

Auld Lang Syne, 2019

Should year-end trading volatility be forgot, we bring them now to mind

Typically, trading volumes taper off as the year ends but 2018 still had some surprises in store. This review highlights observable trends in both market volumes and transaction costs in North America, EMEA and the Asia Pacific regions over the last two weeks of the year.

Globally, institutional managers continued to favor smaller order sizes over the course of 2019, despite an elevated volume in North America following the quad-witch. Our previous data-driven insight, to think small, still holds true and the data suggests avoiding outsized orders in the weeks leading up to 2020.

Note: To normalize for differences in calendar days, we started from the last day of the month and labeled the days in reverse order.

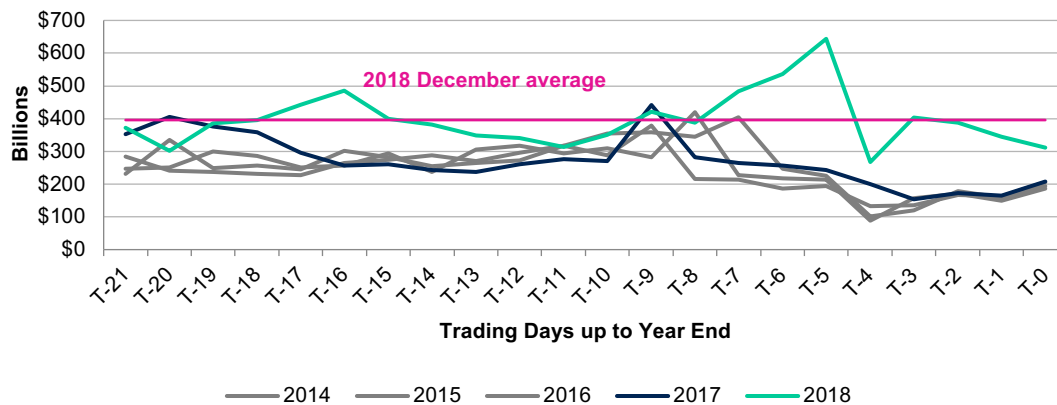
Year-End Market Volumes

Historically, we observe a year-end drop in volumes when many Portfolio Managers and Traders take time away for the holiday season—2018's surprise volatility left many scrambling to keep up.

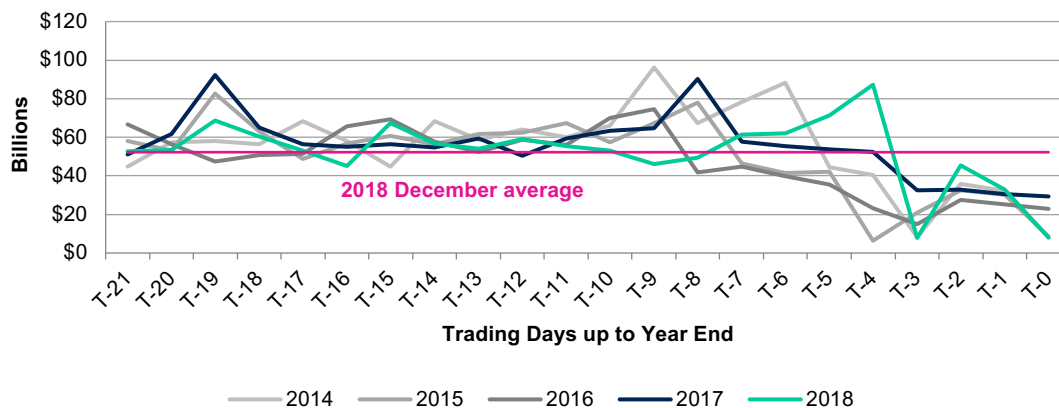
- In North America, volumes typically drop-off following the year-end quad-witch (QW) but in 2018 they remained elevated as volatility spiked.
- European markets also experience a drop-off following the QW though this has been decreasing year-over-year.
- Asia Pacific continues to be less affected by a seasonal slowdown exhibiting no material volume drop-off.



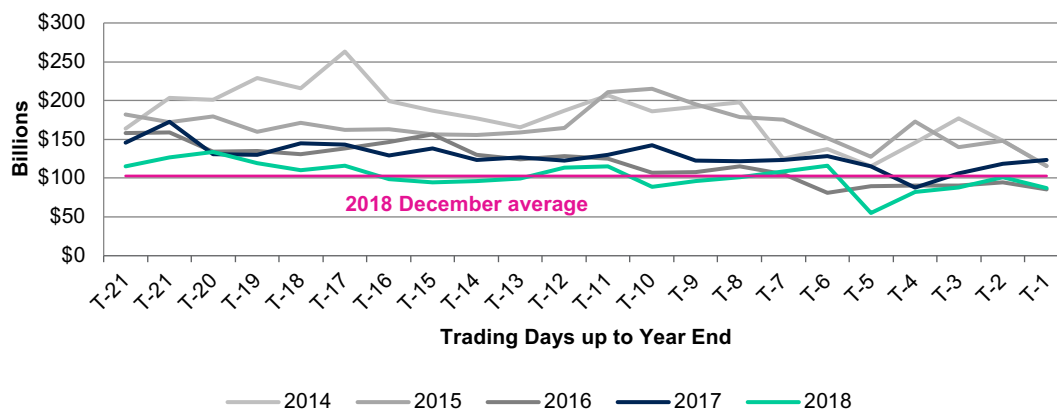
North America Dollar Volume



EMEA Dollar Volume



APAC Dollar Volume



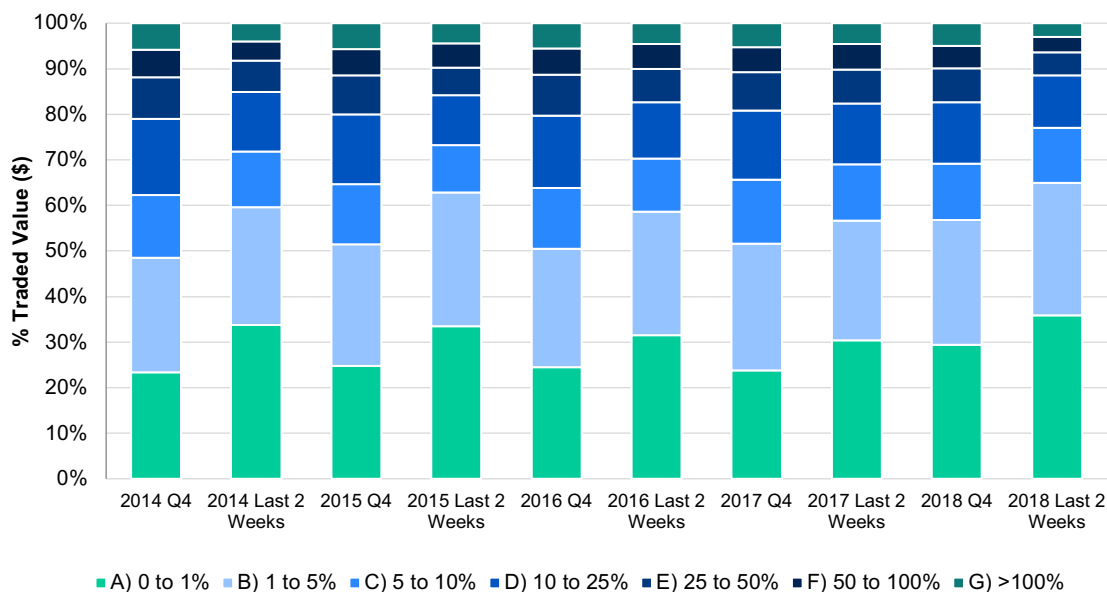


Buy-Side Order Sizes

We supplemented actual market volumes with Virtu Analytics' Global Peer database¹ to decipher whether institutional manager and trader behavior changed in the last two weeks of December

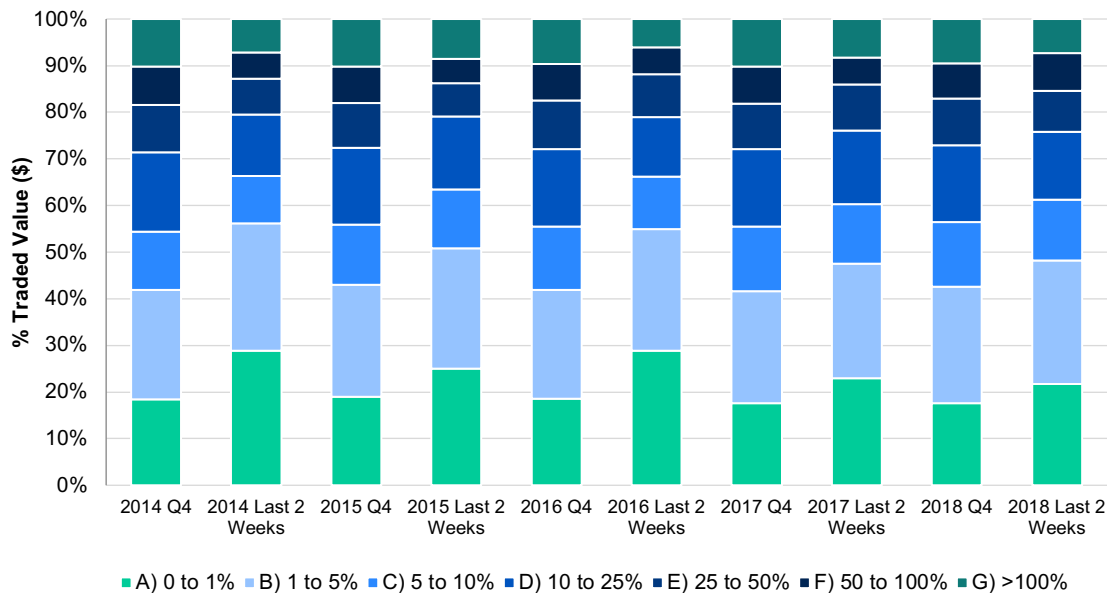
- North American market volumes remained relatively flat at the end of 2018 and followed a similar trend seen in prior years—where small order sizes (orders between 0 and 1%) were used 6% more in the last two weeks versus the whole of Q4. There is also less demand for outsized liquidity (orders > 50%) which made up only 6% of total peer volume in the last two weeks compared to 10% in Q4.
- Like North America, smaller order sizes were also used more frequently by the European buy-side—orders less than 5% MDV increased in use to 48% of total volume in the last two weeks versus 43% in Q4 2018.
- While volumes remained more in-line towards the end of the year in Asia Pacific, we saw a similar decrease in liquidity demand from institutional managers as orders less than 5% MDV, went from a total notional of 38% to 43% over the last two weeks.

Order Size Distribution - North America

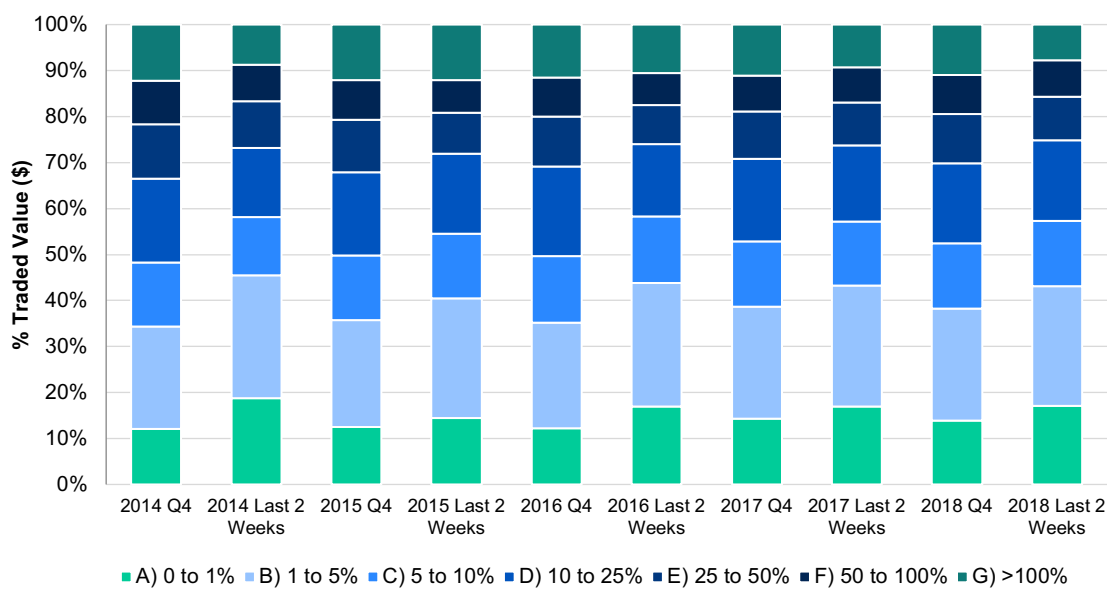




Order Size Distribution - EMEA



Order Size Distribution - APAC



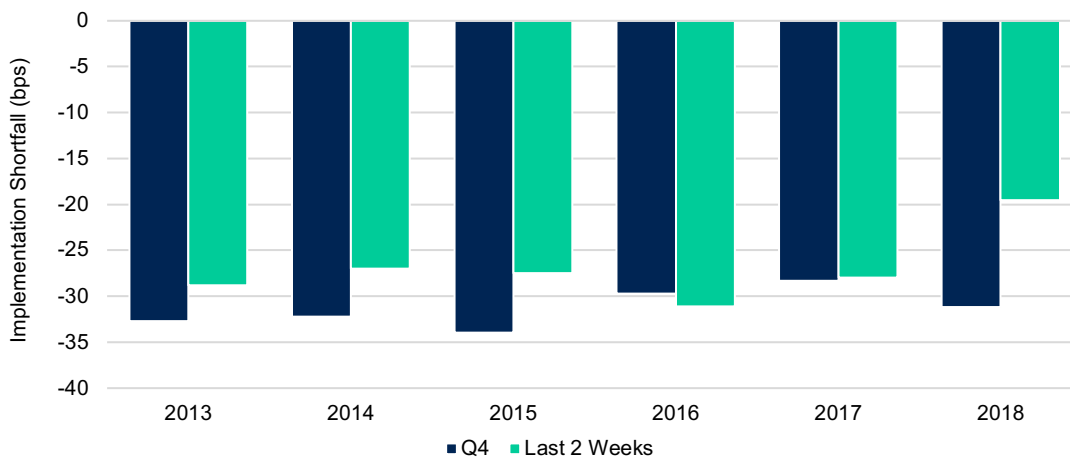


End-of-Year Trading Costs

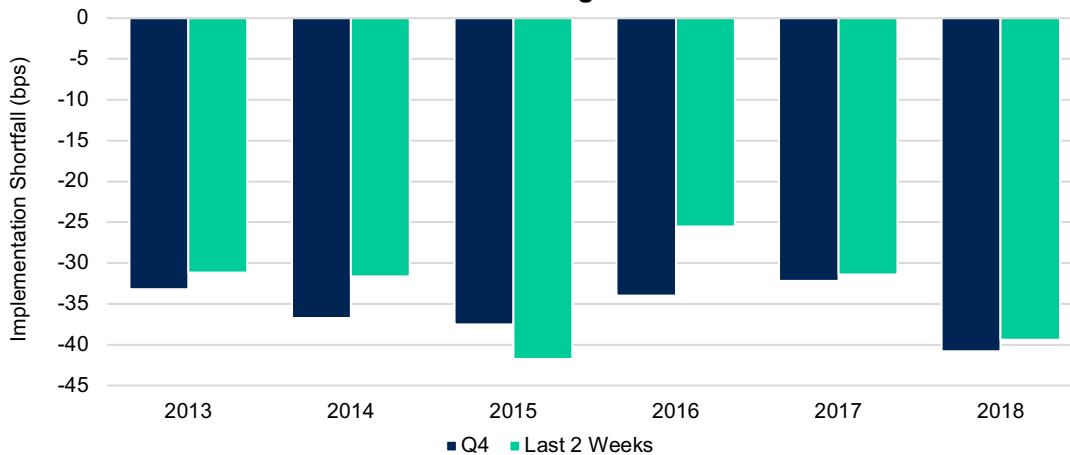
We further analyzed trading costs from our Peer Group database, specifically looking at the last two weeks of 2018 vs. Q4 2018 overall.

- Though volatility spiked in the last two weeks of 2018, the buy-side realized lower transaction costs in North America—20bps—compared to Q4. In prior years, the decline of trading costs was typically driven by lower liquidity demand.
- In EMEA, the trend of no appreciable difference in trading costs continued over the last two weeks of the year compared to Q4 overall—despite the increased use of smaller order size.
- Asia Pacific saw a large drop in trading costs in the last two weeks of 2018 compared to historical cost. This may be driven by an overall decline in outsized liquidity demand (orders >50% MDV) because they are often the most expensive and decreased by the largest amount in the last two weeks of 2018.

IS Costs North America Q4 vs Last 2 Weeks of Trading

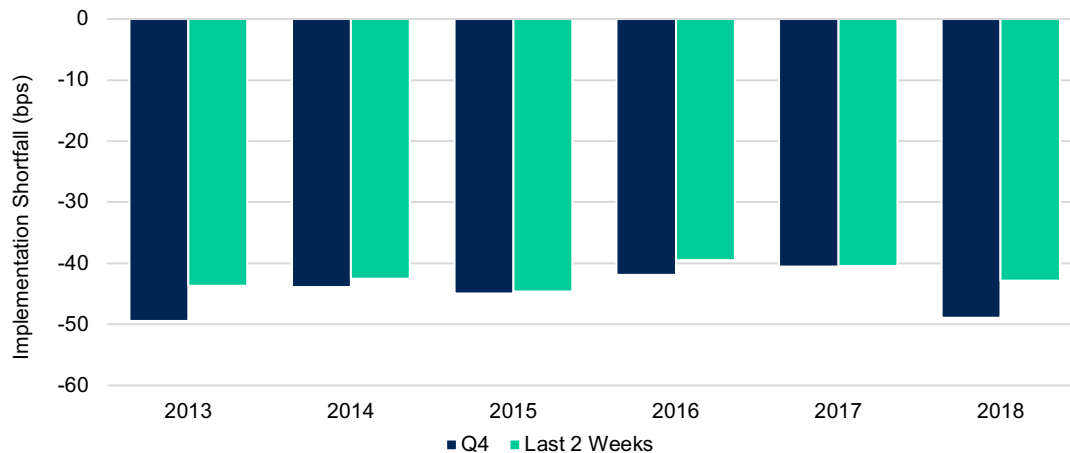


IS Costs EMEA Q4 vs Last 2 Weeks of Trading





IS Costs APAC Q4 vs Last 2 Weeks of Trading



¹ Global Peer database is our broker-neutral aggregated and anonymized peer transaction database that covers more than 20% of global equity institutional trading. Global Peer is leveraged by clients to analyze their performance against firms in their peer group—across asset classes and regions

© 2019 Virtu Financial, Inc. All rights reserved. Global Peer is a trademark of the Virtu Financial, Inc., companies. Not to be reproduced or retransmitted without permission. These materials are for informational purposes and are not intended to be used to make trading or investment decisions, they are not intended as an offer to sell or the solicitation of an offer to buy any security or financial product, and are not intended as advice (investment, tax or legal). The information contained herein has been taken from trade and statistical services and other sources we believe to be reliable but we do not represent that such information is accurate or complete and it should not be relied upon as such. No guarantee or warranty is made as to the reasonableness of the assumptions or the accuracy of the models or market data. Securities products and services are offered by the following subsidiaries of Virtu Financial, Inc. In the U.S., Virtu ITG LLC or Virtu Americas LLC, both FINRA and SIPC members; in Canada, Virtu ITG Canada Corp., member Canadian Investor Protection Fund (“CIPF”) and Investment Industry Regulatory Organization of Canada (“IIROC”), MATCHNow® is a product offering of TriAct Canada Marketplace LP (“TriAct”), member CIPF and IIROC. TriAct is a wholly owned subsidiary of Virtu ITG Canada Corp.; in Europe, Virtu ITG Europe Limited, registered in Ireland No. 283940 (“VIEL”) (VIEL’s registered office is Block A, 1 Georges Quay, Dublin 2, Ireland. VIEL is authorized and regulated by the Central Bank of Ireland), and Virtu Financial Ireland Limited, registered in Ireland No. 471719 (“VFIL”) (VFIL’s registered office is Whitaker Court, Whitaker Square, Third Floor, Block C, Sir John Rogerson’s Quay, Dublin 2, Ireland. VFIL is authorised and regulated by the Central Bank of Ireland); in Asia, Virtu ITG Hong Kong Limited (SFC License No. AHD810), Virtu ITG Singapore Pte Limited (CMS License No. 100138-1), and Virtu ITG Australia Limited (AFS License No. 219582).