

UBS Evidence Lab Macro

May US Economy – Decelerating Month, Accelerating Quarter

Global Macro Strategy

Global

Ajit Agrawal, PhD
Strategist
ajit.agrawal@ubs.com
+1-212-713 2053

UBS Evidence Lab Macro estimates are driven from big data

Our real-time data points to lower economic growth in May relative to April, and Q2 private domestic demand growth well below Atlanta Fed's GDPNow. We hence believe there is downside risk to the US economic data to be released over the coming weeks, driven primarily from ISM, retail sales and private construction. We see May monthly private domestic demand decelerating below our threshold, which historically suggests a negative outlook for risk assets over the economic release period of the coming 3 weeks. While we see Q2 private domestic demand ahead of Q1 by 1% (+2.2% vs 1.2%), our estimates are much lower than Atlanta Fed's implied estimate of +3.3%, and closer to the US Economics team estimate of +2.4%.

Evidence Lab Macro estimates are independent of UBS US Economics forecasts

Evidence Lab Macro uses real-time big data to assess US economic activities independently of the official UBS US Economics estimates. Q1 real GDP growth, currently reported at 0.5%, is likely to be revised up to a 1.0% rate, and Q2 real GDP growth is tracking at about a 2 ¼% annual rate. Private final domestic demand probably accelerates almost in parallel, a 0.8 pct pt pickup from a revised 1 ½% pace in Q1 to a 2.4% pace in Q2. Activity picked up rapidly in April, and May figures are likely to show a bit less strength. Payrolls probably are lowered by the Verizon strike, and ongoing manufacturing strains slow the ISM. But in a broader sense, the pickup from Q1 to Q2 shows the very limited passthrough of manufacturing sector weakness into the rest of the economy. For the latest from the UBS US Economics team, please see the note "[What to watch in the week ahead](#)".

Q: Where does UBS Evidence Lab Macro differ most from Consensus?

Release Date	Indicator	UBS			St. Dev. vs. Consensus *
		Evidence Lab Macro	UBS US Economics	Consensus/ Actual	
29 Jul	Private Domestic Demand, Δ MM	(0.8)			-0.8
	Private Domestic Demand, Δ Q/Q	1.0%	1.0%	2.1%	-0.6
1 Jun	ISM	49.4	50.0	50.7	-0.8
1 Jun	Auto SAAR MM	0.2%	0.5%	-0.7%	0.5
3 Jun	Payrolls, M-M	175	160	168	0.1
14 Jun	Retail Sales xAuto xGas, SA MM	0.30%		0.4%	-0.3
1 Jul	Private Construction, SA MM	0.2%		0.3%	-0.1
16 Jun	CPI xFood xEnergy, SA MM	0.22%	0.2%	0.19%	0.4
16 Jun	CPI, SA MM	0.26%	0.4%		

* (Evidence Lab Macro - Consensus) / Standard Deviation of (Evidence Lab Macro - Actual)

* For Private Demand, using Atlanta Fed GDP Now estimates (if available) as Consensus

* If Consensus not available, then average of last 6 months of actual; Actual if available

Source: Bloomberg, Atlanta Fed GDPNow, UBS Economics and UBS Evidence Lab Macro

UBS Evidence Lab Macro

Our estimates of US economic indicators are based upon high-frequency public data sources, especially third-parties that contain real-time information on economic activities.

Q: Our indicators vs consensus?

Many of our indicators are showing a deceleration in May relative to April growth – ISM, retail sales, private construction. We expect ISM manufacturing to come in below consensus (49.4e vs 50.7), consistent with recent regional Fed releases. Our permits database is showing slowing growth driven from home remodelling and non-residential construction activities. Retail spending (ex-autos ex-gas) as observed for the partial month, is showing lower growth (+0.3% M/M SA vs +0.6% in April) as recent high growth category like building materials moderates. We expect payrolls to come in around 175K based upon a plethora of indicators we follow. We estimate core CPI to come in around 22bps as we see increasing airfares and used car prices.

Together, we estimate May to show a weaker economic growth than April, with our estimate for the change in monthly Private Domestic Demand growth at -0.8σ .

Q: Our quarterly GDP view vs consensus?

Based upon April and May observations, we continue to see 2Q16 Final Sales to Private Domestic Purchasers (FSPDP) improving relative to 1Q16 (+2.2% vs 1.2%), though May data revises down from our earlier estimate of +2.5% on May 25 (see our note "[US April Retail Sales Signaling Further Q2 Strength](#)"). This puts our estimate for 2Q16 FSPDP well below the Atlanta Fed GDPNow's estimates for 2Q16 FSPDP of +3.3%.

Q: What do these signals imply?

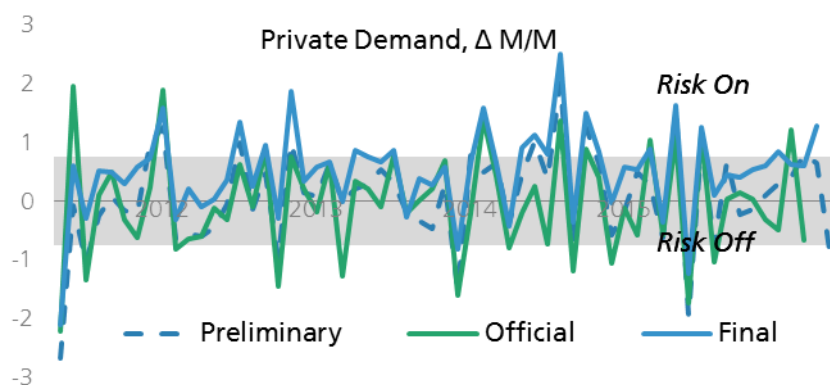
An acceleration (deceleration) above a certain threshold (0.75σ) in the Private Domestic Demand (Δ , M/M) signal has been a Risk On (Off) signal for risk assets and has been historically accompanied on average by positive (negative) returns of 1.6% in the 25 days following the 25th of the reference month for S&P500, and 12bps rise (fall) in 10-Y Treasury yields. For more information, see our note "[Launching Big-Data Driven Early Read on US Economy, Nov 11 2015](#)". Note that our analysis does not control for Fed actions, or other US or international macro events/conditions. With our preliminary estimate of -0.8σ below this threshold for May, on average it points to a risk-off signal for the US risk assets over the next two weeks.

Q: How are UBS Evidence Lab Macro estimates different from UBS US Economics estimates?

UBS Evidence Lab Macro estimates are based upon real-time data collected on economic conditions during the month, and hence use a different set of data and modelling assumptions than the UBS US Economics estimates. The real-time data provides an independent check on the economy's performance, and should be used to frame the risk around potential upside or downside to the UBS US Economics estimates, which remain the firm's official estimates. For more information on UBS Evidence Lab Macro approach, see our note "[Launching Big-Data Driven Early Read on US Economy](#)". For UBS US Economics' latest views, please see the notes "[Trade Deficit Another Sign of Q2 Growth Rebound](#)" and "[What to Watch in the Week Ahead](#)".

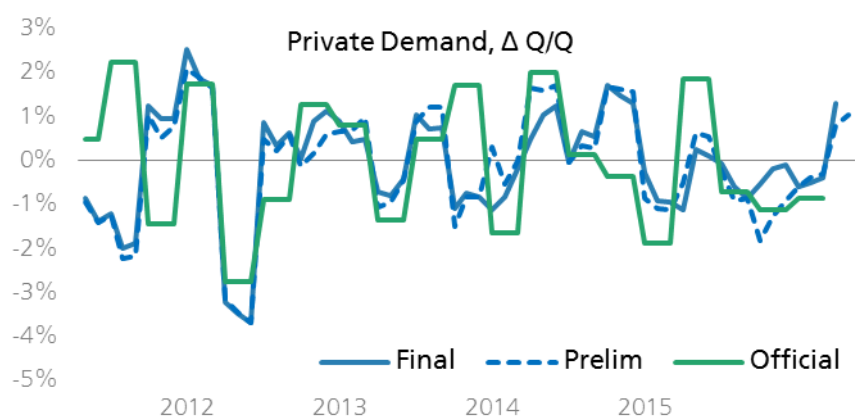
Q: What's the (correct / incorrect) track record for the Evidence Lab Macro signals?

Below we compare the M/M Private Demand acceleration as historically estimated by the Evidence Lab Macro (preliminary as well as fine versions) against the similar index created from the official releases of the same economic indicators. The two signals are in the same direction most of the time. Note that there doesn't exist a corresponding official release for this indicator.



Source: UBS Evidence Lab Macro

The final Q/Q Private Demand acceleration as historically estimated by the Evidence Lab Macro relative to the actual acceleration of Final Sales to Private Domestic Purchasers within GDP is in the same direction 68% of the time.



Source: UBS Evidence Lab Macro

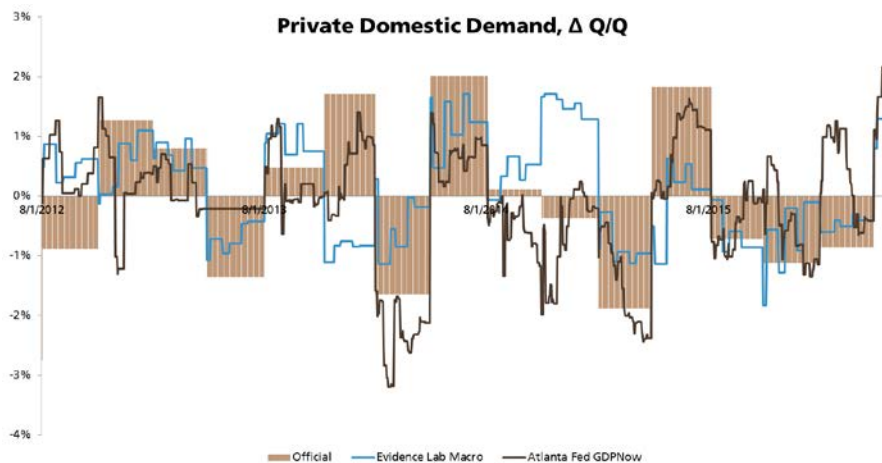
Finally, most of the economic indicators as estimated by Evidence Lab Macro have historically been on the right side of consensus approximately 2/3rd of the time.

	May 2011 ↓	until...	May 2016 ↓	% of signals that were directionally		
Final				Correct	Incorrect	Neutral
Retail Sales				76%	22%	1%
ISM Mfg				64%	36%	0%
Nonfarm Payrolls				62%	38%	0%
Autos SAAR				65%	33%	2%
Private Construction				67%	32%	1%
CPI Core				73%	21%	6%

Source: UBS Evidence Lab Macro

Q: How do UBS Evidence Lab Macro estimates differ from Atlanta Fed's Nowcast?

UBS Evidence Lab Macro also uses a Nowcast approach. However it is fairly different from Atlanta Fed's approach. We estimate 5 key indicators of the economy each month based upon real-time data we collect. We combine them with officially released figures for the same indicators for previous months of the quarter, and create our Private Domestic Demand index. Our access to real-time data sets may provide us with a time advantage. Our goal in creating such an index is to be early in creating our views and detecting acceleration or deceleration of the economy in a timely manner, ahead of the release of official economic indicators. Given that our index is entirely based on only those indicators we track, our goal is not to be precise in tracking the GDP, but to detect inflections earlier than the official figures and other tracking approaches. We compare our historical estimates for acceleration of Private Domestic Demand with Atlanta Fed's estimates below.



Source: Bloomberg, Atlanta Fed GDPNow, and UBS Evidence Lab Macro

**UBS Evidence Lab provides our research analysts with rigorous primary research. The team conducts representative surveys of key sector decision-makers, mines the Internet, systematically collects observable data, and pulls information from other innovative sources. They apply a variety of advanced analytic techniques to derive insights from the data collected. This valuable resource supplies UBS analysts with differentiated information to support their forecasts and recommendations—in turn enhancing our ability to serve the needs of our clients.*

Valuation Method and Risk Statement

Risks of multi-asset investing include but are not limited to market risk, credit risk, interest rate risk, and foreign exchange risk. Correlations of returns among different asset classes may deviate from historical patterns. Geopolitical events and policy shocks pose risks that can reduce asset returns. Valuations may be adversely affected during times of high market volatility, thin liquidity, and economic dislocation.

Required Disclosures

This report has been prepared by UBS Securities LLC, an affiliate of UBS AG. UBS AG, its subsidiaries, branches and affiliates are referred to herein as UBS.

For information on the ways in which UBS manages conflicts and maintains independence of its research product; historical performance information; and certain additional disclosures concerning UBS research recommendations, please visit www.ubs.com/disclosures. The figures contained in performance charts refer to the past; past performance is not a reliable indicator of future results. Additional information will be made available upon request. UBS Securities Co. Limited is licensed to conduct securities investment consultancy businesses by the China Securities Regulatory Commission. UBS acts or may act as principal in the debt securities (or in related derivatives) that may be the subject of this report.

Analyst Certification: Each research analyst primarily responsible for the content of this research report, in whole or in part, certifies that with respect to each security or issuer that the analyst covered in this report: (1) all of the views expressed accurately reflect his or her personal views about those securities or issuers and were prepared in an independent manner, including with respect to UBS, and (2) no part of his or her compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed by that research analyst in the research report.

Unless otherwise indicated, please refer to the Valuation and Risk sections within the body of this report. For a complete set of disclosure statements associated with the companies discussed in this report, including information on valuation and risk, please contact UBS Securities LLC, 1285 Avenue of Americas, New York, NY 10019, USA, Attention: Investment Research.

Global Disclaimer

This document has been prepared by UBS Securities LLC, an affiliate of UBS AG. UBS AG, its subsidiaries, branches and affiliates are referred to herein as UBS.

Global Research is provided to our clients through UBS Neo and, in certain instances, UBS.com (each a "System"). It may also be made available through third party vendors and distributed by UBS and/or third parties via e-mail or alternative electronic means. The level and types of services provided by Global Research to a client may vary depending upon various factors such as a client's individual preferences as to the frequency and manner of receiving communications, a client's risk profile and investment focus and perspective (e.g. market wide, sector specific, long-term, short-term, etc.), the size and scope of the overall client relationship with UBS and legal and regulatory constraints.

All Global Research is available on UBS Neo. Please contact your UBS sales representative if you wish to discuss your access to UBS Neo.

When you receive Global Research through a System, your access and/or use of such Global Research is subject to this Global Research Disclaimer and to the terms of use governing the applicable System.

When you receive Global Research via a third party vendor, e-mail or other electronic means, your use shall be subject to this Global Research Disclaimer and to UBS's Terms of Use/Disclaimer (<http://www.ubs.com/global/en/legalinfo2/disclaimer.html>). By accessing and/or using Global Research in this manner, you are indicating that you have read and agree to be bound by our Terms of Use/Disclaimer. In addition, you consent to UBS processing your personal data and using cookies in accordance with our Privacy Statement (<http://www.ubs.com/global/en/legalinfo2/privacy.html>) and cookie notice (<http://www.ubs.com/global/en/homepage/cookies/cookie-management.html>).

If you receive Global Research, whether through a System or by any other means, you agree that you shall not copy, revise, amend, create a derivative work, transfer to any third party, or in any way commercially exploit any UBS research provided via Global Research or otherwise, and that you shall not extract data from any research or estimates provided to you via Global Research or otherwise, without the prior written consent of UBS.

This document is for distribution only as may be permitted by law. It is not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction where such distribution, publication, availability or use would be contrary to law or regulation or would subject UBS to any registration or licensing requirement within such jurisdiction. It is published solely for information purposes; it is not an advertisement nor is it a solicitation or an offer to buy or sell any financial instruments or to participate in any particular trading strategy. No representation or warranty, either expressed or implied, is provided in relation to the accuracy, completeness or reliability of the information contained in this document ('the Information'), except with respect to Information concerning UBS. The Information is not intended to be a complete statement or summary of the securities, markets or developments referred to in the document. UBS does not undertake to update or keep current the Information. Any opinions expressed in this document may change without notice and may differ or be contrary to opinions expressed by other business areas or groups of UBS. Any statements contained in this report attributed to a third party represent UBS's interpretation of the data, information and/or opinions provided by that third party either publicly or through a subscription service, and such use and interpretation have not been reviewed by the third party.

Nothing in this document constitutes a representation that any investment strategy or recommendation is suitable or appropriate to an investor's individual circumstances or otherwise constitutes a personal recommendation. Investments involve risks, and investors should exercise prudence and their own judgement in making their investment decisions. The financial instruments described in the document may not be eligible for sale in all jurisdictions or to certain categories of investors. Options, derivative products and futures are not suitable for all investors, and trading in these instruments is considered risky. Mortgage and asset-backed securities may involve a high degree of risk and may be highly volatile in response to fluctuations in interest rates or other market conditions. Foreign currency rates of exchange may adversely affect the value, price or income of any security or related instrument referred to in the document. For investment advice, trade execution or other enquiries, clients should contact their local sales representative.

The value of any investment or income may go down as well as up, and investors may not get back the full (or any) amount invested. Past performance is not necessarily a guide to future performance. Neither UBS nor any of its directors, employees or agents accepts any liability for any loss (including investment loss) or damage arising out of the use of all or any of the Information.

Any prices stated in this document are for information purposes only and do not represent valuations for individual securities or other financial instruments. There is no representation that any transaction can or could have been effected at those prices, and any prices do not necessarily reflect UBS's internal books and records or theoretical model-based valuations and may be based on certain assumptions. Different assumptions by UBS or any other source may yield substantially different results.

This document and the Information are produced by UBS as part of its research function and are provided to you solely for general background information. UBS has no regard to the specific investment objectives, financial situation or particular needs of any specific recipient. In no circumstances may this document or any of the Information be used for any of the following purposes:

- (i) valuation or accounting purposes;
- (ii) to determine the amounts due or payable, the price or the value of any financial instrument or financial contract; or
- (iii) to measure the performance of any financial instrument.

By receiving this document and the Information you will be deemed to represent and warrant to UBS that you will not use this document or any of the Information for any of the above purposes or otherwise rely upon this document or any of the Information.

Research will initiate, update and cease coverage solely at the discretion of UBS Investment Bank Research Management. The analysis contained in this document is based on numerous assumptions. Different assumptions could result in materially different results. The analyst(s) responsible for the preparation of this document may interact with trading desk personnel, sales personnel and other parties for the purpose of gathering, applying and interpreting market information. UBS relies on information barriers to control the flow of information contained in one or more areas within UBS into other areas, units, groups or affiliates of UBS. The compensation of the analyst who prepared this document is determined exclusively by research management and senior management (not including investment banking). Analyst compensation is not based on investment banking revenues; however, compensation may relate to the revenues of UBS Investment Bank as a whole, of which investment banking, sales and trading are a part.

For financial instruments admitted to trading on an EU regulated market: UBS AG, its affiliates or subsidiaries (excluding UBS Securities LLC) acts as a market maker or liquidity provider (in accordance with the interpretation of these terms in the UK) in the financial instruments of the issuer save that where the activity of liquidity provider is carried out in accordance with the definition given to it by the laws and regulations of any other EU jurisdictions, such information is separately disclosed in this document. For financial instruments admitted to trading on a non-EU regulated market: UBS may act as a market maker save that where this activity is carried out in the US in accordance with the definition given to it by the relevant laws and regulations, such activity will be specifically disclosed in this document. UBS may have issued a warrant the value of which is based on one or more of the financial instruments referred to in the document. UBS and its affiliates and employees may have long or short positions, trade as principal and buy and sell in instruments or derivatives identified herein; such transactions or positions may be inconsistent with the opinions expressed in this document.

United Kingdom and the rest of Europe: Except as otherwise specified herein, this material is distributed by UBS Limited to persons who are eligible counterparties or professional clients. UBS Limited is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. **France:** Prepared by UBS Limited and distributed by UBS Limited and UBS Securities France S.A. UBS Securities France S.A. is regulated by the ACPR (Autorité de Contrôle Prudentiel et de Résolution) and the Autorité des Marchés Financiers (AMF). Where an analyst of UBS Securities France S.A. has contributed to this document, the document is also deemed to have been prepared by UBS Securities France S.A. **Germany:** Prepared by UBS Limited and distributed by UBS Limited and UBS Deutschland AG. UBS Deutschland AG is regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin). **Spain:** Prepared by UBS Limited and distributed by UBS Limited and UBS Securities España SV, SA. UBS Securities España SV, SA is regulated by the Comisión Nacional del Mercado de Valores (CNMV). **Turkey:** Distributed by UBS Limited. No information in this document is provided for the purpose of offering, marketing and sale by any means of any capital market instruments and services in the Republic of Turkey. Therefore, this document may not be considered as an offer made or to be made to residents of the Republic of Turkey. UBS AG is not licensed by the Turkish Capital Market Board under the provisions of the Capital Market Law (Law No. 6362). Accordingly, neither this document nor any other offering material related to the instruments/services may be utilized in connection with providing any capital market services to persons within the Republic of Turkey without the prior approval of the Capital Market Board. However, according to article 15 (d) (ii) of the Decree No. 32, there is no restriction on the purchase or sale of the securities abroad by residents of the Republic of Turkey. **Poland:** Distributed by UBS Limited (spółka z ograniczoną odpowiedzialnością) Oddział w Polsce regulated by the Polish Financial Supervision Authority. Where an analyst of UBS Limited (spółka z ograniczoną odpowiedzialnością) Oddział w Polsce has contributed to this

document, the document is also deemed to have been prepared by UBS Limited (spółka z ograniczoną odpowiedzialnością) Oddział w Polsce. **Russia:** Prepared and distributed by UBS Bank (OOO). **Switzerland:** Distributed by UBS AG to persons who are institutional investors only. UBS AG is regulated by the Swiss Financial Market Supervisory Authority (FINMA). **Italy:** Prepared by UBS Limited and distributed by UBS Limited and UBS Limited, Italy Branch. Where an analyst of UBS Limited, Italy Branch has contributed to this document, the document is also deemed to have been prepared by UBS Limited, Italy Branch. **South Africa:** Distributed by UBS South Africa (Pty) Limited (Registration No. 1995/011140/07), an authorised user of the JSE and an authorised Financial Services Provider (FSP 7328). **Israel:** This material is distributed by UBS Limited. UBS Limited is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. UBS Securities Israel Ltd is a licensed Investment Marketer that is supervised by the Israel Securities Authority (ISA). UBS Limited and its affiliates incorporated outside Israel are not licensed under the Israeli Advisory Law. UBS Limited is not covered by insurance as required from a licensee under the Israeli Advisory Law. UBS may engage among others in issuance of Financial Assets or in distribution of Financial Assets of other issuers for fees or other benefits. UBS Limited and its affiliates may prefer various Financial Assets to which they have or may have Affiliation (as such term is defined under the Israeli Advisory Law). Nothing in this Material should be considered as investment advice under the Israeli Advisory Law. This Material is being issued only to and/or is directed only at persons who are Eligible Clients within the meaning of the Israeli Advisory Law, and this material must not be relied on or acted upon by any other persons. **Saudi Arabia:** This document has been issued by UBS AG (and/or any of its subsidiaries, branches or affiliates), a public company limited by shares, incorporated in Switzerland with its registered offices at Aeschenvorstadt 1, CH-4051 Basel and Bahnhofstrasse 45, CH-8001 Zurich. This publication has been approved by UBS Saudi Arabia (a subsidiary of UBS AG), a Saudi closed joint stock company incorporated in the Kingdom of Saudi Arabia under commercial register number 1010257812 having its registered office at Tatweer Towers, P.O. Box 75724, Riyadh 11588, Kingdom of Saudi Arabia. UBS Saudi Arabia is authorized and regulated by the Capital Market Authority to conduct securities business under license number 08113-37. **Dubai:** The information distributed by UBS AG Dubai Branch is intended for Professional Clients only and is not for further distribution within the United Arab Emirates. **United States:** Distributed to US persons by either UBS Securities LLC or by UBS Financial Services Inc., subsidiaries of UBS AG; or by a group, subsidiary or affiliate of UBS AG that is not registered as a US broker-dealer (a "non-US affiliate") to major US institutional investors only. UBS Securities LLC or UBS Financial Services Inc. accepts responsibility for the content of a document prepared by another non-US affiliate when distributed to US persons by UBS Securities LLC or UBS Financial Services Inc. All transactions by a US person in the securities mentioned in this document must be effected through UBS Securities LLC or UBS Financial Services Inc., and not through a non-US affiliate. UBS Securities LLC is not acting as a municipal advisor to any municipal entity or obligated person within the meaning of Section 15B of the Securities Exchange Act (the "Municipal Advisor Rule"), and the opinions or views contained herein are not intended to be, and do not constitute, advice within the meaning of the Municipal Advisor Rule. **Canada:** Distributed by UBS Securities Canada Inc., a registered investment dealer in Canada and a Member-Canadian Investor Protection Fund, or by another affiliate of UBS AG that is registered to conduct business in Canada or is otherwise exempt from registration. **Brazil:** Except as otherwise specified herein, this material is prepared by UBS Brasil CCTVM S.A. to persons who are eligible investors residing in Brazil, which are considered to be: (i) financial institutions, (ii) insurance firms and investment capital companies, (iii) supplementary pension entities, (iv) entities that hold financial investments higher than R\$300,000.00 and that confirm the status of qualified investors in written, (v) investment funds, (vi) securities portfolio managers and securities consultants duly authorized by Comissão de Valores Mobiliários (CVM), regarding their own investments, and (vii) social security systems created by the Federal Government, States, and Municipalities. **Hong Kong:** Distributed by UBS Securities Asia Limited and/or UBS AG, Hong Kong Branch. **Singapore:** Distributed by UBS Securities Pte. Ltd. [MCI (P) 018/09/2015 and Co. Reg. No.: 198500648C] or UBS AG, Singapore Branch. Please contact UBS Securities Pte. Ltd., an exempt financial adviser under the Singapore Financial Advisers Act (Cap. 110); or UBS AG, Singapore Branch, an exempt financial adviser under the Singapore Financial Advisers Act (Cap. 110) and a wholesale bank licensed under the Singapore Banking Act (Cap. 19) regulated by the Monetary Authority of Singapore, in respect of any matters arising from, or in connection with, the analysis or document. The recipients of this document represent and warrant that they are accredited and institutional investors as defined in the Securities and Futures Act (Cap. 289). **Japan:** Distributed by UBS Securities Japan Co., Ltd. to professional investors (except as otherwise permitted). Where this document has been prepared by UBS Securities Japan Co., Ltd., UBS Securities Japan Co., Ltd. is the author, publisher and distributor of the document. Distributed by UBS AG, Tokyo Branch to Professional Investors (except as otherwise permitted) in relation to foreign exchange and other banking businesses when relevant. **Australia:** Clients of UBS AG: Distributed by UBS AG (Holder of Australian Financial Services License No. 231087). Clients of UBS Securities Australia Ltd: Distributed by UBS Securities Australia Ltd (Holder of Australian Financial Services License No. 231098). Clients of UBS Wealth Management Australia Ltd: Distributed by UBS Wealth Management Australia Ltd (Holder of Australian Financial Services License No. 231127). This Document contains general information and/or general advice only and does not constitute personal financial product advice. As such, the Information in this document has been prepared without taking into account any investor's objectives, financial situation or needs, and investors should, before acting on the Information, consider the appropriateness of the Information, having regard to their objectives, financial situation and needs. If the Information contained in this document relates to the acquisition, or potential acquisition of a particular financial product by a 'Retail' client as defined by section 761G of the Corporations Act 2001 where a Product Disclosure Statement would be required, the retail client should obtain and consider the Product Disclosure Statement relating to the product before making any decision about whether to acquire the product. The UBS Securities Australia Limited Financial Services Guide is available at: www.ubs.com/ecs-research-fsg. **New Zealand:** Distributed by UBS New Zealand Ltd. The information and recommendations in this publication are provided for general information purposes only. To the extent that any such information or recommendations constitute financial advice, they do not take into account any person's particular financial situation or goals. We recommend that recipients seek advice specific to their circumstances from their financial advisor. **Korea:** Distributed in Korea by UBS Securities Pte. Ltd., Seoul Branch. This document may have been edited or contributed to from time to time by affiliates of UBS Securities Pte. Ltd., Seoul Branch. **Malaysia:** This material is authorized to be distributed in Malaysia by UBS Securities Malaysia Sdn. Bhd (Capital Markets Services License No.: CMSL/A0063/2007). This material is intended for professional/institutional clients only and not for distribution to any retail clients. **India:** Prepared by UBS Securities India Private Ltd. (Corporate Identity Number U67120MH1996PTC097299) 2/F, 2 North Avenue, Maker Maxity, Bandra Kurla Complex, Bandra (East), Mumbai (India) 400051. Phone: +912261556000. It provides brokerage services bearing SEBI Registration Numbers: NSE (Capital Market Segment): INB230951431, NSE (F&O Segment) INF230951431, NSE (Currency Derivatives Segment) INE230951431, BSE (Capital Market Segment) INB010951437; merchant banking services bearing SEBI Registration Number: INM000010809 and Research Analyst services bearing SEBI Registration Number: INH000001204. UBS AG, its affiliates or subsidiaries may have debt holdings or positions in the subject Indian company/companies. Within the past 12 months, UBS AG, its affiliates or subsidiaries may have received compensation for non-investment banking securities-related services and/or non-securities services from the subject Indian company/companies. The subject company/companies may have been a client/clients of UBS AG, its affiliates or subsidiaries during the 12 months preceding the date of distribution of the research report with respect to investment banking and/or non-investment banking securities-related services and/or non-securities services. With regard to information on associates, please refer to the Annual Report at: http://www.ubs.com/global/en/about_ubs/investor_relations/annualreporting.html

The disclosures contained in research documents produced by UBS Limited shall be governed by and construed in accordance with English law.

UBS specifically prohibits the redistribution of this document in whole or in part without the written permission of UBS and UBS accepts no liability whatsoever for the actions of third parties in this respect. Images may depict objects or elements that are protected by third party copyright, trademarks and other intellectual property rights. © UBS 2016. The key symbol and UBS are among the registered and unregistered trademarks of UBS. All rights reserved.

