\$189,996



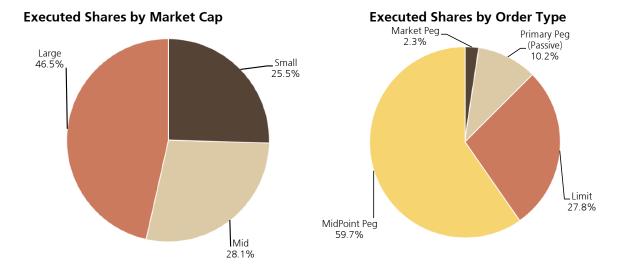
# **UBS ATS Monthly Volume Summary**

# December 2018

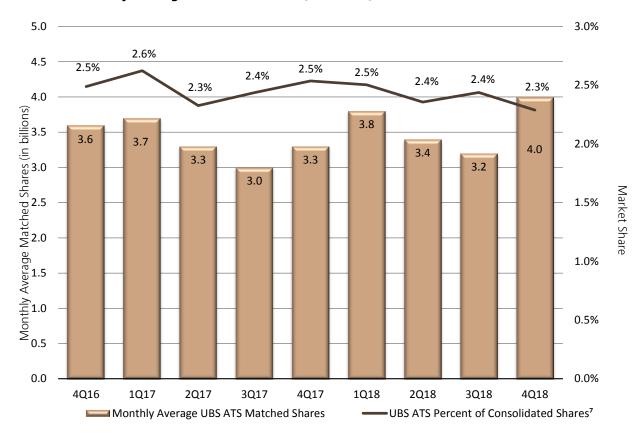
Average Executed Notional:

UBS ATS facilitates interaction among equity orders received from a broad range of clients and market participants, including institutional clients using UBS algorithms, broker-dealers, UBS trading desks, market makers, retail brokers, and active traders (sometimes referred to as High Frequency Traders or "HFT").

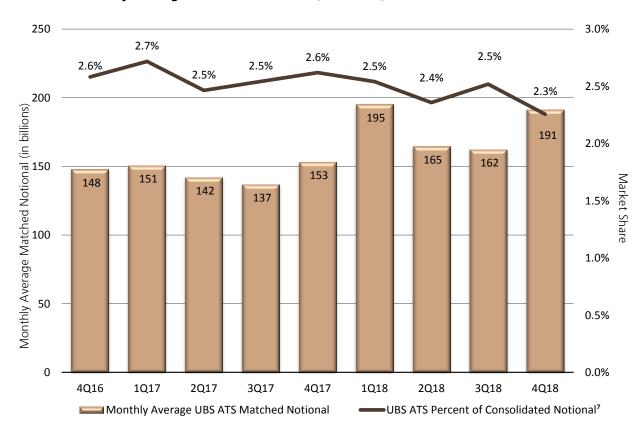
Key Performance Metrics <sup>1</sup>	
Average daily matched shares:	194,951,794
Average daily matched notional:	\$8,926,327,658
Total Symbols Active:	8,744
Total Symbols Traded:	8,006
Peak daily matched shares:	258,493,446
Average Price Improvement Per Share <sup>2</sup> :	\$0.0156
Percentage of shares that received price improvement <sup>2</sup> :	80.66%
Average Trade Size:	152
Average Total executed shares per order:	182
Executed share percentage at midpoint <sup>3</sup> :	61.20%
Percentage of volume executed versus UBS Principal orders <sup>4</sup> :	3.09%
Executed Block Metrics <sup>5</sup>	
Average daily volume block % >=10k shares:	2.54%
Average daily value block %>=200k notional:	3.36%
Average daily volume demi-block % >=2k-9,999 shares:	8.42%
Average daily value demi-block % >=\$100k-200k:	2.79%
Peak executed shares in a single print:	244,700
Peak executed notional in a single print:	\$15,904,974
Order Block Metrics <sup>6</sup>	
Average daily Order block % >=10k shares:	21.92%
Average daily Order block %>=200k notional:	25.20%
Average daily Order demi-block % >=2k-9,999 shares:	19.48%
Average daily Order demi-block % >=\$100k -200k:	8.83%
Conditional Indication Metrics	
Average Conditional Indication Quantity:	29,677
Average Conditional Indication Minimum Quantity:	2,665
Average Conditional Indication Notional Value:	\$1,141,246
Average Firm Up Quantity:	21,141
Average Firm Up Minimum Quantity:	1,620
Average Executed Quantity:	4,055



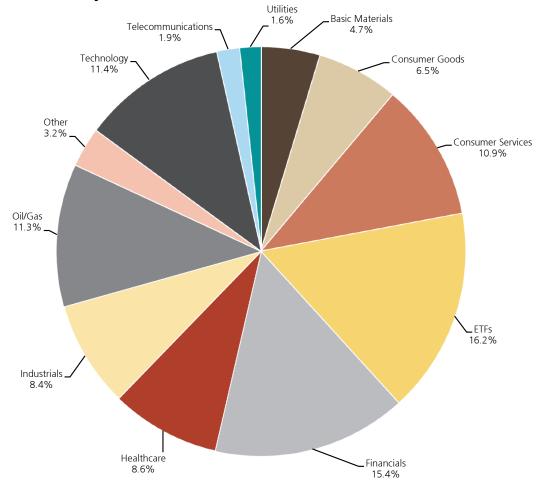
UBS ATS Monthly Average Matched Shares, Q4 2016 - Q4 2018



UBS ATS Monthly Average Matched Notional, Q4 2016 - Q4 2018

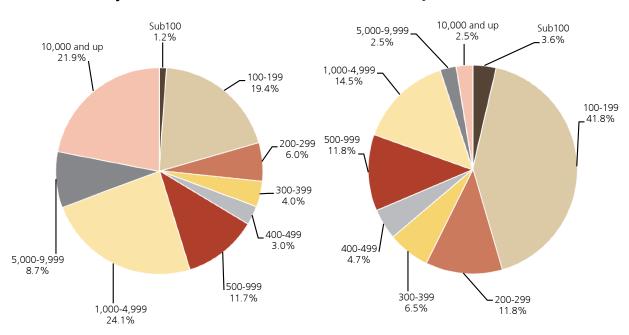


#### **Executed Shares by Sector**

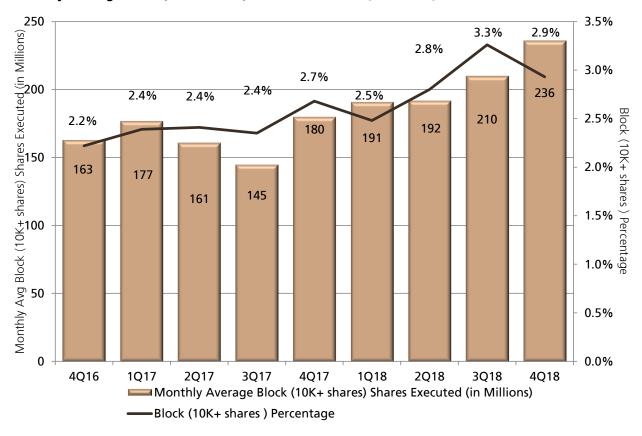


# **Ordered Shares by Size Bucket**

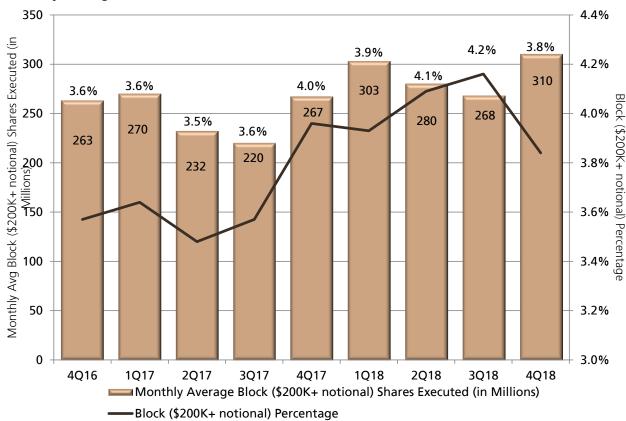
### **Executed Shares by Size Bucket**



#### Monthly Average Block (10K+ shares) Shares Executed, Q4 2016 - Q4 2018



## Monthly Average Block (\$200K+ notional) Shares Executed, Q4 2016 - Q4 2018



#### **Endnotes:**

- 1. All share and notional numbers disclosed reflect a single count methodology
- 2. Price Improvement is an execution at any price less than the NBO for buy orders and greater than the NBB for sell orders
- 3. Includes executed shares in locked markets
- 4. For purposes of these statistics, the term "UBS Principal orders" means any order for an account that is owned by an entity within the UBS Investment Bank Division

#### 5. ADV Block Execution Calculations

- ADV Block % (>=10,000 shares) = total shares executed where the share quantity of the execution is >=10,000 shares, divided by the total shares executed in UBS ATS
- ADV Block % (>=\$200k notional) = total shares executed where the notional of the execution is >=\$200k notional, divided by the total shares executed in UBS ATS
- ADV Demi-Block % (>=2,000-9,999 shares) = total shares executed where the share quantity of the execution is >=2,000 shares, and <10,000 shares, divided by the total shares executed in UBS ATS
- ADV Demi-Block %( >=\$100k-\$200K notional) = total shares executed where the notional of the execution is >=\$100k notional, and < \$200k notional, divided by the total shares executed in UBS ATS

#### 6. ADV Block Order Calculations

- ADV Block % (>=10,000 shares) = total shares ordered where the share quantity of the order is >=10,000 shares, divided by the total shares ordered in UBS ATS
- ADV Block % (>=\$200k notional) = total shares ordered where the notional of the order is >=\$200k notional, divided by the total shares ordered in UBS ATS
- ADV Demi-Block % (>=2,000–9,999 shares) = total shares ordered where the share quantity of the order is >=2,000 shares, and < 10,000 shares, divided by the total shares ordered in UBS ATS
- ADV Demi-Block %( >=\$100k-\$200K notional) = total shares ordered where the notional of the order is >=\$100k notional, and < \$200k notional, divided by the total shares ordered in UBS ATS
- 7. Consolidated Shares and Consolidated Notional information sourced from Bloomberg using MVOL and MVAL functions

Stated percentages may not sum to 100% due to rounding practices. Average daily statistics are rounded down to the nearest whole number.

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UBS ATS 203-719-3775 ats@ubs.com www.ubs.com/ats