

Auction Volume Report: Asia

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Tethys Technology, Inc. Research@TethysTech.com www.TethysTech.com +1 212 509-5600 +(44) 20 3608 7555

Tethys Auction Volume Report is an independent analysis of auctions in global equity markets. This report includes current and historical auction data. It also includes factor cross-section analysis. The report features a subset of the data and analysis that contributes to the success of our award-winning settlement price benchmark **ECLOS** algorithm.

For the purpose of this report, the phrase 'auction' refers to both auction and cross based market open and close mechanisms. The term "auction volume %" is the auction volume as a percentage of total daily volume.

Auction Volume % = Auction volume on the primary exchange / Total traded volume across all venues

This report utilizes both the straight median and the notional weighted average in measuring auction volume. The difference provides an insight into the auction participation divergence in the liquidity spectrum. To manage the noise of the data, we filter the equities by putting the minimum median auction volume of 500 shares and 1,000 shares for opening and closing auction, respectively.

This report covers major listing exchanges in the Asia. Table 1 below presents the current three-month straight median and notional weighted auction data.

| | Daily Median Closing Auction Volume % (Changes)* | Daily Notional Weighted Closing Auction Volume % (Changes) | Daily Median Opening Auction Volume % (Changes) | Daily Notional Weighted Opening Auction Volume % (Changes) |
|-------------------|-----------------------------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------|
| ASX (AUSTRALIA) | 9.42% - <mark>0.66%</mark> | 24.88% -0.48% | 3.15% +0.32% | 3.10% +0.55% |
| HKG (HONG KONG) | 2.54% -0.23% | 6.96% - <mark>0.37%</mark> | 0.33% - <mark>0.00%</mark> | 1.26% +0.11% |
| KRX (SOUTH KOREA) | 2.75% - <mark>0.68%</mark> | 6.66% - <mark>2.16%</mark> | 0.89% - <mark>0.16%</mark> | 1.60% - <mark>0.17%</mark> |
| KST (SOUTH KOREA) | 2.02% -0.43% | 2.42% -0.71% | 1.00% - <mark>0.20</mark> % | 1.42% -0.17% |
| SGX (SINGAPORE) | 6.02% +0.87% | 14.74% +0.97% | 1.19% +0.05% | 2.49% - <mark>0.11%</mark> |
| TAI (TAIWAN) | 4.63% -0.57% | 2.85% -0.83% | 1.45% - <mark>0.17%</mark> | 2.50% -0.10% |
| TOK (JAPAN) | 11.67% +2.65% | 15.79% +3.14% | 4.24% - <mark>0.11%</mark> | 5.03% - <mark>0.13%</mark> |

* The term "Daily Auction Volume %" denotes the 4 auction volume % metrics presented in Table 1.

* Change in Daily Auction Volume % = Daily Auction Volume % of the past month – Daily Auction Volume % of the 6 months before the past month.

* KRX (South Korea): Korea Stock Exchange

* KOS (South Korea): KOSDAQ

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Closing Auction Volume % Trend by Country

We use two metrics to demonstrate the evolution of auction volume over time: weekly notional weighted average closing auction volume % and weekly median closing auction volume %. The first metric measures the average auction volume % of the entire country or exchange symbol universe on weekly basis with the value being weighted by each security's daily notional traded value. The latter calculates the median auction volume % of entire country or exchange symbol universe on weekly basis.

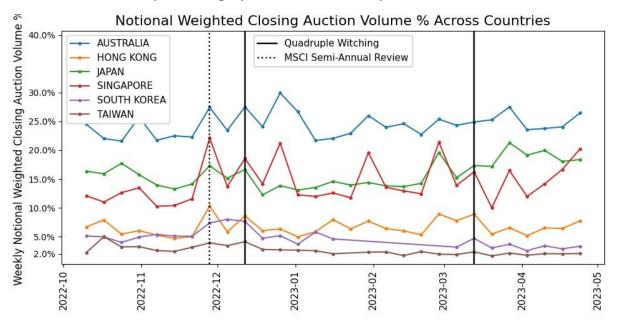


Figure 1

AUSTRALIA Quadruple Witching Weekly Median Closing Auction Volume % 20.0% HONG KONG MSCI Semi-Annual Review **IAPAN** SINGAPORE SOUTH KOREA 15.0% TAIWAN 10.0% 5.0% 2.0% 2023-02 2023-03 2023-05 2022-10 2022-11 2022-12 2023-01 2023-04

Median Closing Auction Volume % Across Countries

Figure 2

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