Market Fragmentation: Does It Really Matter?

Transaction Services

Introduction

Trading environments have evolved considerably as advances in information technology, increased globalization and evolving regulations have lowered barriers to entry and contributed to the growth of multiple trading venues. New-generation technology in particular has enhanced connectivity, lowered costs and with the growth of multiple trading venues, incumbent exchanges are finding themselves in a position of less dominance.

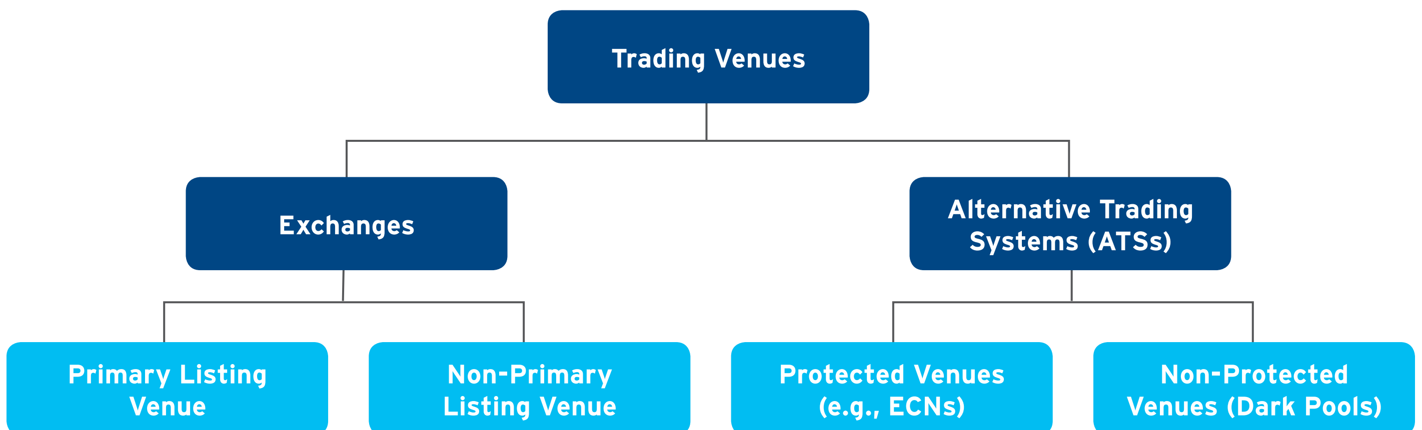
Market fragmentation is not a new phenomenon, and has existed in the United States for many years. What has changed recently is its prevalence as markets are increasingly facilitating execution of orders through different trading platforms. In Europe, the most significant regulatory development to impact market microstructure – and the primary driver of market fragmentation – was the enactment of the Markets in Financial Instruments Directive (MiFID) in 2007.

The prevalence of new microstructure has impacted the way investors and intermediaries trade and posed a number of challenges for regulators. From an issuer perspective, there are questions around what all of this means and how it impacts an issuer's investor relations (IR) strategy. In particular, IROs of companies with an active Depositary Receipt (DR) program are interested in understanding different players in this evolving environment. IROs want to determine if any adjustments are necessary to their strategy, particularly as it concerns their choice of listing venue.

Equity Market Framework

Trading venues can be broadly classified as Exchanges and Alternative Trading Systems (ATSs). In the context of U.S. markets, an Exchange is a securities exchange registered with the U.S. Securities and Exchange Commission (SEC) under Section 6 of the Securities Exchange Act of 1934. Exchanges include NYSE-Euronext, NASDAQ and BATS, and there are 15 securities exchanges currently registered with the SEC. For purposes of this study we will look at exchanges in two categories. The first category is exchanges that act as the primary listing venue for DR programs. This generally includes NYSE and NASDAQ in the U.S. and the London Stock Exchange (LSE) or Luxembourg in Europe. The second category is exchanges that are not primary listing venues, but nevertheless serve as trading platforms for DR programs such as BATs, American Stock Exchange, Boston Stock Exchange, etc.

Equity Market Framework



ATSs include protected venues such as Electronic Communication Networks (ECNs) and non-protected venues such as Dark Pools.

Electronic Communications Networks, or ECNs, are electronic trading systems that automatically match buy-and-sell orders at specified prices such as INET and Bloomberg Trade Book. ECNs register with the SEC as broker-dealers and are subject to market regulations. ATS Subscribers, which are typically institutional investors, broker-dealers and market-makers, can place trades directly with an ECN. Individual investors must have an account with a broker-dealer subscriber before their orders can be routed to an ECN for execution. When seeking to buy or sell securities, ECN subscribers typically use limit orders (an order to buy or sell a stock at a specified price or better). ECNs post orders on their systems for other subscribers to view. The ECN will then automatically match orders for execution. An ECN may choose to facilitate the market maker's compliance with the ECN's obligations under the Commission's Quote Rule by transmitting the ECN's best bid/offer to a national securities exchange for public display.

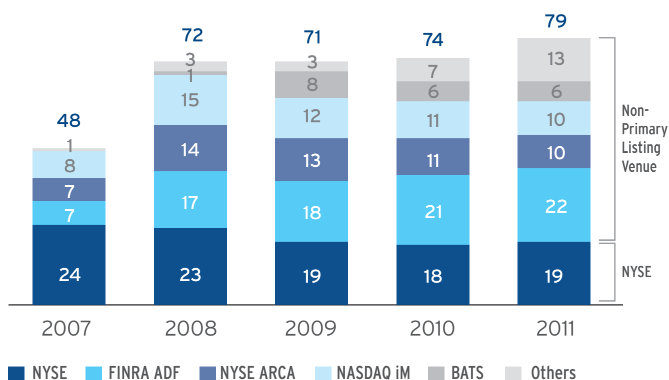
A Dark Pool is the portion of liquidity (trading volume) created by institutional orders that are not openly available to the public. They have been in existence since the late 1980s and were instituted to minimize price change impact by preventing pre-trade information leakage. This quickly made them a popular venue for institutional trading, and soon many platforms both in the U.S. and internationally started to emerge. With the advent of "internalization engines" (a mechanism that matches orders within an institution before sending them to an exchange) and increased speed of execution by early 2000, the U.S. market had developed several block style crossing networks. Today it is estimated that there are over 50 Dark Pools in the U.S. Examples include Citi Match and SIGMA X.

Impact on Depositary Receipt Trading

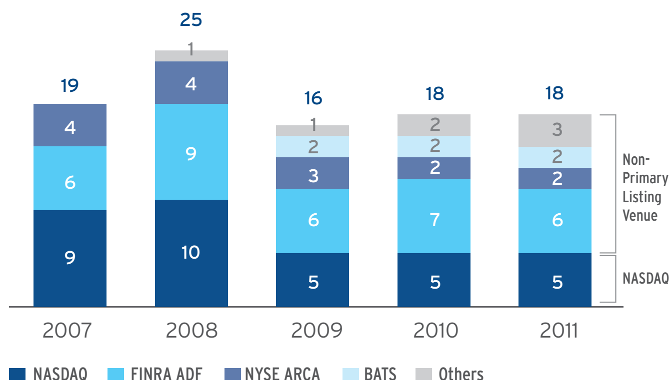
Liquidity

Overall, DR liquidity has grown at an exponential rate. U.S.-listed ADRs traded approximately 130 billion shares in 2011, up 240% from 38 billion shares in 2005. DRs with the NYSE as their primary listing venue account for 85% of the overall liquidity, and DRs with NASDAQ as their primary listing venue account for the remaining 15%. An analysis on liquidity distribution for U.S.-listed ADRs shows that more than 75% of trading volume happens outside the primary listing venue of the stock. This trend appears to be in line with overall U.S. equity markets where the liquidity is quite fragmented. A more in-depth time series analysis (2007 – 2011) shows that liquidity is increasingly being diverted outside the primary listing venue. For instance, in 2007 only 50% of the trading volume was linked to venues other than the primary listed exchange, whereas in 2011 it increased to 75%.

NYSE-Listed ADRs
(Volume in Billions)



NASDAQ-Listed ADRs
(Volume in Billions)



Data Source: Bloomberg Financial Market and Depositary Data Interchange

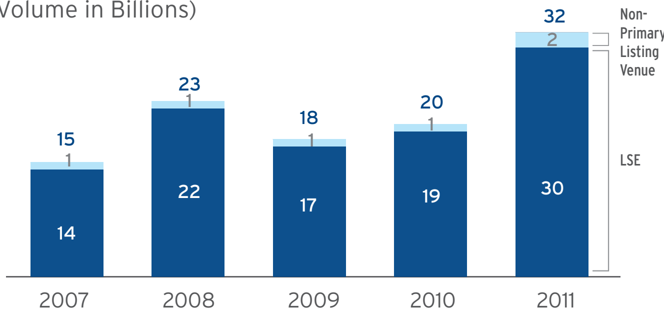
Notes:

1. Results based on sample of top names that account for 70%+ liquidity for NYSE and 85%+ liquidity for NASDAQ.
2. FINRA ADF or FINRA Alternative Display is a facility for posting quotes, and reporting and comparing trades. All Financial Industry Regulatory Authority, Inc. (FINRA) members are eligible to participate in ADF.
3. NYSE ARCA is an exchange owned by NYSE Group.
4. NASDAQ iM (formerly known as NASDAQ's Third Market) is an electronic marketplace where National Association of Securities Dealer (NASD) members could execute trades, communicate, and receive quotations on stocks listed on stock exchanges other than NASDAQ.-
5. Total may not add up due to rounding.

LSE-listed ADRs and GDRs, on the other hand, show a different trend from U.S.-listed ADRs. Based on 2011 data, only 6% of the DR volume was traded on venues other than the LSE. Although the share on alternative trading venues has been increasing over time – for instance, only 1 billion was traded on alternative venues in 2007 compared to 2 billion in 2011 – its share as a proportion of overall trading volume remains low. This trend, though very different from what we see in U.S.-listed ADRs, is in line with the overall trend in European markets where exchanges continue to account for the major share of liquidity.

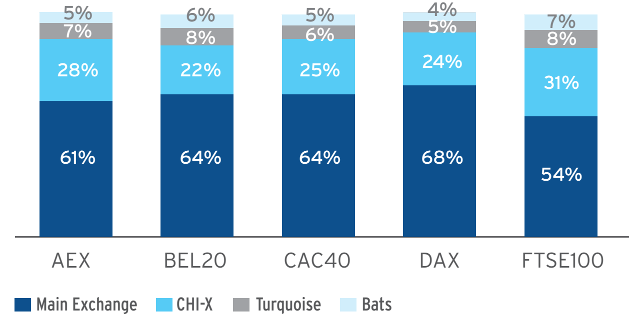
LSE Listed DRs

(Volume in Billions)



Major European Indices

(Volume Distribution)



Data Source: Bloomberg Financial Market and Depositary Data Interchange

Notes:

1. Main exchange includes LSE, XETRA and Euronext.
2. Results based on sample of top names that account for 90%+ of LSE liquidity.
3. Totals may not add up due to rounding.

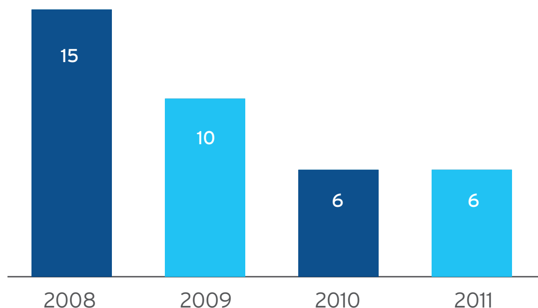
Spreads

The advent of a choice of trading venues in the U.S. has led to increased competition, which in turn has resulted in lower trading costs for investors. One way to quantify this is to look at bid-offer spreads. Wider spreads indicate higher costs, whereas lower spreads indicate an efficient low-cost trading environment. Using bid-offer spreads as a measure of cost, we find that spreads have declined consistently year over year since 2008. Investors have been the biggest beneficiaries of alternative venues, with spreads declining exponentially. Regression analysis shows a very high negative correlation (R^2=0.81) between liquidity of alternative venues and bid-offer spreads, i.e., as liquidity on alternative venues has increased, spreads have come down.

In contrast to U.S. markets, DRs traded on the LSE have not seen spread compression of a comparable magnitude. Moreover, the trend of reduced spreads is not consistent year-on-year. This may be due to very low share of liquidity on alternative venues. MiFID was introduced only in 2007 and it might be some time until we start seeing the impact of alternative trading venues on costs. However, based on experience in the U.S. markets, we expect spreads to continue to decline going forward.

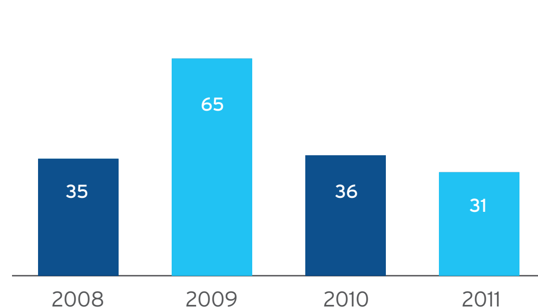
U.S.-Listed ADRs Spreads

(Spread expressed as bps)



LSE-Listed DRs Spreads

(Spread expressed as bps)



Data Source: Bloomberg Financial Market and Depositary Data Interchange

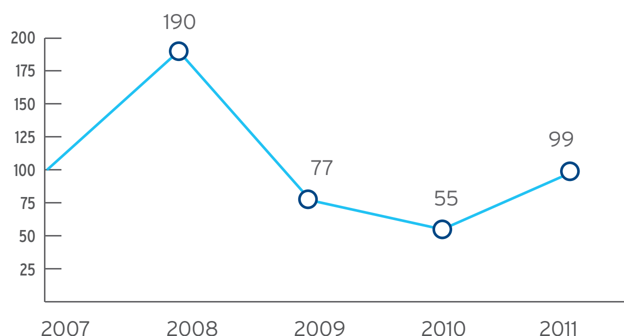
Notes:

1. Spread as bps = Avg Bid-Offer Spread/Avg of Bid and Offer Price

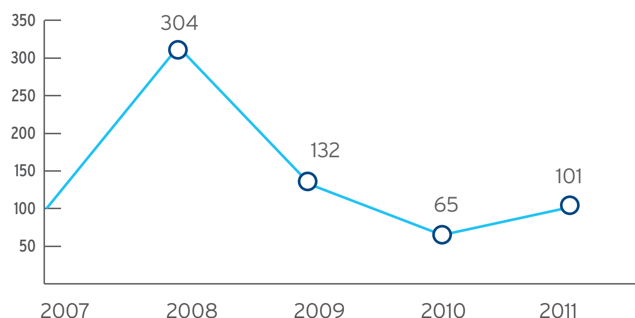
Volatility

We wanted to examine whether market fragmentation has had any impact on volatility. Volatility increases the cost of hedging, and hence it could be argued that any reduction in volatility would ultimately lead to reduced costs. Looking at volatility data of U.S.-listed ADRs and LSE-listed DRs, it is difficult to reach any conclusions on the impact of alternative trading venues on volatility. This is partially due to volatility being impacted by so many larger factors than market micro structure. For example, during the sub-prime crisis in 2008, overall market volatility went up and this was also reflected in volatility of DRs. Similarly, company-specific events will impact volatility. Given this, it is extremely challenging to isolate the impact of multiple trading venues on volatility, and to establish if fragmentation has reduced volatility.

U.S.-Listed ADRs



London-Listed DRs



Data Source: Bloomberg Financial Market and Depositary Data Interchange

Note: Volatility index graphed with reference to 2007, which is the base year and has value of 100.

Trade Transparency

Transparency improves efficiency of price discovery as price quotes and transactions are visible to all participants. It also promotes competition as dealers/market makers are encouraged to post "best price" to attract flows. To promote trade transparency and provide a mechanism for best execution across a multitude of alternate trading venues, Regulation NMS (or Reg NMS — Regulation National Market System) was passed in the United States. Reg NMS includes the Limit Order Display Rule, which requires dealers holding customer limit orders that are equal to or better than current market price, to execute those orders immediately and display them to the market.

Transparency is achieved through Consolidated Tape Association (CTA), which manages Consolidated Quote System (CQS) and Consolidated Tape System (CTS). While CQS provides pre-trade transparency through display of National Best Bid and Offer (NBBO), CTS provides post-trade transparency by providing post-trade data (price, volumes, etc.) for each security.

In Europe, MiFID mandates both pre- and post-trade transparency; however, there is no formal or consolidated data system to centralize the reporting of quote and trade data, and it is incumbent upon the broker to link markets by seeking out the best venues for execution of client orders.

Conclusion

Market fragmentation has largely benefited investors as increased competition has led to lower costs, but it has made it challenging for IROs to understand and adequately evaluate the underlying drivers of their company's liquidity. In the U.S., due to the existence of Reg NMS, investors are generally assured the best possible execution across different venues, so even though there are multiple trading venues in practice they are interacting with one central marketplace. So for IROs, there shouldn't be a need to materially alter their DR program strategy. In an environment where different trading platforms bind together electronically, the decision on choice of listing venue will be driven by strategic factors rather than liquidity concerns.

European markets are different as they have to see the effects of the binding of venues (i.e., integration of market through consolidated data system) to the degree it exists in the U.S. MiFID provides a regulatory framework, but the lack of a consolidating data system is still a hurdle to pre-trade transparency. Given how Reg NMS has aided transparency in the U.S., it is not unreasonable to expect that the EU will adopt a similar mechanism at some point in the future. Market fragmentation will act as a catalyst in that process. For now, given that market fragmentation has not impacted DRs listed in Europe in any material way, IROs need not to be concerned about this affecting their IR strategy.

For more information contact us at:

Issuers

Asia-Pacific
Valentina Chuang
+852-3419-8835
valentina.chuang@citi.com

EMEA
Ayden Dagg
+44-20-7500-5709
ayden.dagg@citi.com

Latin America
Roy Marmelo
+1-212-816-6827
roy.marmelo@citi.com

Intermediaries and Investors

North America
Scott Pollak
+1-212-723-5676
scott.h.pollak@citi.com

EMEA
Michael Woods
+44-20-7500-2030
michael.woods@citi.com

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