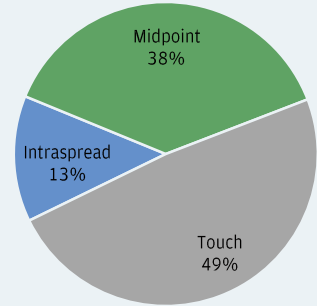


Features and Benefits

- Tier structure to support customizable crossing
- Conditional order support
- Price/Tier/Time priority matching
- Broad spectrum of J.P. Morgan liquidity
- Liquidity, speed, and execution quality
- Opportunity for price improvement
- Continuous crossing

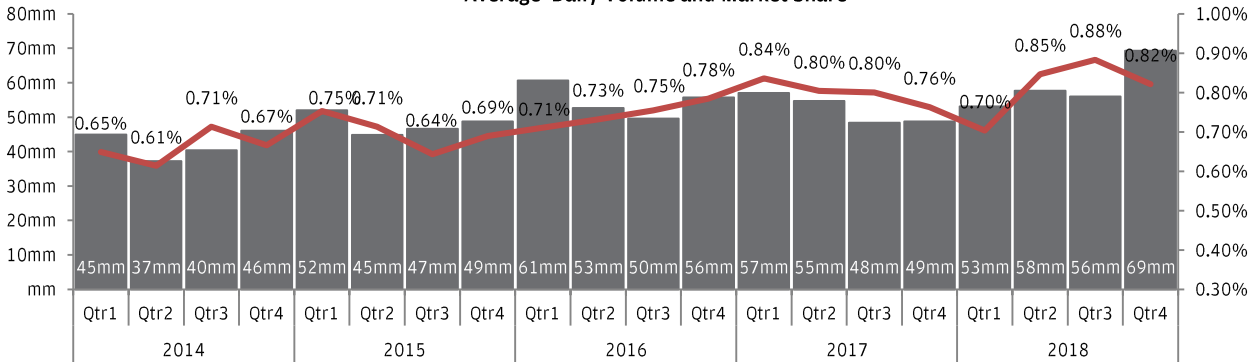
December 2018 JPM-X Statistics	
Average Daily Volume (single counted)	68.7 mm
Average Trade Size	191 shares
# of Symbols traded	6,627 unique symbols
% of Volume >= 5k shares	10.4% of Volume (7.1 mm ADV)
Average Block Size (>= 5k shares)	11,743 shares

Volume by Exec Price



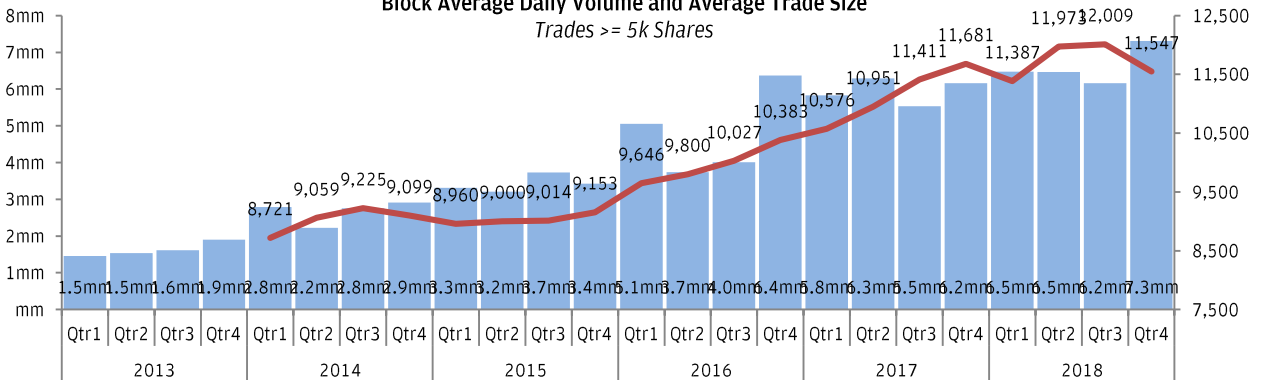
December 2018

Average Daily Volume and Market Share



Block Average Daily Volume and Average Trade Size

Trades >= 5k Shares

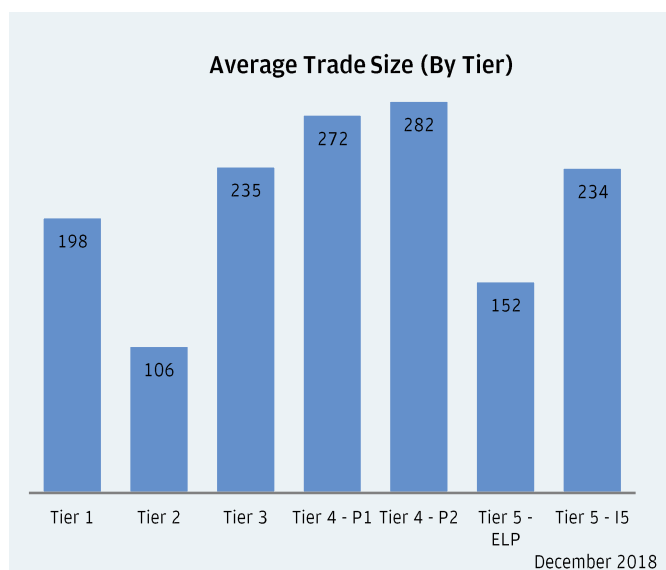
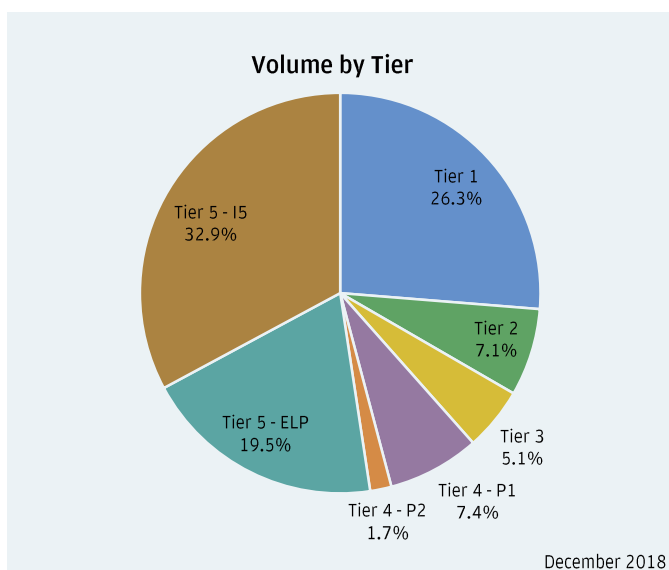


*Average Block Trade Size calculation updated to volume-weighted average from day-weighted average in December 2018. The data has been backdated to reflect the change.

Order Flow Tiers

Our differentiated tiering structure allows clients to customize the order flow types with which they interact. Order flow types are used to tier the JPM-X order book.

- **Tier 1:** Institutional investor client flow accessing JPM-X via algorithms/SOR
- **Tier 2:** Institutional investor client flow with direct access to JPM-X
- **Tier 3:** Broker-dealer client flow (both agency and principal) accessing JPM-X via algorithms/SOR
- **Tier 4 (P1):** JPMS trading desk flow accessing JPM-X via algorithms/SOR
- **Tier 4 (P2):** Internal (JPMS) electronic liquidity provider flow with direct access to JPM-X
- **Tier 5 (14/ELP):** Flow of external broker-dealers acting as electronic liquidity providers with direct access to JPM-X
- **Tier 5 (15):** Flow of broker-dealers not acting as electronic liquidity providers (both agency and principal) with direct access to JPM-X



Sources: JPMorgan Tick and Trade Data, BATS Market Volume Summary http://www.batstrading.com/market_summary

Please also see:

JPM-X Form ATS: https://www.jpmorgan.com/directdoc/ecs_form_ats.pdf

JPM-X FAQs: <https://www.jpmorgan.com/directdoc/jpmxfaq.pdf>

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