closed platforms that allow financial institutions to match trades in large blocks of shares out of sight of other investors. Examples include US-based Liquidnet, and Singapore-based BlocSec, owned by the Hong Kong broker CLSA.

Behind the scenes, Asian stock exchanges are actively discussing how to react to the trend towards fragmentation. However, in the absence of region-wide regulatory regimes such as Europe's Markets in Financial Instruments Directive (Mifid) and Reg NMS in the US, the response appears piecemeal.

In some countries, the exchanges are responding with innovations of their own. Sydney-based ASX is cutting fees and introducing a block trading facility ahead of the entrance into the domestic market of Chi-X Global, the equities trading platform, following a change in regulations to allow competition.

> In some countries, the exchanges are responding with innovations of their own

The Australian, Tokyo and Singapore exchanges have announced technology reforms to accommodate and attract high-speed traders. And the New Zealand stock exchange has joined Australian and US investment banks in setting up an alternative platform called AXE ECN.

Global hub plans: SGX's Magnus Böcker and Robert Elstone, chief executive of ASX
Bloomberg

One of the most dramatic transformations is occurring at the Singapore Exchange. Once highly critical of dark pools, the SGX has responded to their appearance in the island state by winning regulatory approval to set up a pool jointly with Chi-East, an offshoot of Chi-X Global.

Magnus Böcker, the Singapore Exchange's chief executive, talks passionately of turning the SGX from an old-fashioned bourse into a global hub for trades in equities, commodities and derivatives – over the counter, in dark pools, or bilaterally, with the trades cleared by the exchange.

"My approach is to say that if the institutions in the market want to trade in different ways and the brokers want to support them in that, why wouldn't we help them facilitate it?" says Mr Böcker, a former president of Nasdaq OMX.

"It's not up to me to decide what investors should do; I don't decide what they should invest in and I can never decide what platforms they should trade on," he said in an interview with the Financial Times.

Mr Böcker's bid for the ASX is, in part, an attempt to back up his vision with action. If approved by regulators, the bid will create the world's fifth-largest exchange by market capitalisation, with a mandate to take on the competition head-on with a range of platforms across the region.

However, other exchange heads are seeking to erect barriers to block new entrants before they become established.

Ravi Narain, chief executive of India's National Stock Exchange, says dark pools have "come in on a platform of opacity". Ronald Arculli, chairman of Hong Kong Exchanges, says fragmentation risks are creating a "mathematical playground for the few to the detriment of many".

As in the US and Europe, however, that is not an argument that cuts much ice with investors seeking lower costs.

Caution the byword as Beijing looks to futures

China

A ban on trading by foreigners may end soon, says **Patti Waldmeir**

When it comes to equity markets, China never does anything hastily. So, before Beijing introduced stock index futures trading on the mainland, it set up an exchange that spent more than three years practising; sent regulators to tour the country educating potential investors; established a 30-minute examination investors must pass before they are allowed to trade; insisted on high deposit and margin requirements; and banned foreigners from taking part.

Then last April, China finally passed an important milestone on the path to being a market-driven economy by announcing the start of stock index futures trading in mainland China. This is part of a broader transformation of mainland markets that has also included the introduction of a pilot programme of short selling and margin trading of equities this year.

Trading began with contracts based on the CSI 300 index, which tracks the Shanghai and Shenzhen markets. Only investors who maintain a minimum deposit of Rmb500,000 ($74,845) are allowed to trade, and there is a 15-18 per cent margin requirement.

The rules were designed to keep out the small retail investors who are the lifeblood of China's markets – but also the most speculative investors.

Regulators say such tools are crucial to allow traders in China to profit from falling as well as rising markets, and to hedge their positions against downturns in China's notoriously volatile markets. The ultimate goal is to improve capital allocation in the Chinese economy, and bring the Chinese stock market closer into line with western norms – part of a drive to transform Shanghai into a global financial centre by 2020.

> These are the first financial futures to be traded in China since the 1990s

But introducing index futures made the regulators nervous. Commodities such as gold, soyabeans and fuel oil have been traded in Chinese futures markets for years, but these are the first financial futures to be traded in China since the mid-1990s, when the government bond futures market collapsed just two years after it started as market manipulation spiralled out of control amid a lack of regulatory oversight.

Regulators were not going to make that mistake twice, so they have kept a close eye – and a firm hand – on trading of index futures.

Volumes in the early days were huge, but government officials became concerned that investors were using the contracts mainly to speculate rather than to hedge risk. Volumes have fallen since then – nearly halving between July and September – and officials now say the market is developing well.

Regulators say there is no doubt that financial futures trading will be expanded – and many local analysts expect foreigners to be allowed to trade index futures soon.

Over time, barriers to entry may be lowered. But for the moment, risk prevention remains the top priority.

"Derivatives like futures are a double-edged sword that is not only a tool to manage risks but is also a source of risks unless it is used appropriately," the People's Daily said when futures were launched in April.

Caution is likely to remain the byword for some time to come.

'Flash crash' blamed on computer, but not error

Market stability

Finger pointed at increasingly wide use of automated trading programs, says **Telis Demos**

In the wake of the May 6 "flash crash", sellers and buyers were quick to point the finger at each other as the trigger for the market's sudden turbulence.

At 2.30pm the S&P 500 index was down by about 4 per cent as images of Greek riots played on television screens. Investors in company shares were selling, fearing the effects of a European sovereign debt crisis on the global economy.

At about the same time, electronic market makers, seeing overwhelming sell orders with few buy orders to match, stopped buying for fear of being stuck with positions they could not quickly resell. By 3pm, the S&P 500 index had plunged almost 6 per cent, before it zoomed back up by roughly the same amount.

A September staff report by the SEC, jointly with the Commodity Futures Trading Commission, described the sequence of events that led to the crash, but did not settle any debates about whether it was the panicked seller or the skittish buyer who was to blame.

What the report did say was this: at 2.32pm a mutual fund (later identified as Waddell & Reed) entered an order to sell 75,000 e-Mini S&P 500 index futures on the CME.

The fund used a "participation algorithm" to sell as much as 9 per cent of the market's volume. This trade sparked a cascade of buying and selling in the futures and equity markets that panicked market makers, leading them to stop trading, which resulted in the market's 6 per cent swing.

That finding surprised many, who had expected some kind of computer glitch – Warren Buffett speculated on CNBC that it may have even been a "cyber attack". That would have put the smoking gun in the hands of high-speed traders who rely on massive computing power to buy and sell shares in microseconds to earn a stream of tiny profits.

But the focus on Waddell's trading order highlighted the fact that increasingly, institutions are also tapping such automated trading programs.

Tabb Group, a market structure research firm, estimated in a recent report that so called "low-touch" algorithms that determine how, where and when to trade will represent 35 per cent of trading in 2011, on a par with "high-touch" trades where humans decide how to trade at each step.

Many traders were critical of Waddell's very large, trade-at-any-price order, as were regulators. Shortly after the release of the report, Mary Schapiro,

> 'Liquidity vanished completely during the "flash crash" when natural participants needed it the most'

chairman of the SEC, said: "We are looking at whether these algos ought to have some kind of risk management controls."

That has sparked a rethink among traders on the buy side. A study by Instinet, an agency brokerage that sells trading services to institutions, advised its clients that "the report could be read as a warning against using algorithms that send orders based only on volume without price controls".

Groups that sell algorithms to institutions have, since the crash, put an emphasis on how those programs track market liquidity in a way that can detect when conditions are similar to May 6, according to Eran Fischler, head of research at Pragma, a trading technology group.

Buy-side groups also say they are asking their brokers for more information about trade execution, such as which venues trades are executed in, and why.

"It's a five-year head-start for high-frequency traders," said Kevin Callahan, chief executive of X41 Trading, at a recent forum at Baruch College in New York. "The fundamental trading world needs to catch up."

However, high-frequency proprietary traders were not excused by the report. The SEC report also highlighted the "stub quotes", or prices at one penny or $100,000, at which many individual stocks traded between 2.30pm and 3.00pm.

HFTs, who have replaced the specialists who used to be tasked with maintaining orderly markets on the NYSE trading floor, constantly enter such quotes to maintain a "two-sided market" at all times, as is required of market makers.

While that might meet the letter of the rules, the fear is that it does not meet its spirit of keeping the market orderly. As those quotes were never intended to become active, some believe that adding more human judgment would have prevented such trades.

"Liquidity vanished completely during the 'flash crash' when natural participants needed it the most," says Diego Perfumo, exchanges analyst at Equity Research Desk.

Regulators are now keying in on the distinction between real liquidity, which stays in place when markets are uncertain, and mere volume, which can suddenly evaporate.

The SEC, along with US exchanges, has explored banning stub quotes. Practices such as "quote stuffing", which is when a trading firm enter trades and quickly removes them, creating a false impression of market demand, have also come under scrutiny.

"The issue is whether the firms that effectively act as market makers during normal times should have any obligation to support the market in tough times," Ms Schapiro said in October.

Andean trio plan market alliance

Latin America

Chile, Colombia and Peru are joining forces, says **Naomi Mapstone**

Chile, Colombia and Peru are poised to launch the first stage of a stock market integration that will open the gates for foreign investors who have never ventured beyond Mexico and Brazil.

The new kid on the Latin American block will be the region's top issuer, with 563 stocks and second in market capitalisation at $563bn. It will be third in terms of traded volume – albeit a distant third, at $48bn, behind Mexico with $79bn and Brazil, the region's behemoth, with $554bn.

"It's a pretty attractive offering – they just needed scale. And the tie-up they're going to roll out really gives them the scale to compete with a Brazil or a Mexico and quite frankly with a Singapore or a Mumbai or a Jo'burg," says Laurence Latimer, senior vice-president and managing director for Sungard's trading and client activity in the Americas.

Chile, the established heavyweight of the trio, with a market capitalisation of $291bn and traded volume of $30bn, offers a strong portfolio of service, retail and industrial stocks, while Colombia, with $199bn market capitalisation and $16bn traded volume, is dominated by energy stocks.

Peru, the minnow of the trio, with a market capitalisation of $47bn and traded volume of $2bn, is heavily weighted to mining stocks.

While the total value of stocks traded on all three exchanges last year was $56bn, that could increase eightfold, if the Andeans

> 'Strategically each of us still keeps control of our own platform'

repeat the success of Euronext and Nasdaq OMX Nordix integrations.

"We are very excited about the project; there's an upside for everyone," says Francis Stenning, chief executive of the Lima bolsa.

The first stage, which rolls out on November 22, will give traders in each country access to partner markets. A second stage, to be completed by December 2011, will allow for direct access to markets and the standardisation of regulation.

"Strategically, each of us keeps control of our own platform, it keeps liquidity in one single market, and it keeps the aspects related to confidentiality, control – all the aspects related to the trading activity – in one single market under the supervision of their own regulatory market," says Mr Stenning.

Cristián Moreno, head of LatAm Equity Research at Santander, argues that Colombia is ripe for an IPO boom and points in a report presented at the New York-based Council on the Americas to Peru's "catch-up potential".

Peru has 17.5 per cent of listed companies in Latin America but just 0.6 per cent of traded volume, Mr Moreno notes.

Cristhian Escalante, an analyst at Celfin in Lima, says: "Our daily volume of trade in Peru is less than $20m. In Chile it's more than $200m and in Colombia it's almost $100m. We are seeing strong interest from investors in Colombia and Chile because they see Peru as cheaper."

Mr Latimer says the integration will be a strong driver of growth in the region, as domestic and international investors take advantage of lower costs, lower risk and greater ease of access.

"There's a recognition that Latin America is much more than Brazil and Mexico and you want to make sure you have a strategy that gives you exposure to as many markets as possible, particularly those that have proved themselves stable," he says.

One-size-fits-all approach risks killing flexibility

OTC derivatives

There is a great deal to discuss as rules in swap deals are likely to change, writes **Michael Mackenzie**

Last month, leading forces in the over-the-counter derivatives industry trekked to a basement conference room in the Grand Hyatt in Washington to discuss a crucial issue; how will regulators define Swap Execution Facilities or SEFs.

This new term for derivative trading platforms is enshrined in the Dodd-Frank reform act and next month the Commodity Futures Trading Commission (CFTC) and Securities and Exchange Commission will release initial rules governing SEFs. This will be followed by a comment period, with plans to implement the rules for these new trading platforms by July 2011.

Many in the derivatives industry are expected to weigh in at length on the proposed rules for SEFs during the comment period. There is plenty at stake for banks, interdealer swap brokers, corporations and institutional investors who trade and/or use swaps and derivatives.

Under Dodd-Frank, SEFs are required to permit multiple parties to trade with each other and also publish streaming prices. It also appears that SEFs will enable the combined use of voice and electronic systems through a hybrid model, which finds favour with interdealer brokers such as Icap and Tullett Prebon.

In general, SEFs reflect the desire of regulators for a more transparent and open market and moves over-the-counter derivatives trading towards a futures type model.

"The CFTC prefers a futures based model of many participants with many liquidity providers," says John Jay, analyst at Aite Group.

Except, argue many in the industry, what works in the world of futures and equities is not easily applied to OTC derivatives.

OTC derivatives are the domain of banks, institutional investors and corporations looking to hedge interest rate, credit and currency risk, or to trade these instruments.

Unlike the futures and equities markets, OTC derivatives can trade infrequently as many trades are bespoke in nature, and have been manufactured between a dealer and their client to hedge a specific interest rate or currency risk. Often, such trades can be substantial, with notional amounts in the hundreds of millions.

Thus a big concern at the recent conference in Washington, which was billed as Sefcon1, was that liquidity in swaps will suffer if trading is standardised on to platforms. A large trade will move the market adversely against an investor seeking to buy or sell a $500m swap trade, say – not an uncommon amount for interest rates.

Some in the industry, such as the International Swaps and Derivatives Association, have written to the CFTC and SEC asking that SEF's include swap trading platforms where institutions conduct request-for-quote trades, or RFQ's.

This cuts to the heart of the issue between regulators seeking more open and transparent derivatives trading and the unique nature of how swaps are priced and transacted.

At Tradeweb, an electronic platform where banks provide swap prices for institutional clients, they have discovered a middle ground between continuous prices and RFQ that helps investors transact large amounts of swaps.

"Many clients are using our streaming prices to check pricing before they use an RFQ for trading," says Lee Olesky, chief executive officer at Tradeweb. "The streaming price adds a lot to pre-trade transparency."

Icap's swap platform for banks trading swaps in Europe also enables two parties to a trade to subsequently build up the size of their transaction from an initial amount. This platform is seen as being easily applied to US swaps once the SEF rules are defined.

While Icap services banks trading solely with each other, there is a bigger battle brewing.

If regulators strictly enforce a "many to many" model with streaming prices supplied by banks and investors, it would render obsolete the platforms used by dealers, who market swap prices directly to their clients via Bloomberg screens.

"The broker-dealer community will continue to fight the proposed changes in trading, arguing that single-dealer platforms should qualify as legitimate execution facilities," says Mr Jay.

It remains to be seen whether regulators will impose rules that strike a compromise between their desire for derivatives trading like other markets and the unique trading of swaps.

Mr Olesky says: "It's critical to have sufficient flexibility in trading rules governing SEFs so overly rigid rules do not hurt innovation or liquidity."

In secret: some critics say the 'price formation' process is being undermined as more trading takes place away from exchanges — Alamy

Regulators face uphill battle as dark pools grow murkier

Trading platforms

More deals, many of them much smaller, are taking place out of the public gaze, writes **Jeremy Grant**

It would be hard to find a phrase less suited to generating confidence in markets, or more specifically market structures, than "dark pools".

It conjures up a world where trading is done in secret, away from public view. It suggests possibly nefarious activities carried out beyond the sight of regulators.

The latter statement is (probably) false. But the former is not far from the truth. Dark pools exist to allow institutional investors to do large share trades away from standard exchanges, where prices are posted for all to see before trades are done. In a dark pool, prices are advertised only after trades are done.

Dark pools account for up to 10 per cent of US share trading, by some estimates, and about half of that proportion in Europe. But they are growing, because many institutional investors, especially asset managers and pension fund managers – the so-called "buy side", are finding it increasingly difficult to get large orders done on exchanges and their smaller rivals, known in Europe as "multilateral trading facilities" (MTFs), such as Chi-X Europe and BATS Europe.

That is because the average size of orders being placed on exchanges and MTFs (collectively known as "lit" platforms, because prices are visible before trades are done) is rapidly shrinking as high-frequency trading and the use of computer algorithms to slice orders into ever-smaller sizes is changing the composition of such venues.

As orders become smaller, so the risk increases that a trader placing a large order into the market will find an order jeopardised as other traders see the large order coming into the market – and move the market against it.

To some, using the off-exchange markets for specific purposes like this is little different from the old days of the telephone-brokered, off-exchange, or over-the-counter (OTC) market.

Kay Swinburne, a UK Conservative member of the European Parliament and author of a report into dark pools and "high-frequency" trading as part of a Brussels review of trading infrastructures, says: "Despite its ominous name, a dark pool can be considered at the most basic level to be an electronic equivalent of a disintermediated OTC transaction."

However, there are two trends that are troubling regulators and some market participants and making the evolution of dark pools uncertain.

First, while dark pools are still a relatively small part of the market, they are growing fairly fast and that trend is unlikely to stop as long as markets continue to be bifurcated between the "lit" platforms where high-frequency and "algo" players are trading, and the dark pools where asset managers are increasingly forced to get their business done.

Some critics, usually exchanges but not exclusively so, say that the overall "price formation" process is being undermined as more and more trading takes place away from exchanges, where ordinary investors tend to make their trades. The US Securities and Exchange Commission is studying the issue as part of a sweeping review of market structures.

In a letter to the SEC, Dutch proprietary trading firm IMC says: "Dark pools take advantage of the pricing of the public exchanges without contributing to the price discovery process themselves, using publicly disseminated quotes and prints as a reference point for the initiation of trades outside of the public markets."

Ms Swinburne says: "As more transactions take place in the dark, questions can be raised as to the validity of the price creation and discovery process on the exchanges and MTFs."

A second issue is that while dark pools are perceived as places where blocks of trades are done, in fact average trade size in dark pools is also falling. That is because larger so-called "parent" orders placed in a dark pool are typically split off into smaller chunks, called "child" orders, and may even be worked over hours – or even a couple of days.

Many suspect that, as part of this, high-frequency traders are now operating in dark pools, meaning that the original purpose of dark pools is being lost.

However, Tony Nash, head of execution services at Execution Noble, plays down the impact of high-frequency trading: "It is

> 'Dark pools take advantage of the pricing of the public exchanges without contributing to the process themselves'

important to note that high frequency traders (HFT) are driven by reacting to signals in the market and, therefore, given that dark pools are constructed to minimise this 'noise' it is a far less interesting hunting ground for HFT than the lit venues," he says.

Nonetheless, it is important also to realise, industry experts and regulators say, that not all dark pools are the same. Some are operated by banks – and are known as "broker crossing networks". Others are run by independent operators, such as Liquidnet, which operates pools as far afield as Mexico and New Zealand in addition to the US and Europe. And exchanges themselves operate their own versions.

This makes any assessment of the pros and cons of dark pools tricky, since they do not all do the same job.

Indeed, some exchanges have recently started offering new types of block trading platforms to try to attract some of the institutional business that has been leeching away to dark pools back to the exchanges.

Last month, Nasdaq OMX launched just such a platform, called PSX. TMX Group, operator of the Toronto Stock Exchange, said in September it would launch a new platform for "dark orders" that would be integrated into the exchange's existing order book.

Regulators are acutely focused on increasing transparency and restoring trust in the way equity markets function, especially in the wake of the "flash crash" on May 6 in the US, when an algorithm sparked a massive fall in the Dow Jones average.

Brussels is also conducting a thorough review of equity markets in Europe three years after the Markets in Financial Instruments Directive brought about competition and a flourishing of types of venues.

Industry experts say they expect a "back to basics" approach when it comes to market structures, that could affect dark pools too.

Seth Merrin, founder and chief executive of Liquidnet, says: "Perhaps more important is the vital function that venues like Liquidnet, which cater specifically to institutions, provide that protect them from the many types of traders and investors with competing interests.

"The exchanges and the internalisation engines cater to many different customers, which include high frequency traders and others that have very different goals from the long-term investor. If we are going to restore investor confidence in the equity markets, investors need the assurance that their orders are not being taken advantage of by predatory traders and are being executed at the best price possible. "

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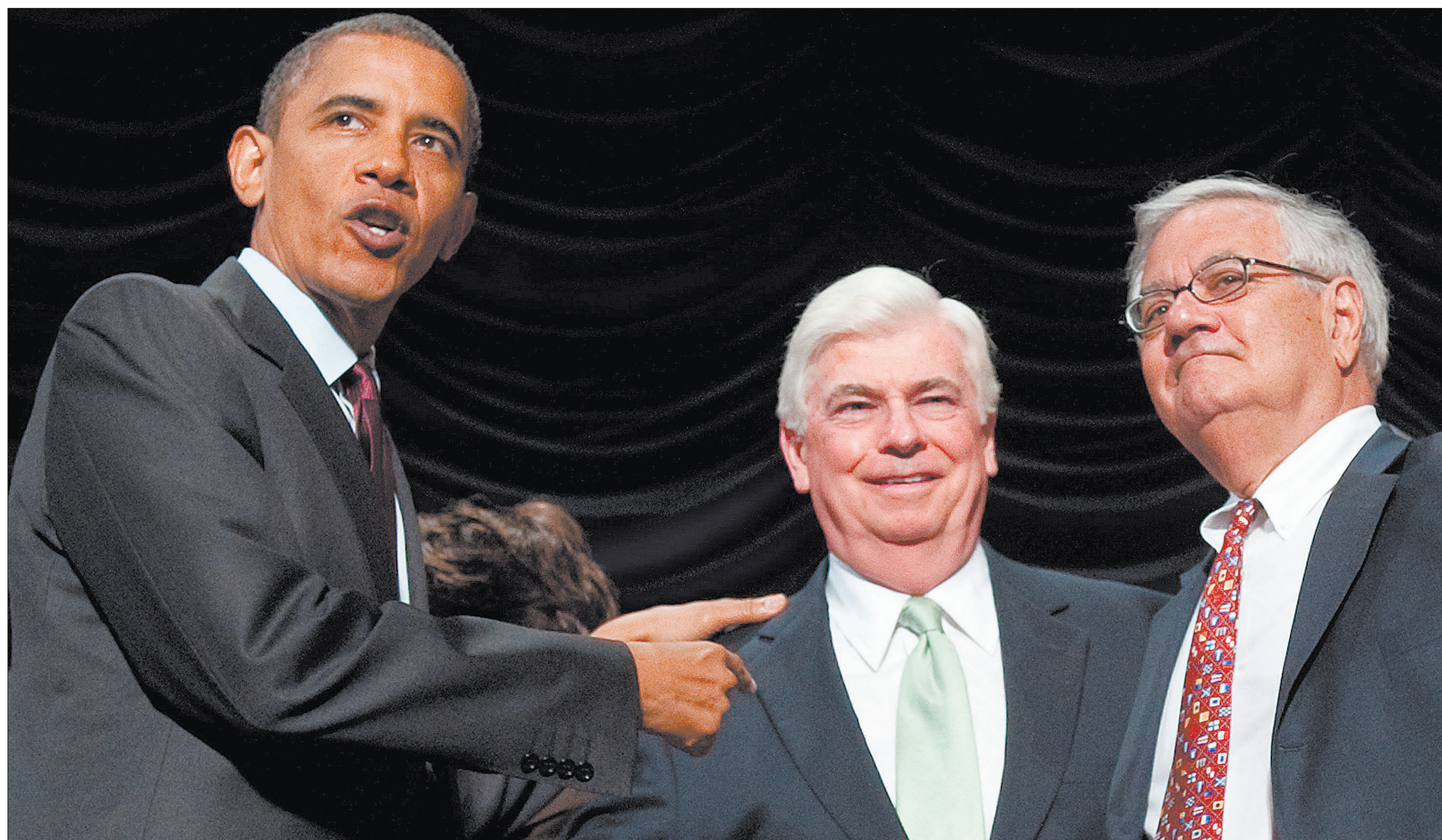
Pressure mounts over derivatives clearing

Regulation

Details of the centralised operations are still unclear, reports **Aline van Duyn**



Rulemakers: (left to right) US president Barack Obama with Senator Chris Dodd and Representative Barney Frank after signing their legislation AFP/Getty Images

A central part of policymakers' response to the financial crisis has been legislation requiring that large amounts of the $615,000bn privately traded derivatives market is pushed on to clearing houses.

At present, only a small proportion of this over-the-counter derivatives market is centrally cleared.

Of the parts that are, most of the clearing is of trades done directly between dealers. Investors – the so-called "buyside", which includes large asset managers, insurance companies, pension funds and hedge funds – will have to start clearing the derivatives they use, too.

In the US, the Dodd-Frank Act will make this mandatory for many of them, probably by the middle or end of next year. In Europe, there is a bit more time. New legislation probably will not kick in until 2012.

"Everyone thought buyside clearing would become a reality last year," said Jeff Gooch, chief executive of MarkitServ, which electronically confirms many OTC derivatives trades. "In practice, very little has happened; everyone is waiting for the detailed rules."

Clearing became a central focus after the demise of Bear Stearns and the Lehman Brothers bankruptcy in 2008, because of the exposure banks had to each other through the billions of dollars worth of derivatives contracts they had agreed to.

A default of one bank could threaten the entire financial system, although these contracts, anything from interest rate swaps to credit derivatives, could be worthless if the bank writing the contract went under.

Since 2008, the big derivatives dealers have put hundreds of millions of dollars into making clearing a reality. Clearing puts a third party in the middle of every trade, which means the risks and costs of defaults are absorbed by the clearing-house members.

At the moment, there are a handful of potential clearers that could capture a share of future business.

Some, such as LCH.Clearnet's SwapClear are already widely used by dealers. SwapClear is active in the dollar interbank market; some 35 per cent of its clearing is dollar-denominated and seven of SwapClear's 32 members are US legal entities. It is also still working on setting up an entity that can be used by the buyside in the US.

Others, such as CME Group's recently launched interest-rate swap clearing business or the Nasdaq-owned International Derivatives Clearing Group (IDCG), are being developed by exchanges that are branching out into OTC derivatives for the first time. CME's swap clearing business was launched with the backing of dealers and large derivatives users such as Fannie Mae and Freddie Mac, although this does not mean that investors will not also use other clearers in the future.

For exchanges, getting paid a small fee every time a derivative contract is cleared is a potentially attractive fresh source of revenues, especially as traditional equity trading volumes and other activities decline.

The shape of the OTC derivatives clearing model is still murky, however, and there are still a lot of key issues that are up for grabs, as regulators flesh out new laws with detailed rules and regulations. For investors, questions include exactly when they need to start clearing, what types of contracts need to be cleared and whether any of them will be exempt from clearing rules. Clearers are wondering whether they will have to accept smaller members and whether current rules for clearing houses will change.

Indeed, the questions loom so large that, for the most part, investors are still sitting on the sidelines. "I would say that although 80 per cent of our clients have not made final decisions about which clearing house to use, they are reasonably open to multiple platforms and are waiting for the rules," says Dave Olsen, global head of OTC clearing at JPMorgan. "About 20 per cent of our customers are moving forward on clearing."

Yet, even as efforts begin to sign investors up to clearing systems, the future shape of the clearing business is still difficult to picture.

Investors have raised concerns that the current rules for clearing houses would expose them to new risks because the assets held by the FCMs are in pooled, not segregated, accounts. If the rules are changed, clearing houses say it could sharply change the economics of clearing, and some banks may withdraw.

Looking ahead, there are concerns that too much competition for new business, as well as regulators' demands that clearers be based in specific countries or regions, could lead to inefficiencies.

"Clearing two or more classes of derivatives in separate [clearing houses] always increases counterparty exposures relative to clearing the combined set of derivatives in a single [clearing house]," says Darrell Duffie, a professor at Stanford University.

Stock exchanges muscle in as clearing houses prepare for shake-up

Settlement

New regulations are set to create a boom for business in Europe, writes **Philip Stafford**

NYSE: studying the market

The business of clearing cash equities in Europe, a hitherto unglamorous and not wildly profitable segment, has become one of the central issues affecting the structure of the market.

On the face of it, a clearing house plays a functional role in trading. Sometimes known as a central counterparty (CCP), it stands between buyers and sellers, ensuring that trades are confirmed and stepping in to complete a transaction if either party defaults.

But it has become the unlikely setting for a heated debate between exchanges, banks, brokers and other clearing houses. Market participants expect a new wave of business to shift to exchanges and clearing houses as a result of financial reforms designed to safeguard and boost the transparency of the opaque over-the-counter derivatives markets.

Ownership of a clearing house has helped seal a dominant position in US futures markets for CME Group, the Chicago-based operator, and in European derivatives for Germany's Deutsche Börse. NYSE Euronext is looking at this market while the London Stock Exchange is expected to follow suit. In doing so, NYSE Euronext is set to build its own clearing house.

The European landscape is highly fragmented, partly a legacy of national stock exchanges' longstanding relationships with clearing houses that clear mainly domestic stocks. New clearing houses have emerged in recent years, taking large slices of business from the myriad of alternative trading venues that have sprung up. The European Association of Clearing Houses has no fewer than 21 members.

New entrants have helped force down prices, but an oft-cited statistic is that the cost of clearing in Europe is up to eight times the cost of settling in the US. Up to 40 per cent of the total cost of a trade can be taken up in clearing costs.

The likely emergence of vertical clearing houses runs counter to market participants' preferences. They would like to see a market consisting of several clearing houses as it would bring down prices. Being forced into a vertical market, owned by an exchange, has raised fears that prices could be kept high.

Many investors have argued that this is a disincentive to raising trading volumes, which remain well below US levels.

The Association for Financial Markets (AFME), a banking lobby group, says its members want fewer clearing houses. "The consolidation of CCP clearing allows users to gather and offset their open positions in a single portfolio," says a spokesperson.

> 'Interoperability will increase liquidity and volumes, and the cost will come down further'

At the same time regulators, banks and clearing houses have been pushing for greater co-operation between clearing houses. Known as interoperability, two or more clearing houses connect with one another and trading platforms. It enables the clearing house to clear its participants' trades irrespective of the platform the trade was executed on.

To date, the industry has been encouraged, but not compelled, to interoperate. It escaped prescriptive regulation when the Markets in Financial Instruments Directive (Mifid) was launched three years ago.

Instead, participants signed up to a code of conduct which insisted that clearers create links with each other to give market participants a choice about where their trades were sent.

There have been some agreements, such as a tie-up between LCH.Clearnet and X-Clear of Switzerland, but by and large it has not happened. In the wake of the financial crisis regulators have been more concerned about inadvertently introducing systemic risk.

Areas of the system are on the verge of a breakthrough. Regulators in the UK, the Netherlands and Switzerland are putting the finishing touches to an agreement that would see LCH.Clearnet, X-Clear and European Multilateral Trading Facility (EMCF), a Dutch clearer, interoperate. An agreement is expected as soon as this month.

But newer entrants and banks have argued that a more fundamental problem is at work.

"Investors (and intermediaries acting on their behalf) trading on a given trading platform are obliged to use the CCP selected by that platform to clear their trades," says AFME.

"In terms of disincentive, interoperability will increase liquidity and volumes, and the cost will come down further," says Tony McGuigan, general manager at X-Clear, part of the SIX Group, the Swiss exchange. "Flow is finite. To survive you need flow."

Some are willing to run not very profitable, possibly even lossmaking operations, to position themselves for the coming business from OTC derivatives.

All are considering their options. Consolidation is under way, with discussions between the Depository Trust & Clearing Corporation of the US, EMCF and Euro CCP, the DTCC's European arm, about the creation of a quasi-utility clearer for Europe.

Others face a scramble for business. LCH.Clearnet faces the loss of NYSE Euronext as a client and the potential loss of the LSE.

But even if clearing houses become interoperable, fears remain that new obstacles will be erected.

"Interoperability is only half the solution," says Diana Chan, chief executive of EuroCCP. "Central counterparties that interoperate also need access to the trading venues that are upstream from clearing, in order that users can have real choice and effective competition. Access and interoperability are inseparable."

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Into the future: the headquarters of Jump Trading and other high-speed trading groups in a former warehouse near the centre epitomise the Windy City's metamorphosis from industrial powerhouse to global high-tech centre

Chicago builds on its reputation for speed

Transformation

Old open-outcry skills and high-tech are a powerful combination, writes **Hal Weitzman**

The building on the corner of Larrabee Street and Chicago Avenue, near the city centre, does not look like a high-technology centre. Solid and industrial, it reflects its original use – a warehouse for the Montgomery Ward mail-order catalogue company.

Now it is base for a string of proprietary trading firms and other companies in the world of electronic trading. High-speed trading groups such as Infinium Capital Management and Jump Trading are headquartered there, as are derivatives brokerages Penson GHCO and thinkorswim.

The transformation of a building that represents Chicago's industrial past encapsulates how, quietly and without fanfare, the city has emerged as a global centre for both trading technology and algorithmic trading firms.

Chicago's derivatives-trading community has always flourished on the ability to reinvent itself. In the early 20th century, the city became a global centre for agricultural futures trading. In the 1970s, it created financial futures and listed options. Since the late 1990s, it has seen a boom related to the "electronification" of financial markets.

The city's top proprietary electronic trading firms have become some of the most powerful participants in global financial markets. Groups such as Getco, DRW, Infinium, Chicago Trading Company and Peak6 are, in some respects, as important to the markets as Wall Street's biggest names.

These companies – and hundreds of smaller "prop shops" – have spurred the development of Chicago-based financial technology vendors such as Trading Technologies, which sells trading software, and 29West, a maker of high-speed messaging software, owned by Informatica.

The roots of all this were the dynamic trading pits on the floors of the Chicago Mercantile Exchange, the Chicago Board of Trade and the Chicago Board Options Exchange.

Since the 19th century, the city's fiercely competitive open-outcry system had attracted risk-takers to become independent market-makers. Young people typically started as runners or clerks on the floor, moving up as they learnt the ropes.

Although, nowadays, the trading floor is a shadow of its former self, most of the heads of the Chicago prop shops were trained in open outcry. As exchanges introduced electronic trading and 24-hour markets, they saw the opportunity to transfer their skills to the screen.

Old-fashioned Chicago trading ingenuity enabled them to take full advantage of the electronic age. "Technology is extremely important, but the most important piece is still the trading knowledge," says George Hanley, president of the Hanley Group, a proprietary trading firm and an early backer of Infinium and Blink Trading, which was sold to Getco.

> 'Eurex started out as purely an electronic exchange and it opened people's eyes'

Speed and technology had always been important in Chicago. Whether it meant having the fastest runner delivering orders to the floor or the ability to flash orders into the trading pit using hand signals, speed had always been critical, while new gadgets – telephones, Teletype machines, calculators – were seized upon by traders looking for an advantage.

Chicago was not, however, first to electronic trading. Deutsche Terminbörse, the first big fully electronic exchange which later became Eurex, launched in 1990. Many Chicago traders saw it as the future, some even moving to Frankfurt.

"Eurex started out as purely an electronic exchange and it opened people's eyes," recalls Farley Owens, executive vice-president of product management at Trading Technologies.

In 1992, the Chicago Mercantile Exchange responded with Globex, its electronic trading platform, setting in place a process of the gradual shift of floor-based trading to the computer screen, ever-faster trade execution and now co-location facilities enabling lightning-fast algorithmic trading.

Many of the now-big proprietary electronic trading firms set up shop in the late 1990s, often seeded with money made on the trading floor, and in many cases maintaining a floor-based operation alongside their electronic trading desks.

Chicago's markets had long been based on proprietary trading, as small groups of traders banded together. These groups were used to trading across asset classes and looking for arbitrage opportunities.

The awareness of technology and the desire to trade different assets led to the creation in Chicago of Archipelago, the electronic stock-trading platform acquired by the New York Stock Exchange in 2005.

Alongside Chicago's derivatives trading know-how, the city's infrastructure also helped.

Holly Duran, a commercial realtor who serves the Chicago trading community, says the city had plenty of former industrial buildings that could accommodate the cabling and cooling systems needed to run a lot of computer hardware, as well as small spaces in or near the exchange buildings that could be rented relatively cheaply.

Although they now have offices around the world, technology has enabled Chicago's proprietary trading firms to remain lean compared with the Wall Street banks.

"They're more technology-dependent than people-dependent," says Kevin Krumm of Objective Paradigm, a local financial technology headhunting firm.

As high-speed electronic trading grows across all asset classes, the prop shops are becoming more institutionalised. That could accelerate with US financial regulatory reform, as it becomes harder for the big banks to do proprietary trading and over-the-counter markets become more electronic and transparent.

"The industry is maturing," says Steve Brodsky, managing director of Vernon and Park Capital, a Chicago private equity firm that focuses on the financial sector. "The prop firms could become the new investment banks."

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High-speed electronic trading leaves regulators far behind

Technology

A revolution has left rules in need of an overhaul, says **Philip Stafford**

Seven years ago Michael Spencer, chief executive of Icap, the world's largest interdealer broker, made a speech to a conference he ended with: "The future's electronic!"

He was speaking in 2003 soon after Icap bought BrokerTec, the electronic bond trading platform. As the mania of the dotcom bubble subsided, the number of fixed-income trading platforms was reducing rapidly from more than 100. There were many platforms but few could attract the volume necessary for success.

Mr Spencer's point was that his audience of banks and brokers had not misread the market – the demand for electronic trading was there but they had gone about fulfilling it the wrong way.

Fast-forward seven years and Mr Spencer's vision has arrived. Traders no longer simply buy shares on the London Stock Exchange but can make complex trades involving equities and derivatives on a host of trading venues at bewildering speed.

Algo Technologies, a US-based trading technology group, last month claimed it could complete a share trade in 16 microseconds. To put that in context, the average housefly's wing flap is three milliseconds – and one millisecond is made up of 1,000 microseconds.

For many, the extent of the gap between reality and the stereotype of traders shouting at each other and punching in orders on screens only became evident in May when a "flash crash" sent the Dow Jones Industrial Average down nearly 1,000 points in little over 20 minutes with seemingly little news to trigger the collapse.

Regulators have now become highly aware of this technological revolution. In August Mary Schapiro, chairman of the US Securities and Exchange Commission (SEC), the markets regulator, said advances in technology had "opened the door for entirely new types of market professionals" – such as certain breeds of high-speed trading firms – and warned the market structure changes had "raised serious questions and concerns".

Communication networks have played an important role in financial markets since Paul Julius Reuter – founder of the news service – used a new telegraph cable under the English Channel to provide stock exchange prices to brokers in both the UK and continental Europe.

But rather than simply transmit prices rapidly, the networks are now the foundation for a complex network in which computer programmes increasingly do the jobs of a human.

As Mr Spencer observed, demand was growing among brokers for software algorithms that could break up orders and sell them undetected in smaller chunks or react swiftly to market rumours.

Regulations such as the Markets in Financial Instruments Directive (Mifid) three years ago allowed for alternative trading venues such as Chi-X Europe and BATS Europe to flourish. It also required brokers to demonstrate to investors that they were getting the best price for their trade – so-called "best execution".

Brokers became involved in a technological race. Opportunistic traders could attempt to gain small profits by purchasing assets on one platform and immediately selling them on another – but it needed lightning-fast connectivity and firm, accurate prices. They needed the best "smart order routers", effectively black boxes that help send share trades to the best location for the buyer or seller.

Vision of the present: Michael Spencer's future has arrived

Algorithmic trading has grown in the past 10 years to be the dominant source of liquidity on the largest European and US trading venues and alternative trading systems. But for many it came to light only with May's events. An SEC report found that an algorithm used by a mutual fund triggered the crash.

Regulators on both sides of the Atlantic are now questioning whether the technology is distorting the balance between those who can afford the tools and those who cannot.

"We're in a market where almost half of traded volumes are not on the London Stock Exchange," says Alex Walker, head of post trade services for securities at Sungard, the trading technology group. "It means half the time the best prices are elsewhere. Mifid is about how you can really get best execution but it is so difficult and expensive if you're not smart-order-routing. It's getting to the point where sustaining the idea of best execution is a worry for smaller brokers."

The technology poses particular challenges to regulators. Their options include demanding an electronic "audit trail" of trades, monitoring trading patterns, and upgrading regulatory monitoring systems. The SEC has also introduced circuit breakers to regulate unusual price movements.

"Circuit breakers provide a valuable safety valve in global equity markets and I'd support their implementation more broadly," says Phil Allison, global head of cash equities at UBS.

But a consistent regulatory approach may not be easy. The SEC is mandated by Congress to protect investors and the integrity of the market. Driven by Mifid, European markets are mandated to provide effective competition – which made the technological advancements possible.

Richard Balarkas, chief executive of Instinet Europe, the agency brokerage, argues that regulators should not be aiming to capture every bit of information. "It displays a lack of understanding of the market," he says. "If you don't understand how markets move ... you can easily write regulation that makes matters worse."