

U.S. MS POOL Statistics

July 2020

Key Statistics

Average daily matched shares (MM)	51.1
Average daily matched notional (MM USD)	2,038
Average trade size (shares)	220.6
Average number of traded symbols	4,496

Executions Relative to the Best Bid and Offer

% of shares at Midpoint	33.1%
% of shares at other prices in spread	3.1%
% of shares at Bid / Offer	63.8%

Execution Breakdown by Capacity

% of executed shares from Professional Traders	39.8%
% of executed shares from Principal Flow	2.1%
% of executed shares from non PT/ Principal Flow	58.2%

Execution Block Statistics

Average daily volume % block \geq 10K shares	4.7%
Average daily value % block \geq \$200,000	10.2%
Average daily volume % block \geq 2K-9999 shares	13.4%
Average daily value % block \geq \$100,000-199,999	8.7%

Notes

1. Percentages may not add up to 100% due to rounding.
2. **Key Statistics:** Average daily matched volume and notional are single counted.
3. **Execution Relative to the Best Bid and Offer:** Execution prices are relative to the Best Bid and Offer (BBO) in MS POOL. These prices are (a) at the midpoint of the BBO, (b) at the Bid or Offer or (c) at other valid prices within the BBO spread. Information regarding the market data feeds used by MS POOL to construct the Best Bid and Offer can be found in Part III, Item 23 of the MS POOL ATS-N filing.
4. **Execution Breakdown by Capacity:** Statistics are calculated as the number of shares bought or sold in MS POOL that correspond to each of these capacities, divided by the total number of shares bought and sold in MS POOL. Information regarding these capacities can be found in Part III, Items 7 and 13 of the MS POOL ATS-N filing.
5. **Execution Block Statistics:** Average daily volume block statistics are calculated as the volume in MS POOL executed in the specified block size divided by the total volume executed in MS POOL. Average daily value block statistics are calculated as the notional value in MS POOL executed in the specified block value divided by the total notional value executed in MS POOL.

Important Information and Qualifications

This information is being provided at your request for your exclusive use to aid in your understanding and evaluation of Morgan Stanley's U.S. equity order routing and execution services. This information is confidential and proprietary to Morgan Stanley. While reasonable efforts have been made to ensure the accuracy and completeness of this information, given the volume and complexity of the underlying inputs, certain information may be incomplete or inaccurate, and this information may change without notice.

The information provided herein was prepared by sales, trading, or other non-research personnel of one of the following: Morgan Stanley Co. LLC, Morgan Stanley Co. International PLC, Morgan Stanley MUFG Securities Co., Ltd, Morgan Stanley Capital Group Inc. and/or Morgan Stanley Asia Limited (together with their affiliates, hereinafter "Morgan Stanley"), but is not a product of Morgan Stanley's Equity Research or Fixed Income Research Departments. This communication is a marketing communication and is not a research report, though it may refer to a Morgan Stanley research report or the views of a Morgan Stanley research analyst. We are not commenting on the fundamentals of any companies mentioned. Unless indicated, all views expressed herein are the views of the author and may differ from or conflict with those of the Morgan Stanley Equity Research or Fixed Income Research Departments or others in the Firm. For additional information, research reports and important disclosures, see <https://secure.ms.com>. Quantitative and Derivative Strategies is a part of Morgan Stanley's Institutional Equity Sales Division.

Morgan Stanley is not acting as a municipal advisor and the opinions or views contained herein are not intended to be, and do not constitute, advice, including within the meaning of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act.

This material is not (and should not be construed to be) investment advice (as defined under the Employee Retirement Income Security Act of 1974, as amended ("ERISA") or similar concepts under applicable law) from Morgan Stanley with respect to an employee benefit plan or to any person acting as a fiduciary for an employee benefit plan. This information is not intended to, and should not, form a primary basis for any investment decisions that you may make. Morgan Stanley is not acting as a fiduciary under either ERISA or the Internal Revenue Code of 1986, as amended in providing this material.

The information provided herein has been prepared solely for informational purposes and is not an offer to buy or sell or a solicitation of an offer to buy or sell the securities or instruments mentioned or to participate in any particular trading strategy. These materials have been based upon information generally available to the public from sources believed to be reliable. No representation is given with respect to their accuracy or completeness, and they may change without notice.

Morgan Stanley on its own behalf and on behalf of its affiliates disclaims any and all liability relating to these materials, including, without limitation, any express or implied representations or warranties for statements or errors contained in, or omissions from, these materials. Morgan Stanley and others associated with it may make markets or specialize in, have or may in the future enter into principal positions (long or short) in and effect transactions in securities of companies or trading strategies mentioned or described herein and may also perform or seek to perform investment banking, brokerage or other services for those companies and may enter into transactions with them. We may at any time modify or liquidate all or a portion of such positions and we are under no obligation to contact you to disclose any such intention to modify or liquidate or any such modification or liquidation. Morgan Stanley acts as "prime broker" and lender for a number of hedge funds. As a result, Morgan Stanley may indirectly benefit from increases in investments in hedge funds.

Unless stated otherwise, the material contained herein has not been based on a consideration of any individual client circumstances and as such should not be considered to be a personal recommendation. We remind investors that these investments are subject to market risk and will fluctuate in value. The investments discussed in this communication may be unsuitable for investors depending upon their specific investment objectives and financial position. Where an investment is denominated in a currency other than the investor's currency, changes in rates of exchange may have an adverse effect on the value, price of, or income derived from the investment. The performance data quoted represents past performance. Past performance is not indicative of future returns. No representation or warranty is made that any returns indicated will be achieved. Certain assumptions may have been made in this analysis, which have resulted in any returns detailed herein. Transaction costs (such as commissions) are not included in the calculation of returns. Changes to the assumptions may have a material impact on any returns detailed. Potential investors should be aware that certain legal, accounting and tax restrictions, margin requirements, commissions and other transaction costs and changes to the assumptions set forth herein may significantly affect the economic may not be suitable for your specific circumstances. By submitting this communication to you, Morgan Stanley is not advising you to take any particular action based on

the information, opinions or views contained herein, and acceptance of such document will be deemed by you acceptance of these conclusions. You should consult with your own municipal, financial, accounting and legal advisors regarding the information, opinions or views contained in this communication.

These materials may not be distributed in any jurisdiction where it is unlawful to do so. The products described in this communication may not be marketed or sold or be available for offer or sale in a number of jurisdictions where it is unlawful to do so. This publication is disseminated in Japan by Morgan Stanley MUFG Securities Co., Ltd only to those investors who are "Professional Investors" (tokutei toushika) as defined in the Financial Instrument Exchange Law of Japan and may not be redistributed to other types of investors without the prior written consent of Morgan Stanley; in Hong Kong by Morgan Stanley Asia Limited; in Singapore by Morgan Stanley Asia (Singapore) Pte. and/or Morgan Stanley Asia (Singapore) Securities Pte. Ltd., each of which is regulated by the Monetary Authority of Singapore and accepts responsibility for its contents of these materials, only to those investors who are institutional investors, accredited investors or expert investors, as defined in the Securities and Futures Act, Chapter 289 of Singapore; in Australia by Morgan Stanley Australia Limited A.B.N. 67 003 734 576, A.F.S.L. No. 233742 and/or Morgan Stanley Australia Securities Limited A.B.N. 55 078 652 276, A.F.S.L. No. 233741, which accept responsibility for its contents; in Canada by Morgan Stanley Canada Limited, which has approved of, and has agreed to take responsibility for, the contents of this publication in Canada; in Spain by Morgan Stanley, S.V., S.A., a Morgan Stanley group company, which is supervised by the Spanish Securities Markets Commission (CNMV) and states that this document has been written and distributed in accordance with the rules of conduct applicable to financial research as established under Spanish regulations; in the United States it is directed only to institutional clients and is distributed by Morgan Stanley Co. LLC, which accepts responsibility for its contents; and in the United Kingdom it is directed only to those persons who are eligible counterparties or professional clients and must not be acted on or relied upon by retail clients (each as defined in the UK Financial Conduct Authority's rules) and is distributed in the European Union by Morgan Stanley Co. International plc, except as provided above. Private U.K. investors should obtain the advice of their Morgan Stanley Co. International plc representative about the investments concerned. In Australia, this publication, and any access to it, is intended only for "wholesale clients" within the meaning of the Australian Corporations Act. The trademarks and service marks contained herein are the property of their respective owners. Third-party data providers make no warranties or representations of any kind relating to the accuracy, completeness, or timeliness of the data they provide and shall not have liability for any damages of any kind relating to such data.

HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH ARE DESCRIBED BELOW. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAM.

ONE OF THE LIMITATIONS OF HYPOTHETICAL PERFORMANCE RESULTS IS THAT THEY ARE GENERALLY PREPARED WITH THE BENEFIT OF HINDSIGHT. IN ADDITION, HYPOTHETICAL TRADING DOES NOT INVOLVE FINANCIAL RISK, AND NO HYPOTHETICAL TRADING RECORD CAN COMPLETELY ACCOUNT FOR THE IMPACT OF FINANCIAL RISK IN ACTUAL TRADING. FOR EXAMPLE, THE ABILITY TO WITHSTAND LOSSES OR TO ADHERE TO A PARTICULAR TRADING STRATEGY IN SPITE OF TRADING LOSSES ARE MATERIAL POINTS WHICH CAN ALSO ADVERSELY AFFECT ACTUAL TRADING RESULTS. THERE ARE NUMEROUS OTHER FACTORS RELATED TO THE MARKETS IN GENERAL OR TO THE IMPLEMENTATION OF ANY SPECIFIC TRADING PROGRAM WHICH CANNOT BE FULLY ACCOUNTED FOR IN THE PREPARATION OF HYPOTHETICAL PERFORMANCE RESULTS AND ALL OF WHICH CAN ADVERSELY AFFECT ACTUAL TRADING RESULTS.

Any estimates, projections or predictions (including in tabular form) given in this communication are intended to be forward-looking statements. Although Morgan Stanley believes that the expectations in such forward-looking statement are reasonable, it can give no assurance that any forward-looking statements will prove to be correct. Such estimates are subject to actual known and unknown risks, uncertainties and other factors that could cause actual results to differ materially from those projected. These forward-looking statements speak only as of the date of this communication. Morgan Stanley expressly disclaims any obligation or undertaking to update or revise any forward-looking statement contained herein to reflect any change in its expectations or any change in circumstances upon which such statement is based. Prices indicated are Morgan Stanley offer prices at the close of the date indicated. Actual transactions at these prices may not have been effected.

The trademarks and service marks contained herein are the property of their respective owners. Additional information on securities discussed herein is available on request. This communication or any portion hereof, may not be reprinted, resold or redistributed without the prior written consent of Morgan Stanley.

Copyright © by Morgan Stanley 2020, all rights reserved.