

MARKET QUALITY INDICATORS

ASX Equities, ETFs and Index Futures

*By Dr. Andrew Leone & Steven Lecce
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in association with



ASX

AUSTRALIAN SECURITIES EXCHANGE

INTRODUCTION

Welcome to this first edition of *Market Quality Indicators*.

Market Quality Indicators has been developed to:

- Provide a quantitative overview of the trading activity and market dynamics of ASX equities and equity index ETFs and futures; and
- Highlight the extent of trading opportunities available on ASX as well as provide insights into the associated transaction costs.

This report, prepared by Dr Andrew Lepone and Steven Lecce from the Discipline of Finance at the University of Sydney, is the first of a bi-annual series and should be of interest to both global and Australian institutions that employ a quantitative approach to trading.

I trust you will find these statistics useful in assessing the opportunities that ASX might present to your organisation. If you have further research topics you would like us to undertake, please contact me directly or your local account manager (contacts on back page).

Regards



Richard Murphy
General Manager, Equity Markets



THE COMPANY

As one of the world's top 10 listed exchange groups, measured by its market capitalisation, the ASX group was created through the merger of Australian Stock Exchange Limited and SFE Corporation Limited, the holding company for the Sydney Futures Exchange.

The ASX group (to operate under the rebranded Australian Securities Exchange banner) is a broad based financial services group that operates Australia's leading securities and derivatives markets. The ASX group includes Australian Stock Exchange Limited, Sydney Futures Exchange Limited, and Austraclear Limited. ASX spans the equity, interest rate, commodity and energy markets and offers a full range of listing, trading, clearing, depository, settlement and market data services.

Its diverse domestic and international customer base ranges from issuers of a variety of listed securities, corporates, investment banks, trading banks, fund managers, hedge funds, CTAs, proprietary and retail traders who require the capital formation, risk transfer and price discovery services that ASX offers, as well as the functions that ASX provides as a market operator, supervisor, central counterparty clearer and payments system facilitator.

More information on ASX can be found on our website www.asx.com.au

ASX Equities, ETFs and Index Futures

Dr Andrew Lepone and Steven Lecce

EXECUTIVE SUMMARY

The purpose of this booklet is to provide up-to-date semi-annual statistics that enable global institutions to evaluate trading opportunities in ASX equities and index futures. These statistics are provided for the (i) underlying securities of the S&P/ASX 200 Index; (ii) SPDR S&P/ASX 200 (STW); and (iii) *ASX SPI 200[®] Index Futures*. The key findings for the financial year ending June 30, 2009 are as follows:

(i) Underlying securities of the S&P/ASX 200 Index

Trading activity during the financial year ending June 30, 2009 in the underlying securities of the S&P/ASX 200 Index increased both from 2007 and 2008. From 2008 to 2009, daily traded volume increased by 42%, turnover increased by 37%, while traded value (\$AUD) decreased by 21%. Over the same period, the average bid-ask spread has increased by 57%, the average market depth at the best five quotes decreased by 25% and price impact increased by at least 52% across all trade sizes. Despite market-wide declines in 2008 which have led to an increase in transactions costs, trading activity remains high with opportunities for investors to trade in a market without the need to search for counterparties.

(ii) SPDR S&P/ASX 200 (STW)

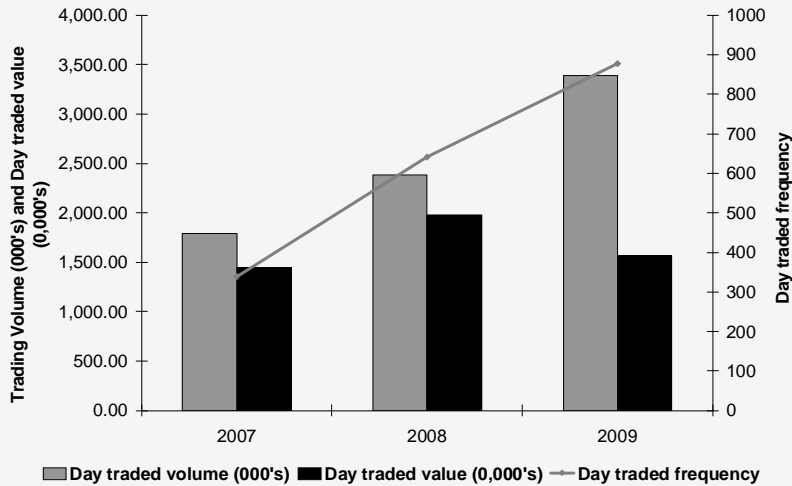
The SPDR S&P/ASX 200 (STW) is an exchange-traded fund (ETF) that offers exposure to the returns of the S&P/ASX 200 Index. From 2008 to 2009, the number of trades, volume transacted and dollar value increased by 227%, 151% and 68% respectively. The increased trading activity in the SPDR S&P/ASX 200 was met by a 75% increase in average market value of depth at the best five quotes. Over the same period, the average bid-ask spread fell by 16% and price impact fell for all trade sizes by at least 15%. This reduction in transaction costs highlight that the SPDR S&P/ASX 200 provides an efficient way for investors to obtain exposure to the Australian equities market index.

(iii) *ASX SPI 200[®] Index Futures*

The average bid-ask spread narrowed to 1.2 index points in the June quarter 2009, representing AUD30.65 or 3 one-hundredths of one percent of contract value. Over the same period, there were an average of 10 lots available at the bid and 17 lots available at the offer which is more than sufficient to accommodate the average trade size during day sessions (2 lots). The weekly average absolute tracking error of returns on the nearest expiry month contract against the S&P/ASX 200 accumulation index ranged from 10 to 51 one-hundredths of one percent over the six quarters to June 2009. These low and stable tracking errors demonstrate that *ASX SPI 200[®] Index Futures* provide an efficient way for investors to obtain Australian equities market index exposure synthetically. Overall, *ASX SPI 200[®] Index Futures* continue to provide an efficient way for investors to obtain Australian equities market index exposure synthetically.

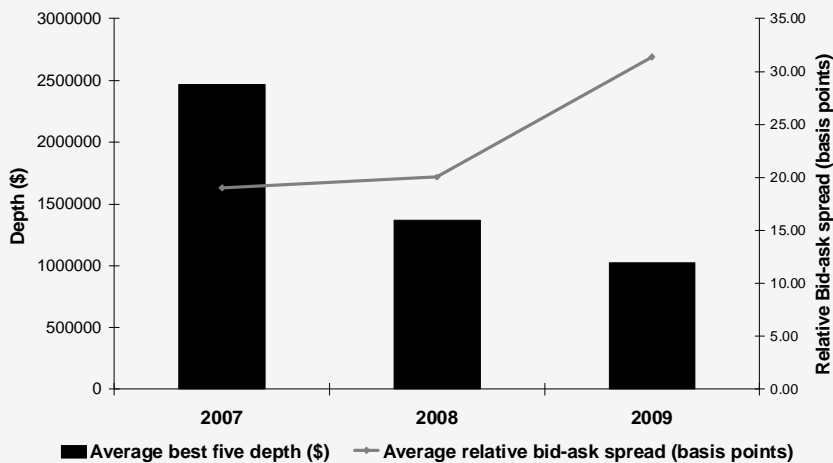
S&P/ASX 200 securities

1. Trading activity



During the financial year ending July 2009, trading volume and day traded frequency in the underlying securities of the S&P/ASX 200 Index increased by 42% and 37%, respectively from 2008. At the same time, traded value (AUD) fell by 21%, primarily driven by the 41.3% decline in the S&P/ASX 200 Index during 2008. Despite market-wide declines, increases in trading volume and turnover represent a large increase in trading activity and provides opportunities for investors to trade in a market without the need to search for counterparties.

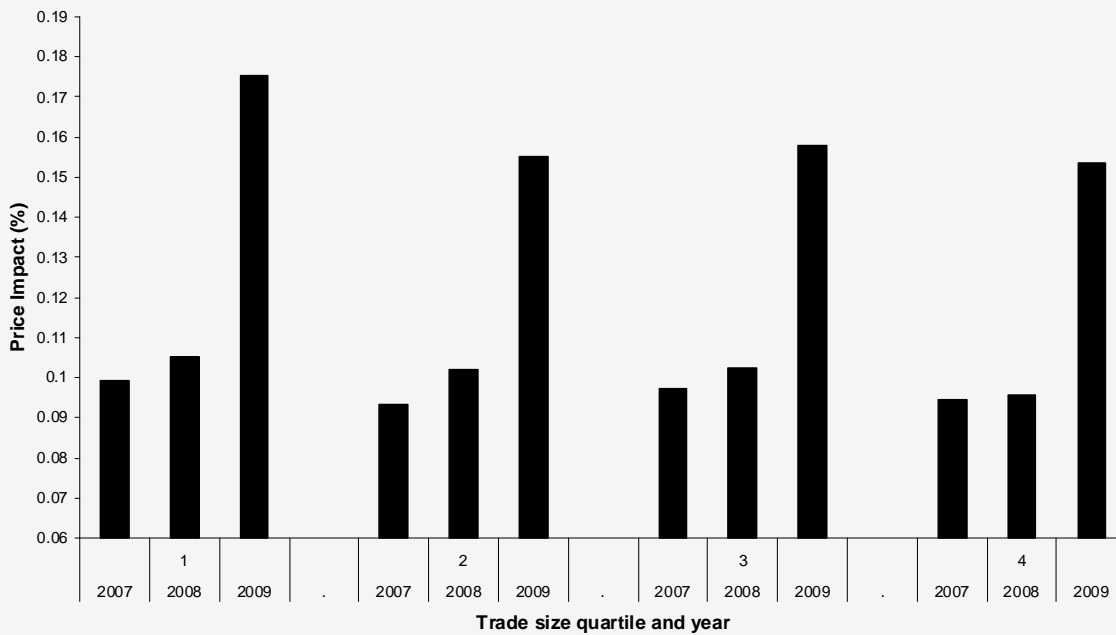
2. Market Depth and Bid-ask spreads



The increased trading activity has been met by a 25% decrease in the average market depth at the best five quotes from 2008 to 2009. Over the same period, the average bid-ask spread has increased by 57% which represents an 11.35 basis point increase from 20.04 basis points in 2008, to 31.39 basis points in 2009. The declines in market depth and increase in spreads represent an increase in global uncertainty due to the global financial crisis.

S&P/ASX 200 securities (continued)

3. Price Impact

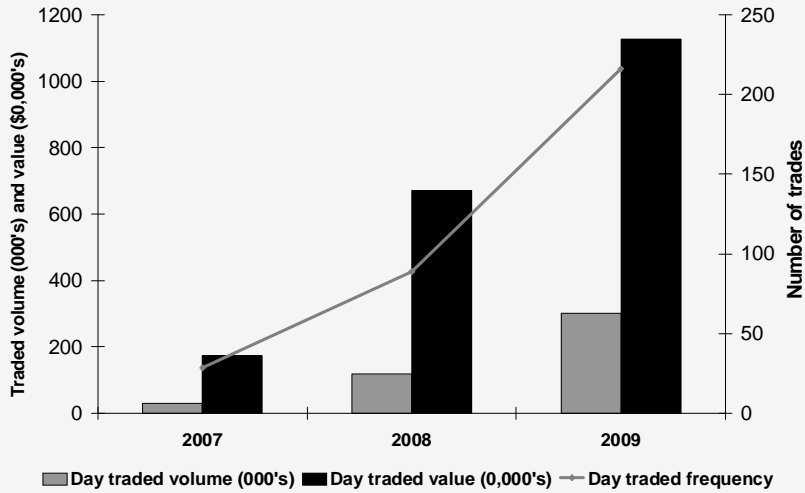


Note: Quartile 1 represents the largest trades, which are in the top 25% of all trades for that particular security. Quartile 4 represents the smallest trades, which are in the bottom 25% of all trades for that particular security. Price impact is a transaction cost measure that examines the impact that different sized trades have on market depth and provides an estimate of the transaction cost incurred by different trade sizes. This measure captures both the bid-ask spread and the amount of liquidity present in the limit-order book immediately before each trade.

The price impact for the underlying securities of the S&P/ASX 200 Index was increased by at least 52% across all trade sizes from 2008 to 2009. This reflects an overall decline in liquidity for the underlying securities of the S&P/ASX 200 Index which is consistent with the increase in bid-ask spreads and lower market depth during 2009.

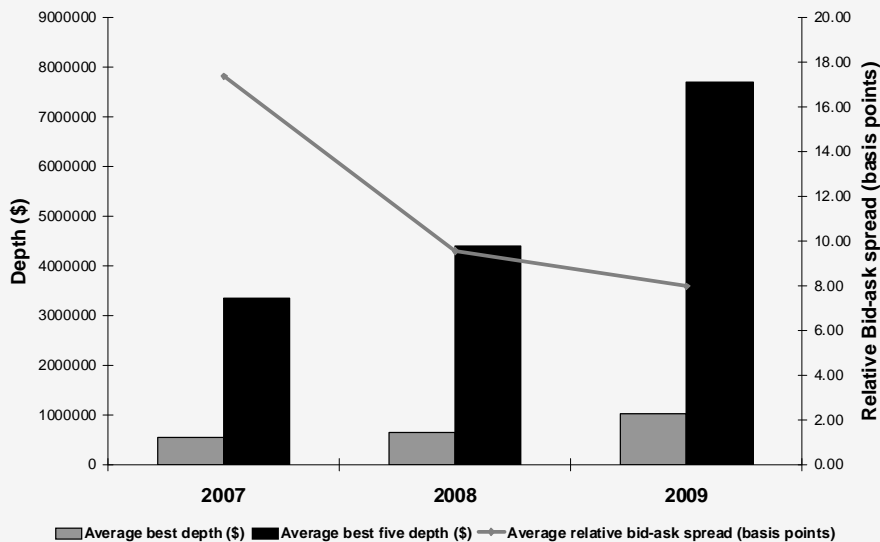
SPDR S&P/ASX 200 FUND (STW)

1. Trading Activity



The SPDR S&P/ASX 200 (STW) is an exchange-traded fund (ETF) that offers exposure to the returns of the S&P/ASX 200 Index. The number of trades, volume transacted and dollar value in STW increased by 227%, 151% and 68% respectively from 2008 to 2009. Importantly, this increase occurred while there was a significant decline in the trading of the underlying securities in the S&P/ASX 200 Index. The increased trading activity in STW represents the increased liquidity present in the SPDR S&P/ASX 200 and its increased popularity over the past 3 years.

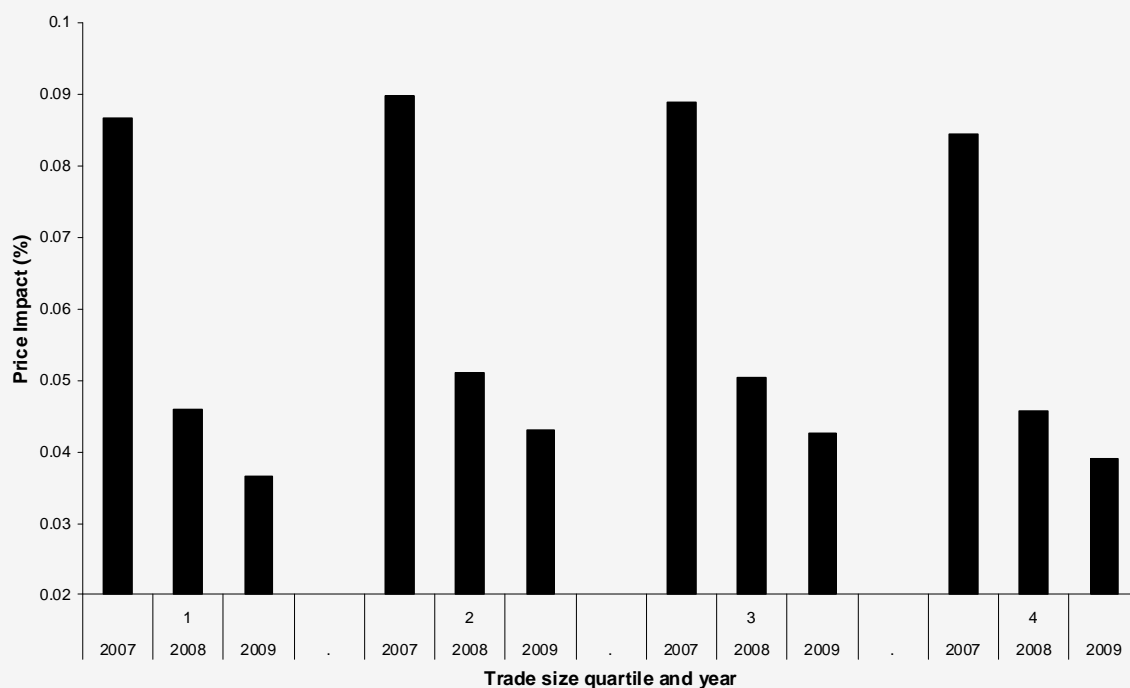
2. Market Depth and Bid-ask spreads



The increased trading activity in the SPDR S&P/ASX 200 from 2008 to 2009 is met by a 75% increase in average market value of depth at the best five quotes. The average bid-ask spread fell by 16%, from 9.56 basis points to 8.00 basis points, over the 2008 to 2009 period.

SPDR S&P/ASX 200 FUND (STW)(continued)

3. Price Impact

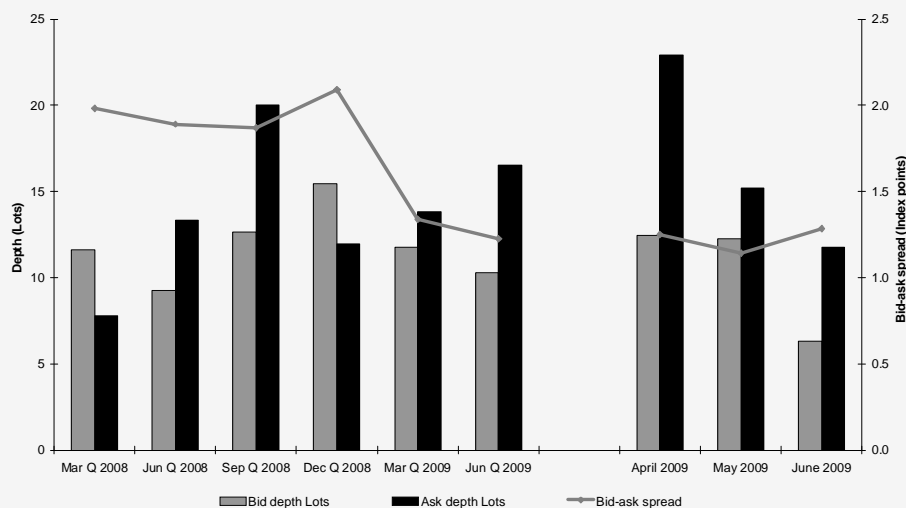


Note: Quartile 1 represents the largest trades, which are in the top 25% of all trades for that particular security. Quartile 4 represents the smallest trades, which are in the bottom 25% of all trades for that particular security. Price impact is a transaction cost measure that examines the impact that different sized trades have on market depth and provides an estimate of the transaction cost incurred by different trade sizes. This measure captures both the bid-ask spread and the amount of liquidity present in the limit-order book immediately before each trade.

Price impact in the SPDR S&P/ASX 200, from 2008 to 2009, has fallen by a minimum of 15% for all trade sizes. Price impact results demonstrate that transaction costs in the SPDR S&P/ASX 200 have reduced significantly over the 2008 to 2009 period. The reduction in transaction costs highlight that the SPDR S&P/ASX 200 provides an efficient way for investors to obtain exposure to the Australian equities market index. This is reflected in the large increases in trading activity over the past 3 years.

ASX SPI 200[®] Index Futures

1. Transaction Cost Indicators



The average market depth at the best bid in the nearest expiry month contract remained at similar levels in the June quarter 2009, compared to the same quarter of the previous year, while market depth at the best ask increased. The ASX 200 index during the most recent quarter ranged from a low of 3581 points to a high of 4060 points. There were an average of 10 lots available at the bid and 17 lots available at the offer during the June quarter 2009. This level of liquidity is more than sufficient to accommodate the average trade size during day sessions (2 lots). The average bid-ask spread narrowed to 1.2 index points in the June quarter 2009, representing AUD30.65 or 3 one-hundredths of one percent of contract value. The cost of trading *ASX SPI 200[®] Index Futures* continues to be low.

2. Tracking Error

	Mar Q 2008	Jun Q 2008	Sep Q 2008	Dec Q 2008	Mar Q 2009	Jun Q 2009	Apr Q 2009	May Q 2009	Jun Q 2009
Mean of $R_{AP} - R_{cash}$									
Weekly (%)	0.26	0.15	0.24	0.51	0.26	0.10	0.12	0.06	0.15
Daily (%)	0.13	0.10	0.13	0.30	0.16	0.10	0.11	0.08	0.12
Standard deviation of $(R_{AP} - R_{cash})$									
Weekly (%)	0.34	0.11	0.27	0.68	0.24	0.10	0.15	0.03	0.11
Daily (%)	0.17	0.13	0.17	0.36	0.20	0.13	0.13	0.12	0.15

The weekly average absolute tracking error of returns on the nearest expiry month contract against the S&P/ASX 200 accumulation index ranged from 10 to 51 one-hundredths of one percent over the six quarters to June 2009. Alternatively, the week-to-week variability (standard deviation) of the difference in returns between the nearest expiry month contract and the S&P/ASX 200 accumulation index ranged from 10 to 68 one-hundredths of one percent. These low and stable tracking errors demonstrate that *ASX SPI 200[®] Index Futures* provide an efficient way for investors to obtain Australian equities market index exposure synthetically.

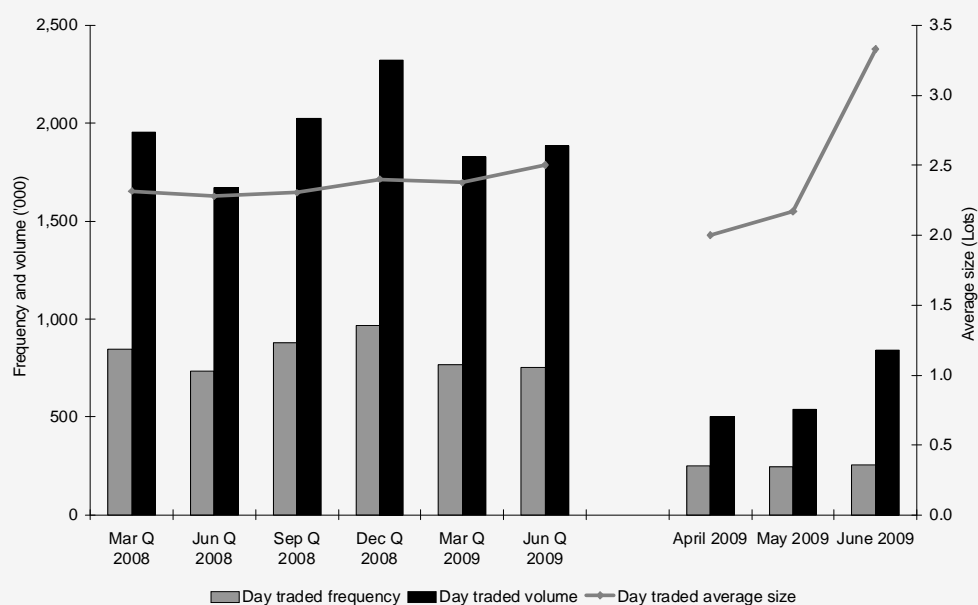
ASX SPI 200® Index Futures (continued)

3. Volatility

	Mar Q 2008	Jun Q 2008	Sep Q 2008	Dec Q 2008	Mar Q 2009	Jun Q 2009	Apr 2009	May 2009	Jun 2009
Standard deviation of return									
Weekly (%)	3.21	2.65	3.00	6.66	4.51	2.43	2.34	2.89	1.75
Daily (%)	1.93	1.13	1.75	2.97	1.52	1.39	1.43	1.35	1.45
Average range (Index points)									
Monthly	802	492	550	966	532	309	303	281	342
Weekly	353	254	298	480	233	197	195	191	206
Daily	175	114	153	219	103	87	89	92	81

Price volatility on the nearest expiry month contract decreased in the June quarter 2009 relative to both the December and March 2009 quarters. The unusually high price volatility in the December and March 2009 quarters resulted from global uncertainty as well as the credit crisis which had a rippling effect on the Australian market. The average daily price range of 89 index points for the June quarter 2009 represents AUD 2,179 of contract value or 27 percent of the initial margin effective from 19 February 2009. While price volatility has fallen, the index price range still provides profit-making opportunities for traders with a short-term (intraday) trading horizon.

4. Trading Activity



The number of trades and volume transacted during day sessions in the nearest expiry month contract remained at similar levels in the June quarter 2009 relative to the same quarter of the previous year. The average trade size during day sessions remained constant at approximately 2 lots in the June quarter 2009. This trading frequency seen in *ASX SPI 200® Index Futures* reflects that counterparties are promptly found and effectively reduces the component of execution cost that occurs due to delays in trade execution.

NOTES

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