

OTCQX:
THE CLEAR ADVANTAGE



ABOUT OXFORD METRICA

Oxford Metrica is a strategic advisory firm, offering informed counsel to boards.

Our advisory services are anchored on evidence-based research in risk and financial performance.

Our work includes statistical analysis and index construction for banks and insurers, risk and performance analytics for asset managers, due diligence support in mergers and highly customised services for corporate boards.



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FOREWORD

To assist corporate executives and boards of directors in deciding where to trade in the US public markets, OTC Markets Group has commissioned an independent study to examine the impact of trading on OTCQX, the top market of the US over-the-counter market, in terms of share liquidity, bid/ask spreads and broker-dealer coverage, as well as investor perception.

Established in 2007 by OTC Markets Group, the OTCQX Best Market is designed to distinguish established and investor-focused US and international companies traded in the US over-the-counter market. Companies traded on OTCQX receive a suite of corporate services designed to increase their visibility and outreach to investors, including wide distribution of company news, financial disclosure and presentations; sponsored real-time Level 2 quotes for investors and eligibility for inclusion in OTCQX Composite Index and other OTCQX indexes.

The companies found on OTCQX are distinguished by the excellence of their operations and diligence with which they convey their qualifications. They range from the securities of large, global issuers like Adidas, Heineken, Roche and Shiseido to well-capitalised US community banks to small and growing US and international companies. As of June 30, 2015, there are 400 companies traded on OTCQX from 20 countries, representing a combined USD \$1.47 trillion in market capitalisation.

OTC Markets Group is delighted to be working with Oxford Metrica to present this study. We hope you can use this study as valuable input when deciding whether go public on the OTCQX market, to upgrade to OTCQX from the OTCQB or Pink markets, or when de-listing from a national stock exchange. Moreover, we look forward to answering your questions about trading on OTCQX, and working with you to assist in maximising your company's trading and visibility in the US public markets.



Jason Paltrowitz
Executive Vice President - Corporate Services
OTC Markets Group Inc. (OTCQX: OTCM)

EXECUTIVE SUMMARY

The aim of this briefing is to provide an independent, evidence-based view of the benefits of trading on the OTCQX market. The view is based on an empirical study of liquidity in the OTCQX market and supplemented by interviews with selected institutional investors.

The primary focus of the empirical study is to evaluate the impact on trading volumes from moving to the OTCQX market. Four dimensions of liquidity are measured: trading volume by number of shares, dollar trading volume, bid-ask spreads and the number of broker-dealers for each security. In each case, the metric of liquidity is analysed across the six months prior to starting trading on OTCQX and compared with the subsequent six months.

The portfolio studied includes the full universe of securities that have traded on the OTCQX market in the last three years and have more than three months' trading experience. The universe includes those currently active on OTCQX, plus those that left to list subsequently on an exchange, or left due to a merger or acquisition. This yields a portfolio of 397 securities with a total market capitalisation¹ of over USD 1 trillion. Presented below are the key results, all of which exhibit strong statistical significance.

KEY RESULTS

1. Trading volume by number of shares increases by 53% on average following a move to the OTCQX market; Figures 1 and 2.
2. Dollar volumes increase similarly by 57% on average; Figures 3 and 4.
3. Bid-ask spreads narrow by 4% on average; Figures 5 and 6.
4. The number of broker-dealers per security rises on average by 16%; Figures 7 and 8.

Institutional investors familiar with OTCQX appear very positive towards the market, citing its information quality and service, and the voluntary openness by members that signals confident management. However, the interviews reveal also that not all investors are so familiar with OTCQX or even aware of its benefits.

The evidence reveals a clear and consistent picture that liquidity is enhanced by a move to the OTCQX market. It is demonstrated that the higher disclosure standards required by OTCQX generate improved transparency and, ultimately, increased liquidity to the benefit of investors, broker-dealers and companies.

¹ Market capitalisation of active securities at 31 October 2015.

INTRODUCTION

The OTCQX is the top tier of three markets organised by OTC Markets Group for trading over-the-counter securities. To qualify for trading on OTCQX, a company must meet high financial standards, demonstrate compliance with United States (US) securities laws, be current in its disclosure and be sponsored by a professional third-party advisor. OTCQX companies, therefore, tend to be more investor-focused than other companies traded over-the-counter, and are characterised by greater financial transparency and timeliness in their disclosures. In choosing the OTCQX market, a company may avoid the high regulatory and legal costs of establishing and maintaining a full listing on one of the large US exchanges.

The critical question prompting the research presented herein is: what is the impact of these higher standards of disclosure on liquidity? To respond with evidence, a study portfolio first is constructed that includes all securities that have traded on the OTCQX market in the last three years and have more than three months' trading experience. This includes securities actively trading on OTCQX, those that left to pursue a full exchange listing, and those that left owing to merger or acquisition. The resultant portfolio encompasses 397 securities with a total market capitalisation² of USD 1.1 trillion. Identification of securities for inclusion is provided by OTC Markets Group. No sampling is undertaken and the study portfolio includes all securities that meet the criteria described.

Next, four dimensions of liquidity are measured and analysed for each security: trading volume by number of shares, dollar trading volume, bid-ask spreads and the number of broker-dealers. The results of these analyses are presented in subsequent sections of this report. All quote data (broker-dealer counts and bid-ask spreads) are sourced from OTC Markets Group and all trade data (prices, volumes, stock splits and dividends) are sourced from the Financial Industry Regulatory Authority (FINRA). The data are adjusted for stock splits and dividends.

In addition to the empirical study, a series of focused interviews with institutional investors has been conducted to gauge prevailing attitudes towards standards of disclosure and active investor-engagement. The interviews were carried out during October 2015 and selected quotes intersperse the quantitative research results.

There has been a noticeable disparity in the extent to which small and large cap companies are involved in an active dialogue with investors. OTCQX provides discipline to such companies.

"Many smaller companies in the US do not embrace the notion of active engagement with investors. We have found that OTCQX companies are the exception and we often encourage firms that we are potentially investing in to consider joining".

- Mutual fund investor

"Smaller cap companies are often a challenge from an information standpoint. Having a greater active engagement with investors sends the right signals to the market which is surely rewarded in a greater following by investors".

- Large asset manager

² Market capitalisation of active securities at 31 October 2015.

IMPACT ON TRADING VOLUMES

This section focuses on the impact on liquidity from joining the OTCQX market. Trading volume activity reflects how rapidly and efficiently information about a firm is disseminated, absorbed and reacted to by investors. Increased levels of trading volume for a security would reflect a higher quality of disclosure, improved information flow, operational efficiency in the market and, ultimately, greater shareholder engagement.

Two metrics of trading volume are constructed and analysed for this study: trading volume by number of shares and trading volume by dollar amount. For each security in the portfolio, trading volumes are analysed for the six months prior to joining OTCQX and for the six months subsequent to joining. The dates on which companies join OTCQX are aligned such that Event Trading Day 0 is the date of joining for all companies. Thus, Day -130 is 130 trading days prior to joining (or six calendar months) and Day 130 represents 130 trading days (six calendar months) after joining.

The trendline in Figure 1 indicates a positive trend for the average trading volume by number of shares; average trading volumes are higher in the six months after joining OTCQX than they were before joining. When tested for statistical significance, the result is found to be strongly significant.³

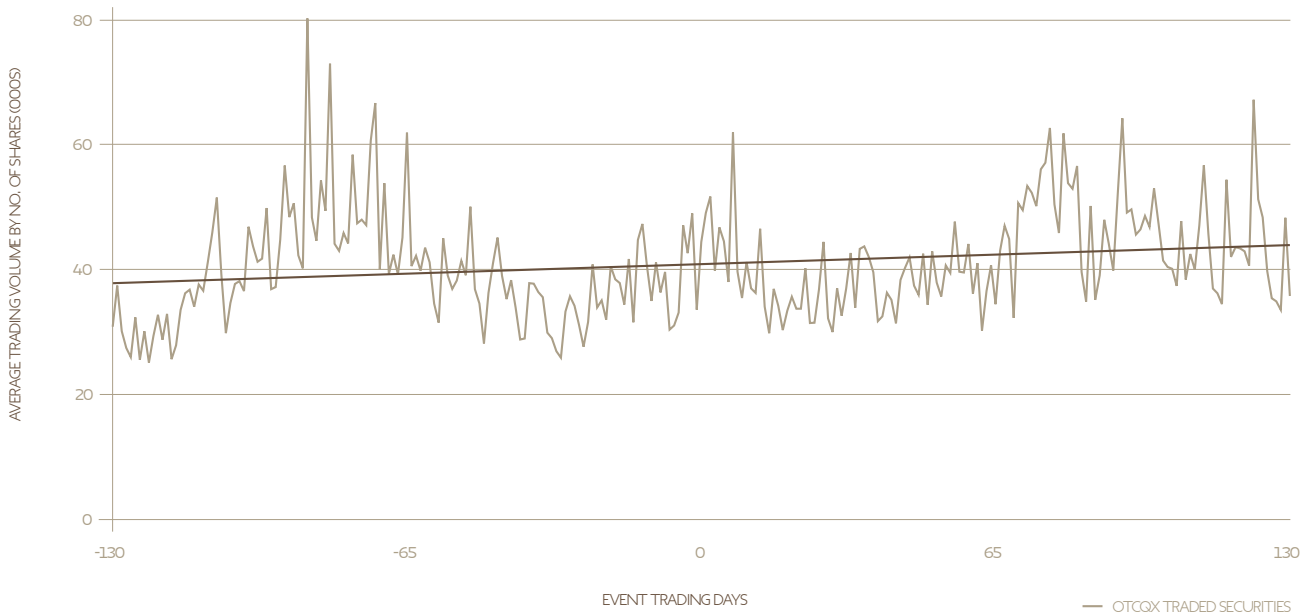
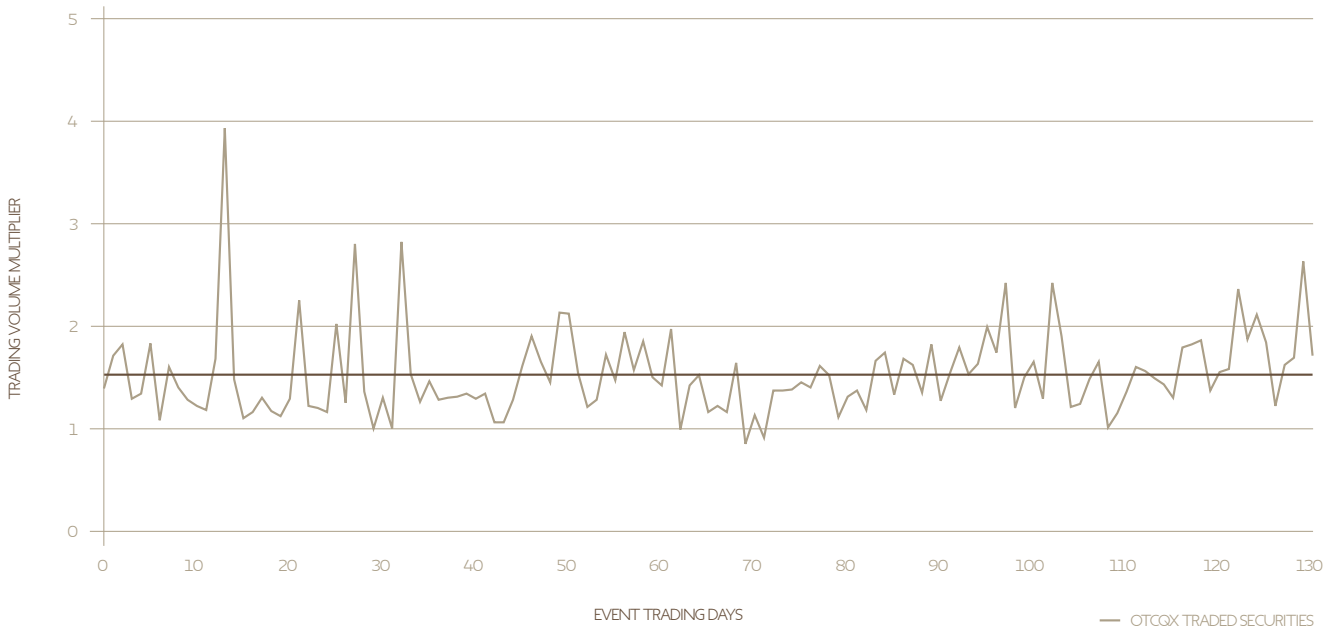


FIGURE 1. Impact on trading volume by number of shares

Where Figure 1 demonstrates that participation in the OTCQX market is associated with significantly higher liquidity, Figure 2 measures the increase. Figure 2 introduces the Trading Volume Multiplier, defined as the multiple of the previous six months trading volume. So a Trading Volume Multiplier of 1 indicates normal trading volumes and no impact on liquidity; any result greater than 1 is evidence of higher liquidity.

³Two-tailed t-test significant at 99% confidence level.



Through the first six months of joining OTCQX, companies experience, on average, a Trading Volume Multiplier of 1.53. This means that companies are enjoying 53% greater liquidity on average since becoming OTCQX members.

When measuring trading volume by dollar amount, the results are consistent. Figure 3 shows a positive trendline, with dollar volumes higher in the six months following joining OTCQX than in the previous six months. The difference in the pre- and post- trading periods again is found to be strongly statistically significant.

FIGURE 2. Trading volume multiplier

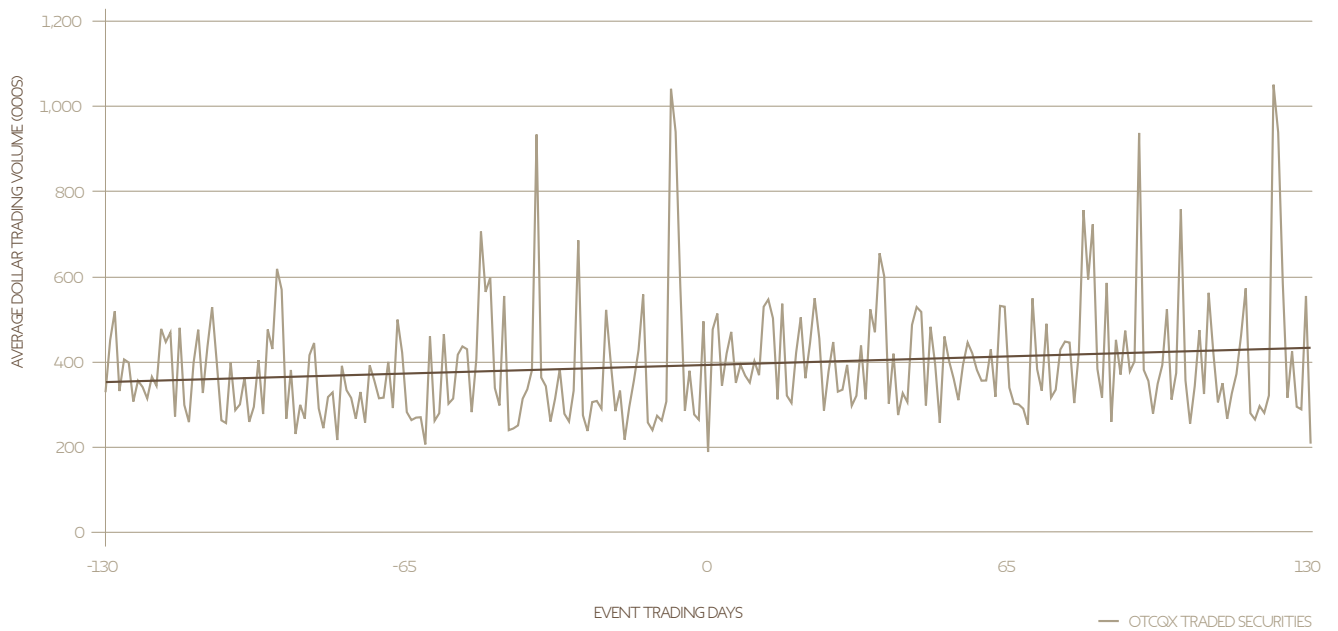


FIGURE 3. Impact on dollar trading volumes

The Dollar Volume Multiplier, depicted in Figure 4, reveals an average increase of 57% in dollar volumes traded in the six months following OTCQX participation, compared with the previous six months.

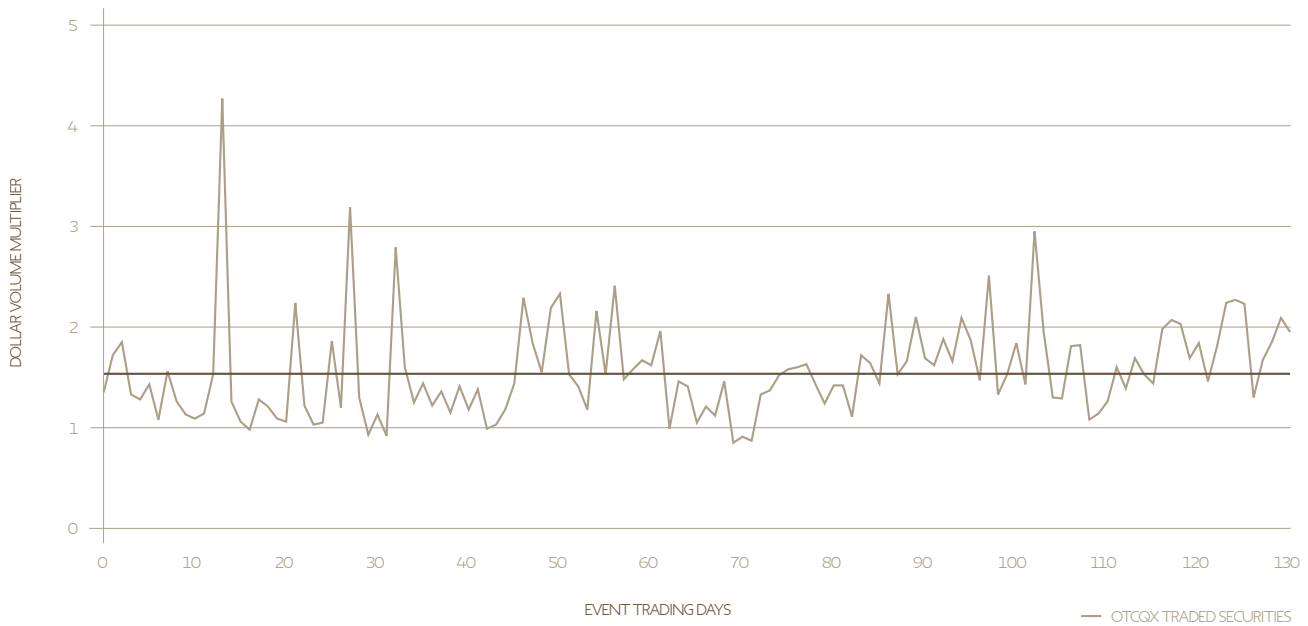


FIGURE 4. Dollar volume multiplier

The analysis of trading volumes provides clear evidence that trading on the OTCQX market is associated with higher liquidity. These increased trading volumes are an outcome of greater transparency in reporting, higher standards of disclosure and improved information flow to investors.

A number of internationally listed companies have opted for OTCQX as an alternative to an NYSE listing. Generally, the response of the market has been positive.

“We have found that OTCQX is a perfect substitute for an NYSE listing for international companies; we receive excellent information without some of the restrictions and costs”.

- Large institutional investor

EVIDENCE FROM BID-ASK SPREADS

An additional way of evaluating liquidity effects is to consider the spread between the bid and ask prices of securities. The dominant factor contributing to bid-ask spreads is liquidity. Securities with greater trading volumes will have narrower bid-ask spreads than those traded infrequently.

Figure 5 reveals a clear downward trendline for the study portfolio, demonstrating a narrowing of spreads from the six months prior to trading on the OTCQX market to the six months subsequent. Moreover, there is found to be a strong statistical significance in this difference in the average spread between the pre- and post- trading periods.

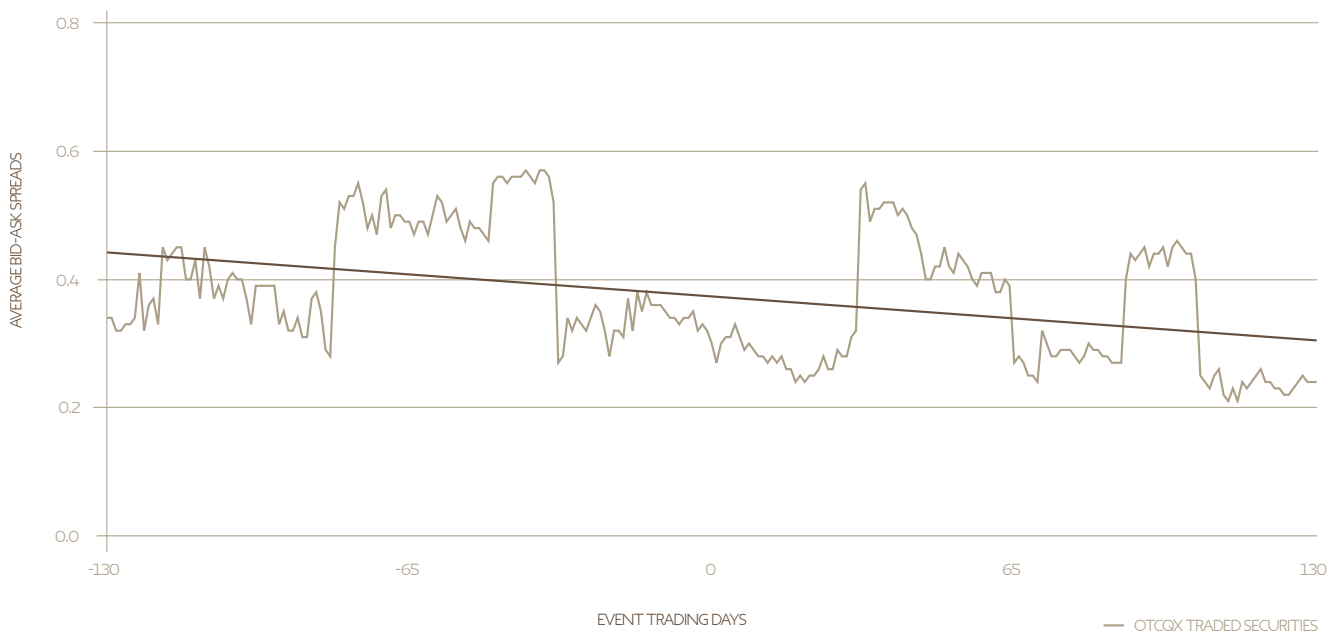


FIGURE 5. Impact on bid-ask spreads

At below 1, the Spread Multiplier depicted in Figure 6 demonstrates that bid-ask spreads have narrowed by an average 4% across securities in the six months since starting trading on OTCQX.

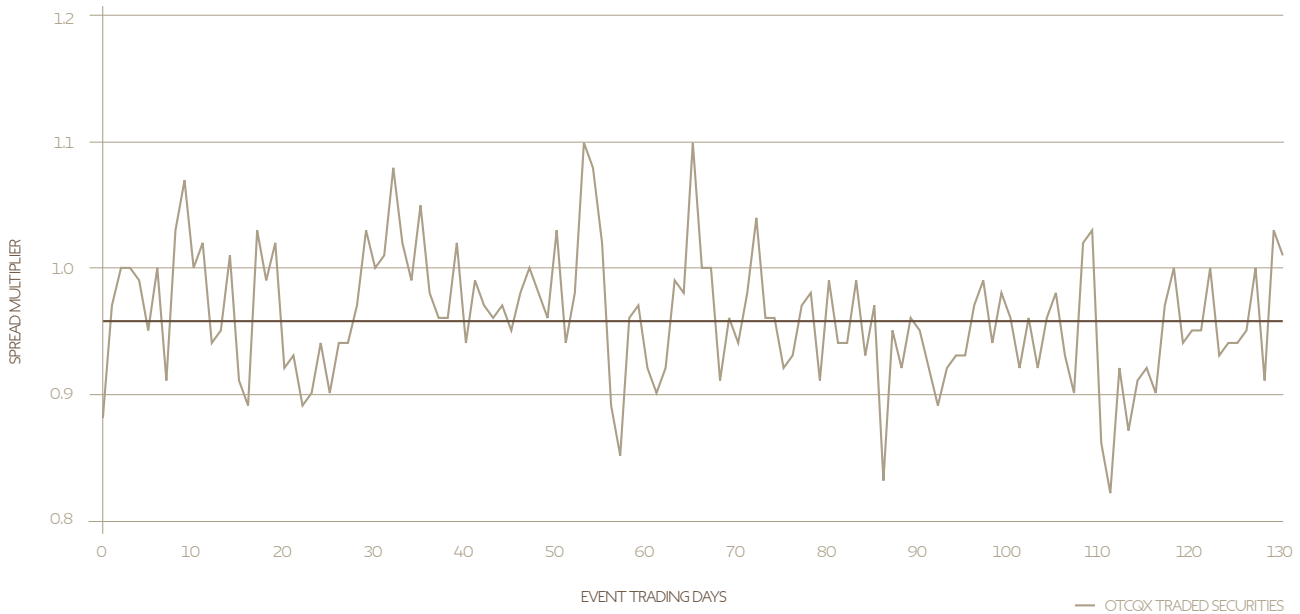


FIGURE 6. Spread multiplier

The results of the spread analysis are consistent with those from the evaluation of trading volume impact: participation in the OTCQX market is associated with greater liquidity.

Smaller financial institutions are realising the benefit of improving their communications with investors. There is a noticeable increase in communication, especially since the financial crisis.

"In our view, smaller community banks could do a lot more to help themselves attract interest. More trading data and more timely information is the way forward for them. OTCQX can provide the right discipline and framework to improve".

- Mid-sized institutional investor

ATTENTION FROM BROKER-DEALERS

The final element of the empirical study is to assess whether there is any discernible effect on the number of broker-dealers from joining OTCQX. It is reasonable to imagine that greater transparency and more efficient information flow may result in more market-makers for a security. The evidence is supportive.

Indicated in Figure 7, is a clear upward trendline for the average number of broker-dealers per security traded on OTCQX, from six months prior to joining the market to six months following joining. As with the earlier results reported, the statistical significance of this difference in the pre- and post- trading periods is strong. At the point of joining (Event Trading Day 0), the immediate impact is pronounced.

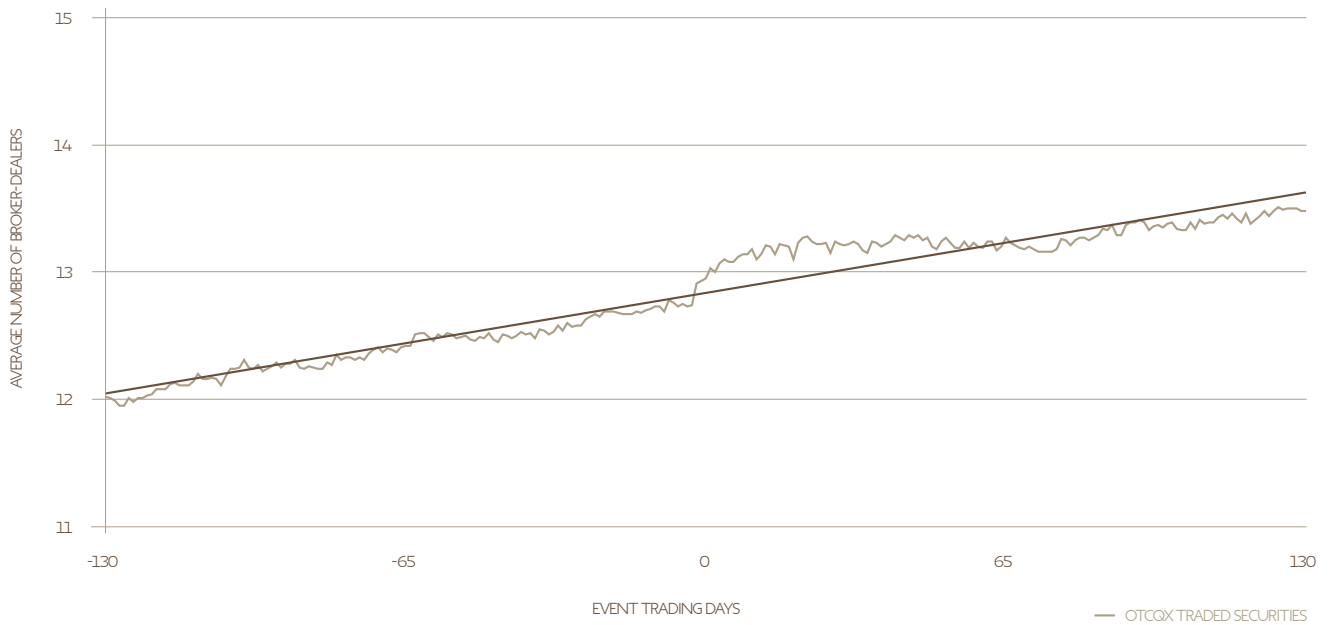


FIGURE 7. Impact on number of broker-dealers

Figure 8 shows the Broker-Dealer Multiplier for the six months subsequent to joining the OTCQX market. The average number of broker-dealers per security is 16% higher in the six months after joining OTCQX than in the six months prior to joining.

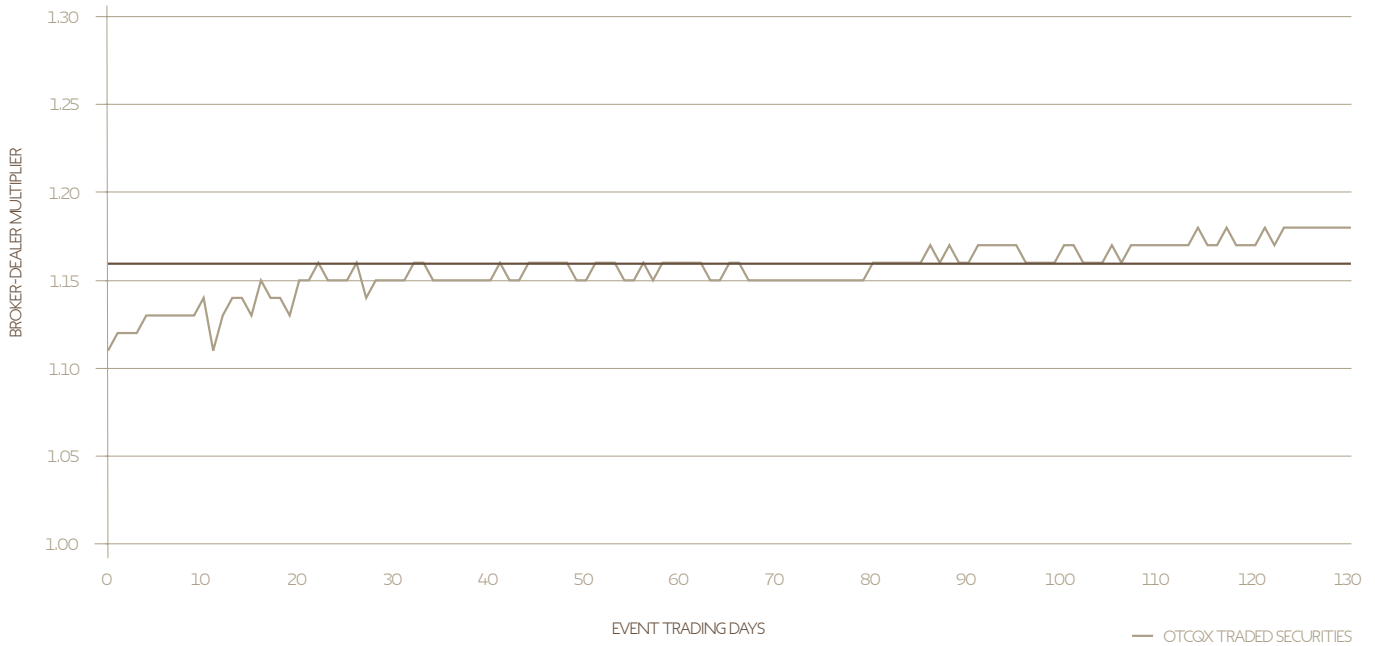


FIGURE 8. Broker-dealer multiplier

Broker-dealers facilitate efficient trading and thereby improve liquidity. Any increase, therefore, to the number of broker-dealers willing and able to hold the shares of a particular security is to the benefit of both companies and investors. The evidence suggests that the information advantages of OTCQX are recognised by broker-dealers. Liquidity is enhanced.

Certain types of assets are subject to limit constraints in the portfolios of many investors and, in some cases, this includes the OTC markets.

“Although we have no specific prohibitions on our investing, in practice we tend to invest only in OTCQX as the premium market place in the OTC Markets range”.

- Mid-sized international asset manager

CONCLUSION

It is demonstrable that there is a clear liquidity advantage to trading on the OTCQX market. The requirements for OTCQX qualification of high financial standards and timely reporting translate directly into increased trading activity, to the benefit of investors, broker-dealers and companies.

This liquidity advantage is appreciated by investors familiar with OTCQX. They recognise the discipline and value of high quality information, timeliness, transparency and service – all at costs significantly lower than would be required by a full listing on a US exchange. However, there would appear to be a number of investors for whom OTCQX is unfamiliar and its benefits either under-appreciated or unknown.

This paper provides an independent assessment of the evidence of the relationship between reporting quality and trading liquidity, using the example of the OTCQX market. It is hoped that the research results will be helpful to companies seeking to enhance the investor experience and to investors looking for higher quality information and service.

As equity markets have internationalised, standards of financial reporting and disclosure have improved around the world. Many companies realise that, to attract investors, they need to go beyond the statutory minimum of local financial reporting rules .

“Although international company reporting has improved in recent years, we find that OTCQX companies are a self-selection of the better reporters. It signals an attitude of openness to US investors”.

- Hedge fund manager

The provision of trading data in both home and US markets in a user friendly way has given OTCQX an edge with international investors.

“We find the OTCQX service superb and the market information reported is essential for our trading”.

- Investment manager

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