

July 11, 2016 04:01 AM GMT

Autos & Shared Mobility

NYC Taxi and Ride-share App Monitor

We introduce this analysis of New York City TLC data to help investors understand the latest trends in shared mobility at a critical time for the auto industry.

The Autos & Shared Mobility team is introducing the NYC Taxi and Ride-share App Monitor (TRAM) which analyzes the detailed monthly reports from New York City's Taxi & Limousine Commission (TLC) for trips carried out by Yellow Taxis and For Hire Vehicles (FHVs - i.e. Uber, Lyft, etc.). In 2014, the TLC began requiring operators of FHVs, including ride-sharing apps (Uber, Lyft, etc), to submit records including weekly total dispatched trips and unique dispatched vehicles. See [Exhibit 7](#) for an overview of the key ride-sharing apps in NYC.

The data is surprisingly granular and will allow us to track the latest mobility trends in ride-sharing's single largest market. We intend to update this data regularly and make our database available to Morgan Stanley clients. Many OEMs and even tech hardware firms have been making significant investments in shared mobility including a number of high profile tie-ups and strategic partnerships (VW-GETT, Toyota-Uber, Apple-Didi). We should note that TLC does not guarantee or confirm the accuracy and completeness of the data provided by operators of For Hire Vehicles.

Exhibit 1: NYC Yellow Taxi vs. Leading Rideshare Apps - April 2016

	TAXI	RIDESHARE APPS			
		UBER	LYFT	VIA	GETT
TOTAL DISPATCHED TRIPS	11,137,840	4,718,785	749,910	441,297	134,691
TOTAL DISPATCHED TRIPS / DAY	397,780	168,528	26,783	15,761	4,810
YY (Apr-16 vs. Apr-15)	-9%	121%	871%	298%	NM
AVG DRIVERS DISPATCHED / WEEK	30,488	26,970	8,078	1,023	1,654
YY (Apr-16 vs. Apr-15)	-3%	102%	354%	182%	NM
AVG TRIPS PER DRIVER / WEEK	91	44	23	108	20
YY (Apr-16 vs. Apr-15)	-5%	10%	114%	42%	NM

Gett was not active in NYC in April 2015.

Source: New York City Taxi & Limousine Commission, Morgan Stanley Research

Key observations from the TLC data:

Ride sharing trips are still growing significantly... At nearly 170k trips per day, Uber is by far the most dominant of the ride-sharing apps (+121% y/y). YoY growth at Lyft (+871%) and Via (+298%) is also strong but vs. a far lower base of daily trips at 27k and 16k respectively. GETT is dispatching just shy of 5k trips per day.

... but the growth in ride sharing appears driven more by growth in the number of drivers rather than increased utilization (trips per driver). Vehicles dispatched by Uber per week increased 102% YOY between April 2015 and April 2016, and trips per vehicle per week only increased 10%. Lyft reported a 114% increase in

MORGAN STANLEY & CO. LLC

Adam Jonas, CFA
EQUITY ANALYST
Adam.Jonas@morganstanley.com +1 212 761-1726

Brian Nowak, CFA
EQUITY ANALYST
Brian.Nowak@morganstanley.com +1 212 761-3365

Paresh Jain, CFA
EQUITY ANALYST
Paresh.Jain@morganstanley.com +1 212 761-3354

Neel Mehta
RESEARCH ASSOCIATE
Neel.Mehta@morganstanley.com +1 212 761-8582

Autos & Shared Mobility

North America

IndustryView

Cautious

Morgan Stanley does and seeks to do business with companies covered in Morgan Stanley Research. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of Morgan Stanley Research. Investors should consider Morgan Stanley Research as only a single factor in making their investment decision.

For analyst certification and other important disclosures, refer to the Disclosure Section, located at the end of this report.

trips per vehicle per week and a 354% increase in vehicles per week.

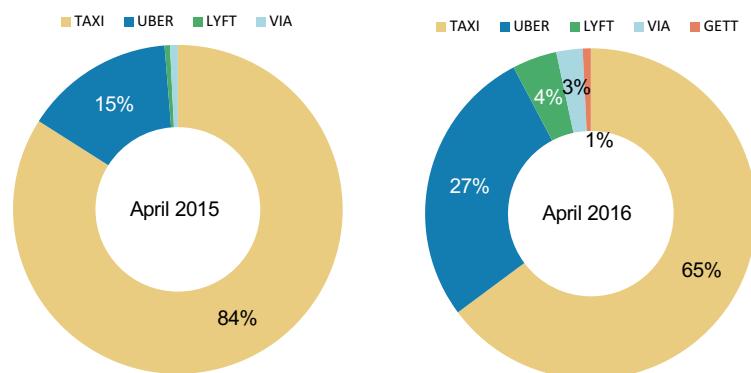
And the iconic NYC yellow taxi is far from dead. New York Taxis still perform a vast majority of trips in the city at ~400k per day. This figure has declined nearly 10% over the last year but is now beginning to lap its most depressed prior-year comparisons. It is worth noting that there were 12,875 medallions dispatched in April 2016. Assuming each medallion represents one vehicle, that would mean that NYC taxis, as a result of their higher utilization, complete significantly more trips with under half the vehicles of Uber. Furthermore, MTA data shows that subway ridership has continued to increase YOY since the launch of ridesharing apps in NYC.

Utilization defined as average number of trips performed by each driver on a weekly basis appears surprisingly low. On our calculations, the average Uber driver performs 44 trips per week or 6 trips a day (9 trips in a 5-day week). The average taxi driver performs 91 trips in a week or 13 trips a day (18 trips in a 5-day week). This suggests that driving for a rideshare app has remained a part-time job for most (a 2015 survey showed that 42% of UberX drivers work 1-15 hours in NYC, <25% work more than 35 hours). It is likely that there is some overlap between Uber / Lyft drivers. Since many ridesharing drivers are on multiple platforms, we do not add point to the sum of drivers/vehicles on the different platforms as a total number of ridesharing drivers/vehicles in NYC.

Via's passenger utilization stands out as the highest of the group. On our calculations, Via drivers performed an average of 108 trips per week. While sharing platforms such as UberPool and LyftLine are gaining in popularity, Via's business model lends itself to a higher percentage of its cars being shared - achieving the highest utilization on an available seat mile basis. **See our July 29 2015 report, [Auto Disruptors: Via](#).**

Key charts:

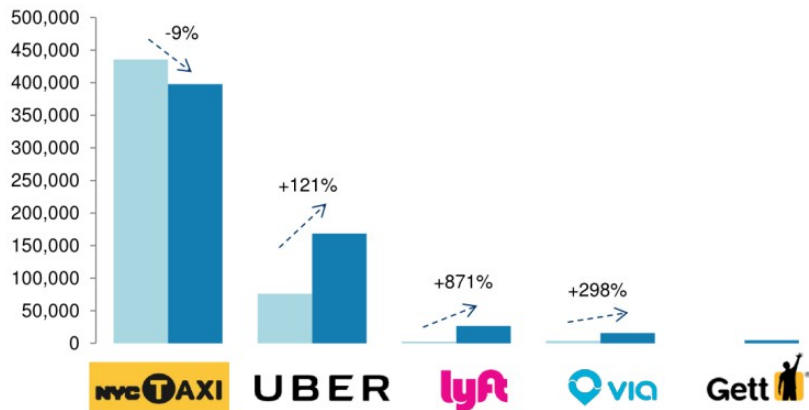
Exhibit 2: Share of trips - NYC Yellow Taxi vs. Rideshare App - April 2016 vs. 2015



Black cars and other non rideshare FHV's are not included.

Source: New York City Taxi & Limousine Commission, Morgan Stanley Research

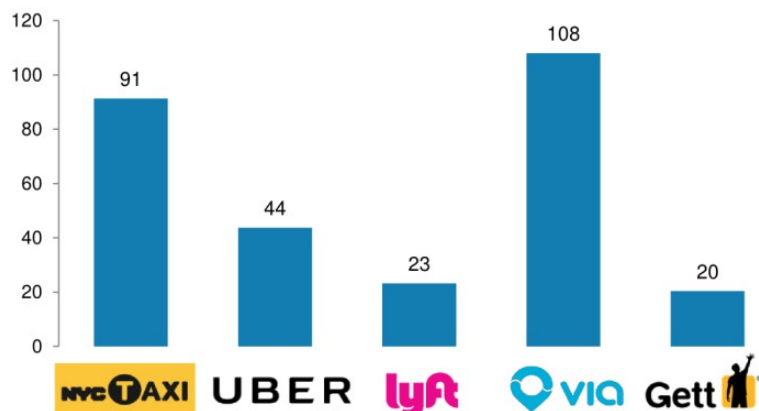
Exhibit 3: Total Dispatched Trips / Day in NYC - April 2016 vs. 2015



Gett was not active in NYC in April 2015.

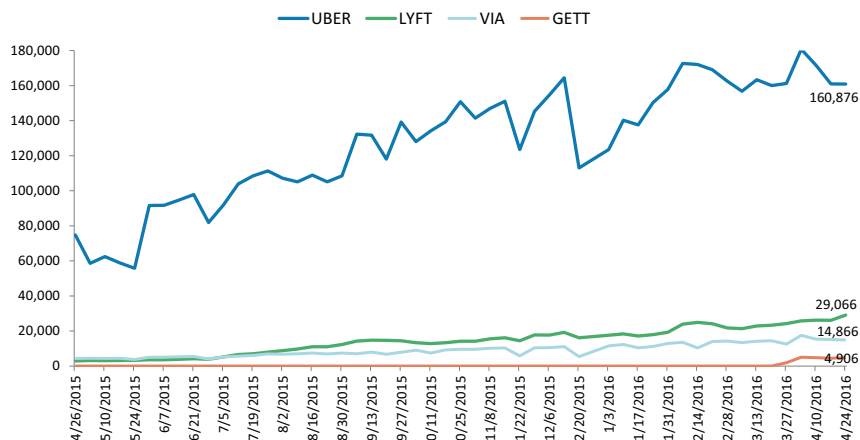
Source: New York City Taxi & Limousine Commission, Morgan Stanley Research

Exhibit 4: Average Trips / Vehicle / Week in NYC - April 2016



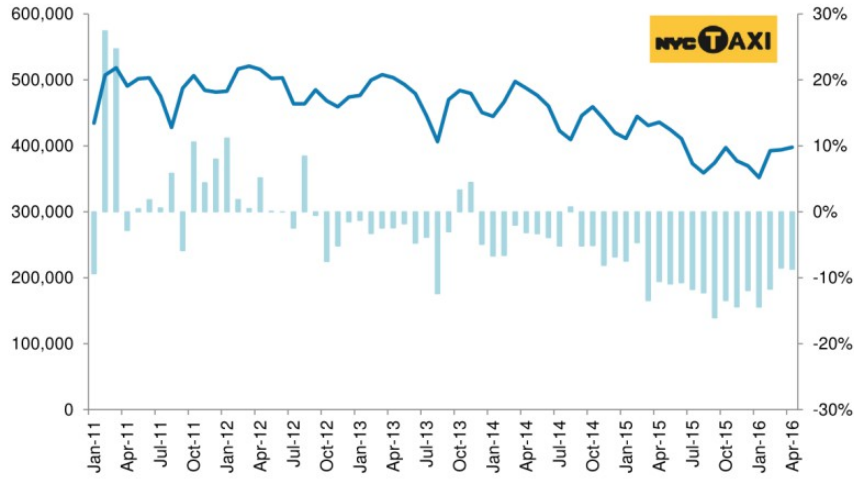
Source: New York City Taxi & Limousine Commission, Morgan Stanley Research

Exhibit 5: Time Series of Dispatched Trips / Day for Leading Rideshare Apps in NYC (Weekly)



Source: New York City Taxi & Limousine Commission, Morgan Stanley Research

Exhibit 6: Time Series of Dispatched Trips / Day for NYC Taxis (Monthly)



Source: New York City Taxi & Limousine Commission, Morgan Stanley Research

Exhibit 7: Key Ridesharing Apps in New York City

	UBER	LYFT	VIA	GETT	JUNO
MODEL	The dominant option in NYC, Uber offers a variety of ridesharing products including UberX, UberSELECT, and UberBLACK, and a rush delivery service in NYC. The company charges drivers on the platform up to 30% commission. Prices "surge" for riders in times of increased demand.	Similar to Uber, Lyft offers ridesharing services, charges drivers a commission, and includes surge pricing.	Via pools passengers heading in the same direction into a shared vehicle for a flat \$5 ride anywhere below 125th street (\$5.95 late nights and weekends). Drivers are paid hourly.	Black car type service, caters to corporate clients. Flat pricing is often based on zones, there is no surge, and the app allows advance booking. Gett also takes a lower commission from drivers (10%).	Similar to Uber and Lyft, Juno seeks to attract and retain top-rated drivers from other services through what it calls "better treatment" of its drivers including allocation of equity in the company and taking a lower commission.
NYC LAUNCH	May 2011 (black car); July 2012 (UberX); December 2014 (UberPOOL)	July 2014 (Lyft); December 2014 (LyftLine)	September 2013	September 2014	Juno is beta testing and has not officially launched yet, so it is not included in the tables in the rest of this note.
AREA COVERED	All five boroughs	All five boroughs	Manhattan only	Manhattan only	Manhattan only
NUMBER OF BASES	27	1	1	2	1
SHARED OPTION?	UberPOOL - 20% of rides globally (presumably more in NYC, as POOL is not available in all markets). Uber recently launched flat \$5 commuting rides in Manhattan from 7-10am and 5-8pm.	Lyft Line - more than 30% of rides in NYC as of April 2015	All Via rides are intended to be shared. Although they do not disclose statistics, anecdotal evidence suggests that the vast majority are shared by at least 2 people.	None.	None.
NOTES			See our July 29, 2015 note - <i>Auto Disruptors: Via</i>		See our May 11 note - <i>Auto Disruptors: Juno - The Fight for Drivers Goes into High Gear.</i>

Source: Uber, Lyft, Via, Gett, and Juno websites; conversations with Via and Juno management.

Disclosure Section

The information and opinions in Morgan Stanley Research were prepared by Morgan Stanley & Co. LLC, and/or Morgan Stanley C.T.V.M. S.A., and/or Morgan Stanley Mexico, Casa de Bolsa, S.A. de C.V., and/or Morgan Stanley Canada Limited. As used in this disclosure section, "Morgan Stanley" includes Morgan Stanley & Co. LLC, Morgan Stanley C.T.V.M. S.A., Morgan Stanley Mexico, Casa de Bolsa, S.A. de C.V., Morgan Stanley Canada Limited and their affiliates as necessary.

For important disclosures, stock price charts and equity rating histories regarding companies that are the subject of this report, please see the Morgan Stanley Research Disclosure Website at www.morganstanley.com/researchdisclosures, or contact your investment representative or Morgan Stanley Research at 1585 Broadway, (Attention: Research Management), New York, NY, 10036 USA.

For valuation methodology and risks associated with any recommendation, rating or price target referenced in this research report, please contact the Client Support Team as follows: US/Canada +1 800 303-2495; Hong Kong +852 2848-5999; Latin America +1 718 754-5444 (U.S.); London +44 (0)20-7425-8169; Singapore +65 6834-6860; Sydney +61 (0)2-9770-1505; Tokyo +81 (0)3-6836-9000. Alternatively you may contact your investment representative or Morgan Stanley Research at 1585 Broadway, (Attention: Research Management), New York, NY 10036 USA.

Analyst Certification

The following analysts hereby certify that their views about the companies and their securities discussed in this report are accurately expressed and that they have not received and will not receive direct or indirect compensation in exchange for expressing specific recommendations or views in this report: Adam Jonas, CFA; Brian Nowak, CFA.

Unless otherwise stated, the individuals listed on the cover page of this report are research analysts.

Global Research Conflict Management Policy

Morgan Stanley Research has been published in accordance with our conflict management policy, which is available at www.morganstanley.com/institutional/research/conflictpolicies.

Important US Regulatory Disclosures on Subject Companies

As of June 30, 2016, Morgan Stanley beneficially owned 1% or more of a class of common equity securities of the following companies covered in Morgan Stanley Research: Asbury Automotive Group Inc, Avis Budget Group Inc, Group 1 Automotive, Inc, Mobileye NV, Tesla Motors Inc..

Within the last 12 months, Morgan Stanley managed or co-managed a public offering (or 144A offering) of securities of BorgWarner Inc., Delphi Automotive PLC, Ford Motor Company, General Motors Company, Tenneco Inc., Tesla Motors Inc..

Within the last 12 months, Morgan Stanley has received compensation for investment banking services from Autoliv, Avis Budget Group Inc, BorgWarner Inc., Delphi Automotive PLC, Ford Motor Company, General Motors Company, Mobileye NV, Tenneco Inc., Tesla Motors Inc..

In the next 3 months, Morgan Stanley expects to receive or intends to seek compensation for investment banking services from Autoliv, Avis Budget Group Inc, BorgWarner Inc., Delphi Automotive PLC, Fiat Chrysler Automobiles NV, Ford Motor Company, General Motors Company, Goodyear Tire & Rubber Company, Harley-Davidson Inc, Lear Corporation, Magna International Inc., Mobileye NV, Tenneco Inc., Tesla Motors Inc..

Within the last 12 months, Morgan Stanley has received compensation for products and services other than investment banking services from American Axle & Manufacturing Holdings Inc, Autoliv, Avis Budget Group Inc, BorgWarner Inc., Delphi Automotive PLC, Fiat Chrysler Automobiles NV, Ford Motor Company, General Motors Company, Goodyear Tire & Rubber Company, Harley-Davidson Inc, Lear Corporation, Sonic Automotive Inc, Tenneco Inc..

Within the last 12 months, Morgan Stanley has provided or is providing investment banking services to, or has an investment banking client relationship with, the following company: Autoliv, Avis Budget Group Inc, BorgWarner Inc., Delphi Automotive PLC, Fiat Chrysler Automobiles NV, Ford Motor Company, General Motors Company, Goodyear Tire & Rubber Company, Harley-Davidson Inc, Lear Corporation, Magna International Inc., Mobileye NV, Tenneco Inc., Tesla Motors Inc..

Within the last 12 months, Morgan Stanley has either provided or is providing non-investment banking, securities-related services to and/or in the past has entered into an agreement to provide services or has a client relationship with the following company: American Axle & Manufacturing Holdings Inc, Autoliv, Avis Budget Group Inc, BorgWarner Inc., Delphi Automotive PLC, Fiat Chrysler Automobiles NV, Ford Motor Company, General Motors Company, Goodyear Tire & Rubber Company, Harley-Davidson Inc, Lear Corporation, Lithia Motors Inc., Sonic Automotive Inc, Tenneco Inc., Tesla Motors Inc..

Morgan Stanley & Co. LLC makes a market in the securities of American Axle & Manufacturing Holdings Inc, Asbury Automotive Group Inc, Autoliv, AutoNation Inc., Avis Budget Group Inc, BorgWarner Inc., Carmax Inc, Delphi Automotive PLC, Ferrari NV, Fiat Chrysler Automobiles NV, Ford Motor Company, General Motors Company, Goodyear Tire & Rubber Company, Group 1 Automotive, Inc, Harley-Davidson Inc, Harman International Industries Inc., Hertz Global Holdings Inc, Lear Corporation, Lithia Motors Inc., Magna International Inc., Mobileye NV, Penske Automotive Group, Inc, Sonic Automotive Inc, Tenneco Inc., Tesla Motors Inc..

The equity research analysts or strategists principally responsible for the preparation of Morgan Stanley Research have received compensation based upon various factors, including quality of research, investor client feedback, stock picking, competitive factors, firm revenues and overall investment banking revenues. Equity Research analysts' or strategists' compensation is not linked to investment banking or capital markets transactions performed by Morgan Stanley or the profitability or revenues of particular trading desks.

Morgan Stanley and its affiliates do business that relates to companies/instruments covered in Morgan Stanley Research, including market making, providing liquidity, fund management, commercial banking, extension of credit, investment services and investment banking. Morgan Stanley sells to and buys from customers the securities/instruments of companies covered in Morgan Stanley Research on a principal basis. Morgan Stanley may have a position in the debt of the Company or instruments discussed in this report. Morgan Stanley trades or may trade as principal in the debt securities (or in related derivatives) that are the subject of the debt research report.

Certain disclosures listed above are also for compliance with applicable regulations in non-US jurisdictions.

STOCK RATINGS

Morgan Stanley uses a relative rating system using terms such as Overweight, Equal-weight, Not-Rated or Underweight (see definitions below). Morgan Stanley does not assign ratings of Buy, Hold or Sell to the stocks we cover. Overweight, Equal-weight, Not-Rated and Underweight are not the equivalent of buy, hold and sell. Investors should carefully read the definitions of all ratings used in Morgan Stanley Research. In addition, since Morgan Stanley Research contains more complete information concerning the analyst's views, investors should carefully read Morgan Stanley Research, in its entirety, and not infer the contents from the rating alone. In any case, ratings (or research) should not be used or relied upon as investment advice. An investor's decision to buy or sell a stock should depend on individual circumstances (such as the investor's existing holdings) and other considerations.

Global Stock Ratings Distribution

(as of June 30, 2016)

The Stock Ratings described below apply to Morgan Stanley's Fundamental Equity Research and do not apply to Debt Research produced by the Firm. For disclosure purposes only (in accordance with NASD and NYSE requirements), we include the category headings of Buy, Hold, and Sell alongside our ratings of Overweight, Equal-weight, Not-Rated and Underweight. Morgan Stanley does not assign ratings of Buy, Hold or Sell to the stocks we cover. Overweight, Equal-weight, Not-Rated and Underweight are not the equivalent of buy, hold, and sell but represent recommended relative weightings (see definitions below). To satisfy regulatory requirements, we correspond Overweight, our most positive stock rating, with a buy recommendation; we correspond

Equal-weight and Not-Rated to hold and Underweight to sell recommendations, respectively.

STOCK RATING CATEGORY	COVERAGE UNIVERSE		INVESTMENT BANKING CLIENTS (IBC)			OTHER MATERIAL INVESTMENT SERVICES CLIENTS (MISC)	
	COUNT	% OF TOTAL	COUNT	% OF TOTAL IBC	% OF RATING CATEGORY	COUNT	% OF TOTAL OTHER MISC
Overweight/Buy	1161	35%	279	39%	24%	570	36%
Equal-weight/Hold	1427	43%	341	47%	24%	710	45%
Not-Rated/Hold	78	2%	8	1%	10%	11	1%
Underweight/Sell	645	19%	94	13%	15%	283	18%
TOTAL	3,311		722			1574	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months.

Analyst Stock Ratings

Overweight (O). The stock's total return is expected to exceed the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Equal-weight (E). The stock's total return is expected to be in line with the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Not-Rated (NR). Currently the analyst does not have adequate conviction about the stock's total return relative to the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Underweight (U). The stock's total return is expected to be below the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

Analyst Industry Views

Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.

In-Line (I): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be in line with the relevant broad market benchmark, as indicated below.

Cautious (C): The analyst views the performance of his or her industry coverage universe over the next 12-18 months with caution vs. the relevant broad market benchmark, as indicated below.

Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

Important Disclosures for Morgan Stanley Smith Barney LLC Customers

Important disclosures regarding the relationship between the companies that are the subject of Morgan Stanley Research and Morgan Stanley Smith Barney LLC or Morgan Stanley or any of their affiliates, are available on the Morgan Stanley Wealth Management disclosure website at www.morganstanley.com/online/researchdisclosures. For Morgan Stanley specific disclosures, you may refer to www.morganstanley.com/researchdisclosures.

Each Morgan Stanley Equity Research report is reviewed and approved on behalf of Morgan Stanley Smith Barney LLC. This review and approval is conducted by the same person who reviews the Equity Research report on behalf of Morgan Stanley. This could create a conflict of interest.

Other Important Disclosures

Morgan Stanley & Co. International PLC and its affiliates have a significant financial interest in the debt securities of Avis Budget Group Inc, BorgWarner Inc., Fiat Chrysler Automobiles NV, Ford Motor Company, General Motors Company, Goodyear Tire & Rubber Company, Tenneco Inc., Tesla Motors Inc..

Morgan Stanley Research policy is to update research reports as and when the Research Analyst and Research Management deem appropriate, based on developments with the issuer, the sector, or the market that may have a material impact on the research views or opinions stated therein. In addition, certain Research publications are intended to be updated on a regular periodic basis (weekly/monthly/quarterly/annual) and will ordinarily be updated with that frequency, unless the Research Analyst and Research Management determine that a different publication schedule is appropriate based on current conditions. 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 within the meaning of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act.

Morgan Stanley produces an equity research product called a "Tactical Idea." Views contained in a "Tactical Idea" on a particular stock may be contrary to the recommendations or views expressed in research on the same stock. This may be the result of differing time horizons, methodologies, market events, or other factors. For all research available on a particular stock, please contact your sales representative or go to Matrix at <http://www.morganstanley.com/matrix>. Morgan Stanley Research is provided to our clients through our proprietary research portal on Matrix and also distributed electronically by Morgan Stanley to clients. Certain, but not all, Morgan Stanley Research products are also made available to clients through third-party vendors or redistributed to clients through alternate electronic means as a convenience. For access to all available Morgan Stanley Research, please contact your sales representative or go to Matrix at <http://www.morganstanley.com/matrix>.

Any access and/or use of Morgan Stanley Research is subject to Morgan Stanley's Terms of Use (<http://www.morganstanley.com/terms.html>). By accessing and/or using Morgan Stanley Research, you are indicating that you have read and agree to be bound by our Terms of Use (<http://www.morganstanley.com/terms.html>). In addition you consent to Morgan Stanley processing your personal data and using cookies in accordance with our Privacy Policy and our Global Cookies Policy (http://www.morganstanley.com/privacy_pledge.html), including for the purposes of setting your preferences and to collect readership data so that we can deliver better and more personalized service and products to you. To find out more information about how Morgan Stanley processes personal data, how we use cookies and how to reject cookies see our Privacy Policy and our Global Cookies Policy (http://www.morganstanley.com/privacy_pledge.html).

If you do not agree to our Terms of Use and/or if you do not wish to provide your consent to Morgan Stanley processing your personal data or using cookies please do not access our research.

Morgan Stanley Research does not provide individually tailored investment advice. Morgan Stanley Research has been prepared without regard to the circumstances and objectives of those who receive it. Morgan Stanley recommends that investors independently evaluate particular investments and strategies, and encourages investors to seek the advice of a financial adviser. The appropriateness of an investment or strategy will depend on an investor's circumstances and objectives. The securities, instruments, or strategies discussed in Morgan Stanley Research may not be suitable for all investors, and certain investors may not be eligible to purchase or participate in some or all of them. Morgan Stanley Research is not an offer to buy or sell or the solicitation of an offer to buy or sell any security/instrument or to participate in any particular trading strategy. The value of and income from your investments may vary because of changes in interest rates, foreign exchange rates, default rates, prepayment rates, securities/instruments prices, market indexes, operational or financial conditions of companies or other factors. There may be time limitations on the exercise of options or other rights in securities/instruments transactions. Past performance is not necessarily a guide to future performance. Estimates of future performance are based on assumptions that may not be realized. If provided, and unless otherwise stated, the closing price on the cover page is that of the primary exchange for the subject company's securities/instruments.

The fixed income research analysts, strategists or economists principally responsible for the preparation of Morgan Stanley Research have received compensation based upon various factors, including quality, accuracy and value of research, firm profitability or revenues (which include fixed income trading and capital markets profitability or revenues), client feedback and competitive factors. Fixed Income Research analysts', strategists' or economists' compensation is not linked to investment banking or capital markets transactions performed by Morgan Stanley or the profitability or revenues of particular trading desks.

The "Important US Regulatory Disclosures on Subject Companies" section in Morgan Stanley Research lists all companies mentioned where Morgan Stanley owns 1% or more of a class of common equity securities of the companies. For all other companies mentioned in Morgan Stanley Research, Morgan Stanley may have an investment of less than 1% in securities/instruments or derivatives of securities/instruments of companies and may trade them in ways different from those discussed in Morgan Stanley Research. Employees of Morgan Stanley not involved in the preparation of Morgan Stanley Research may have investments in securities/instruments or derivatives of securities/instruments of companies mentioned and may trade them in ways different from those discussed in Morgan Stanley Research. Derivatives may be issued by Morgan Stanley or associated persons.

With the exception of information regarding Morgan Stanley, Morgan Stanley Research is based on public information. Morgan Stanley makes every effort to use reliable, comprehensive information, but we make no representation that it is accurate or complete. We have no obligation to tell you when opinions or information in Morgan Stanley Research change apart from when we intend to discontinue equity research coverage of a subject company. Facts and views presented in Morgan Stanley Research have not been reviewed by, and may not reflect information known to, professionals in other Morgan Stanley business areas, including investment banking personnel.

Morgan Stanley Research personnel may participate in company events such as site visits and are generally prohibited from accepting payment by the company of associated expenses unless pre-approved by authorized members of Research management.

Morgan Stanley may make investment decisions that are inconsistent with the recommendations or views in this report.

To our readers in Taiwan: Information on securities/instruments that trade in Taiwan is distributed by Morgan Stanley Taiwan Limited ("MSTL"). Such information is for your reference only. The reader should independently evaluate the investment risks and is solely responsible for their investment decisions.

Morgan Stanley Research may not be distributed to the public media or quoted or used by the public media without the express written consent of Morgan Stanley. Information on securities/instruments that do not trade in Taiwan is for informational purposes only and is not to be construed as a recommendation or a solicitation to trade in such securities/instruments. MSTL may not execute transactions for clients in these securities/instruments. To our readers in Hong Kong: Information is distributed in Hong Kong by and on behalf of, and is attributable to, Morgan Stanley Asia Limited as part of its regulated activities in Hong Kong. If you have any queries concerning Morgan Stanley Research, please contact our Hong Kong sales representatives.

Morgan Stanley is not incorporated under PRC law and the research in relation to this report is conducted outside the PRC. Morgan Stanley Research does not constitute an offer to sell or the solicitation of an offer to buy any securities in the PRC. PRC investors shall have the relevant qualifications to invest in such securities and shall be responsible for obtaining all relevant approvals, licenses, verifications and/or registrations from the relevant governmental authorities themselves. Neither this report nor any part of it is intended as, or shall constitute, provision of any consultancy or advisory service of securities investment as defined under PRC law. Such information is provided for your reference only.

Morgan Stanley Research is disseminated in Brazil by Morgan Stanley C.T.V.M. S.A.; in Mexico by Morgan Stanley México, Casa de Bolsa, S.A. de C.V. which is regulated by Comision Nacional Bancaria y de Valores, Paseo de los Tamarindos 90, Torre 1, Col. Bosques de las Lomas Floor 29, 05120 Mexico City; in Japan by Morgan Stanley MUFG Securities Co., Ltd. and, for Commodities related research reports only, Morgan Stanley Capital Group Japan Co., Ltd; in Hong Kong by Morgan Stanley Asia Limited (which accepts responsibility for its contents) and by Morgan Stanley Asia International Limited, Hong Kong Branch; in Singapore by Morgan Stanley Asia (Singapore) Pte. (Registration number 199206298Z) and/or Morgan Stanley Asia (Singapore) Securities Pte Ltd (Registration number 200008434H), regulated by the Monetary Authority of Singapore (which accepts legal responsibility for its contents and should be contacted with respect to any matters arising from, or in connection with, Morgan Stanley Research) and by Morgan Stanley Asia International Limited, Singapore Branch (Registration number T11FC0207F); in Australia to "wholesale clients" within the meaning of the Australian Corporations Act by Morgan Stanley Australia Limited A.B.N. 67 003 734 576, holder of Australian financial services license No. 233742, which accepts responsibility for its contents; in Australia to "wholesale clients" and "retail clients" within the meaning of the Australian Corporations Act by Morgan Stanley Wealth Management Australia Pty Ltd (A.B.N. 19 009 145 555, holder of Australian financial services license No. 240813, which accepts responsibility for its contents; in Korea by Morgan Stanley & Co International plc, Seoul Branch; in India by Morgan Stanley India Company Private Limited; in Indonesia by PT Morgan Stanley Asia Indonesia; in Canada by Morgan Stanley Canada Limited, which has approved of and takes responsibility for its contents in Canada; in Germany by Morgan Stanley Bank AG, Frankfurt am Main and Morgan Stanley Private Wealth Management Limited, Niederlassung Deutschland, regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin); 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 Morgan Stanley Research has been written and distributed in accordance with the rules of conduct applicable to financial research as established under Spanish regulations; in the US by Morgan Stanley & Co. LLC, which accepts responsibility for its contents. Morgan Stanley & Co. International plc, authorized by the Prudential Regulatory Authority and regulated by the Financial Conduct Authority and the Prudential Regulatory Authority, disseminates in the UK research that it has prepared, and approves solely for the purposes of section 21 of the Financial Services and Markets Act 2000, research which has been prepared by any of its affiliates. RMB Morgan Stanley (Proprietary) Limited is a member of the JSE Limited and regulated by the Financial Services Board in South Africa. RMB Morgan Stanley (Proprietary) Limited is a joint venture owned equally by Morgan Stanley International Holdings Inc. and RMB Investment Advisory (Proprietary) Limited, which is wholly owned by FirstRand Limited. The information in Morgan Stanley Research is being disseminated by Morgan Stanley Saudi Arabia, regulated by the Capital Market Authority in the Kingdom of Saudi Arabia, and is directed at Sophisticated investors only.

The information in Morgan Stanley Research is being communicated by Morgan Stanley & Co. International plc (DIFC Branch), regulated by the Dubai Financial Services Authority (the DFSA), and is directed at Professional Clients only, as defined by the DFSA. The financial products or financial services to which this research relates will only be made available to a customer who we are satisfied meets the regulatory criteria to be a Professional Client.

The information in Morgan Stanley Research is being communicated by Morgan Stanley & Co. International plc (QFC Branch), regulated by the Qatar Financial Centre Regulatory Authority (the QFCRA), and is directed at business customers and market counterparties only and is not intended for Retail Customers as defined by the QFCRA.

As required by the Capital Markets Board of Turkey, investment information, comments and recommendations stated here, are not within the scope of

investment advisory activity. Investment advisory service is provided exclusively to persons based on their risk and income preferences by the authorized firms. Comments and recommendations stated here are general in nature. These opinions may not fit to your financial status, risk and return preferences. For this reason, to make an investment decision by relying solely to this information stated here may not bring about outcomes that fit your expectations.

The trademarks and service marks contained in Morgan Stanley Research are the property of their respective owners. Third-party data providers make no warranties or representations relating to the accuracy, completeness, or timeliness of the data they provide and shall not have liability for any damages relating to such data. The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and S&P.

Morgan Stanley Research, or any portion thereof may not be reprinted, sold or redistributed without the written consent of Morgan Stanley.

INDUSTRY COVERAGE: Autos & Shared Mobility

COMPANY (TICKER)	RATING (AS OF)	PRICE* (07/07/2016)
Adam Jonas, CFA		
American Axle & Manufacturing Holdings Inc (AXL.N)	U (09/08/2011)	\$14.49
Avis Budget Group Inc (CAR.O)	U (03/19/2013)	\$30.90
BorgWarner Inc. (BWA.N)	U (10/19/2015)	\$29.42
Carmax Inc (KMX.N)	E (11/17/2014)	\$50.44
Delphi Automotive PLC (DLPH.N)	O (04/27/2012)	\$62.69
Ferrari NV (RACE.N)	O (12/07/2015)	\$39.54
Fiat Chrysler Automobiles NV (FCAU.N)	O (02/24/2016)	\$5.72
Fiat Chrysler Automobiles NV (FCHAM)	O (02/24/2016)	€5.54
Ford Motor Company (F.N)	U (09/08/2014)	\$12.75
General Motors Company (GM.N)	E (05/06/2016)	\$28.74
Goodyear Tire & Rubber Company (GT.O)	U (09/06/2011)	\$25.62
Harley-Davidson Inc (HOG.N)	O (05/06/2013)	\$47.82
Harman International Industries Inc. (HAR.N)	U (03/05/2012)	\$71.41
Hertz Global Holdings Inc (HTZ.N)	O (03/11/2016)	\$43.49
Lear Corporation (LEAN)	O (05/07/2012)	\$101.79
Magna International Inc. (MGAN)	O (09/06/2011)	\$33.92
Mobileye NV (MBLY.N)	O (08/26/2014)	\$44.10
Tenneco Inc. (TEN.N)	U (09/23/2010)	\$46.07
Tesla Motors Inc. (TSLA.O)	E (06/23/2016)	\$215.94
Paresh Jain, CFA		
Asbury Automotive Group Inc (ABG.N)	U (09/12/2012)	\$51.59
AutoNation Inc. (AN.N)	O (07/13/2015)	\$48.72
Group 1 Automotive, Inc (GPI.N)	U (10/08/2013)	\$49.34
Lithia Motors Inc. (LAD.N)	O (10/15/2014)	\$73.44
Penske Automotive Group, Inc (PAG.N)	O (09/06/2011)	\$30.46
Sonic Automotive Inc (SAH.N)	O (09/29/2014)	\$17.14

Stock Ratings are subject to change. Please see latest research for each company.

* Historical prices are not split adjusted.