Coherus

Takeaways from Management Meeting: Well-Positioned in the Emerging Biosimilars Market

Overweight

CHRS, CHRS US
Price: $27.11

▲ **Price Target: $35.00**
Previous: $20.00

We recently met with Coherus's management, including CEO Denny Lanfear and CFO Jean Viret, and wanted to provide our updated thoughts on the story. With biosimilars increasingly in focus, we see Coherus as well-positioned in this emerging market with three molecules expected to be in BLA-enabling studies this year, an earlier-stage development platform, and a highly experienced management team. Remain OW.

- **We have seen increased focus on biosimilars following Sandoz's pegfilgrastim FDA panel and recent M&A activity in the space.** Over the past few weeks, we have seen increased focus on biosimilars, particularly following the positive FDA advisory panel on Sandoz's biosimilar filgrastim (which has de-risked the space to some extent) as well as recent M&A activity in the space (including Pfizer's proposed acquisition of Hospira). We are also watching a number of other broader biosimilar updates through 2015, including the ongoing Inflectra rollout in key European markets as well as the Inflectra FDA advisory panel on March 17. Please see page 3 for a list of upcoming catalysts.
- **We continue to see IP as a key controversy in the biosimilar market development.** Intellectual property presents potential barriers to entry for the biosimilar market with originators in some cases developing large IP portfolios around their products (largely focused on manufacturing process). Coherus seeks to minimize patent risk by designing around this IP and by not infringing on originator patents, and the company is seeking to patent its own IP covering the formulation and manufacturing of its biosimilar products. We note that the patent resolution process set forth in the BPCIA runs concurrently with regulatory review and does not trigger the 30-month regulatory delay seen with traditional small molecules.
- **In addition, we expect strong payer support and fairly rational pricing for biosimilars.** Given the recent discussion around specialty pricing pressure, we continue to see strong payer support for biosimilars. Coherus has been in discussions with payers in regards to phase III clinical trial designs, and noted that the company expects payers to ultimately have one or two biosimilars for each molecule on formulary. We continue to see biosimilar pricing settling out at a 30-40% discount to innovator pricing and do not see small molecule-like 80%+ price reductions given the high clinical barriers to entry in the space, as well as the relatively few number of biosimilar competitors for most molecules.

Pharmaceuticals — Major & Specialty

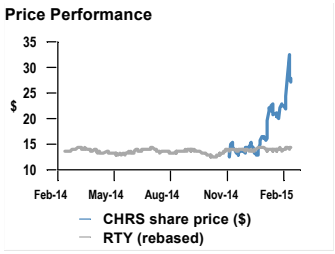
Chris Schott, CFA AC
(1-212) 622-5676
christopher.t.schott@jpmorgan.com
Bloomberg JPMA SCHOTT <GO>

Wendy L Lin
(1-212) 622-5350
wendy.l.lin@jpmorgan.com

Aditi Singhania, PhD
(1-212) 622-1267
aditi.singhania@jpmorgan.com

Dana Flanders, CFA
(1-212) 622-1256
dana.c.flanders@jpmorgan.com

J.P. Morgan Securities LLC



	YTD	1m	3m	12m
Abs	71.4%	20.8%	95.0%	100.8 %
Rel	69.9%	17.2%	90.9%	94.2%

Coherus BioSciences, Inc. (CHRS;CHRS US)

FYE Dec	2012A	2013A	2014E	2015E	2016E (Prev)	2016E (Curr)
EPS Adjusted ($)						
Q1 (Mar)	-	-	-	-	-	-
Q2 (Jun)	-	-	-	-	-	-
Q3 (Sep)	-	-	-	-	-	-
Q4 (Dec)	-	-	-	-	-	-
FY	(9.51)	(9.66)	(5.75)	(2.98)	(3.05)	(3.46)

Source: Company data, Bloomberg, J.P. Morgan estimates.

Company Data	
Price ($)	27.11
Date Of Price	13 Feb 15
52-week Range ($)	32.95-12.27
Market Cap ($ mn)	345,272.50
Fiscal Year End	Dec
Shares O/S (mn)	12,736
Price Target ($)	35.00
Price Target End Date	31-Dec-15

See page 6 for analyst certification and important disclosures.

- **CHS-1420 (biosimilar Humira) remains a key value driver and we expect a phase III start in 2015.** We expect Coherus to start a phase III CHS-1420 (biosimilar adalimumab/Humira) in 2015, which would position Coherus to have phase III data in 2016 and potentially launch in 2017. Humira is currently a ~$12.5bn franchise and we believe even modest market penetration would translate to a significant commercial opportunity for CHS-1420. We will continue to watch IP dynamics with Humira (dosing patent read-across from recent Herceptin UK invalidity ruling, etc.) but we anticipate 2017 US/2018 EU biosimilar entry.
- **CHS-1701 (biosimilar Neulasta) also represents a significant opportunity and we expect several updates in 2015.** Coherus expects to disclose development plans for CHS-1701 (biosimilar pegfilgrastim/Neulasta) in 2Q15 and remains committed to a BLA-enabling trial in 2015. We expect to see data from this study in late 2015/early 2016 and for Coherus to file the product shortly thereafter. Neulasta is a ~$4.5bn franchise with a large US sales component and we expect rapid and potentially substantial biosimilar penetration given the drug's hospital administration and the rapid patient churn. This view is consistent with the European G-CSF biosimilar market formation.
- **CHS-0214 (biosimilar Enbrel): We continue to expect phase III readouts in 2016.** We continue to expect readouts from the phase III CHS-0214 (biosimilar etanercept/Enbrel) studies in psoriasis and rheumatoid arthritis in 2016, which would set up a 2016 EMA filing for the asset. As a reminder, CHS-0214 is primarily an ex-US opportunity at this point and is partnered with Baxter and Daiichi.
- **While we see Coherus commercializing CHS-1701 and CHS-1420 alone, we cannot rule out strategic interest in the business over time.** Although we see Coherus commercializing wholly owned CHS-1701 and CHS-1420 on its own, we cannot rule out strategic interest in the business over time, particularly after the BLAs for the company's lead products are filed. We see Coherus as an attractive strategic asset, particularly with a number of large players expressing interest in the biosimilars space.

Figure 1: Select Upcoming Catalysts
$ in millions

Timing	Company	Product	Event
Ongoing	Coherus	CHS-0214 (biosimilar Enbrel)	Phase III in RA
Ongoing	Coherus	CHS-0214 (biosimilar Enbrel)	Phase III in Psoriasis
Ongoing	Amgen/Sandoz		Ongoing Amgen/Sandoz Litigation
Ongoing		Inflectra (biosimilar Remicade)	Launch in major EU markets
2015-2016	Coherus		Exploring commercialization strategy/potential partnerships
March 2015		Inflectra (biosimilar Remicade)	FDA Advisory Panel
2Q15	Coherus	CHS-1701 (biosimilar Neulasta)	Disclosure of development strategy
2015	Coherus	CHS-1420 (biosimilar Humira)	Phase III Start
2015	Coherus	CHS-1701 (biosimilar Neulasta)	Registration-enabling study start
4Q15/1Q16	Coherus	CHS-1701 (biosimilar Neulasta)	Registration-enabling study results
4Q15/1Q16	Coherus	CHS-1701 (biosimilar Neulasta)	US Filing
2016	Coherus	CHS-0214 (biosimilar Enbrel)	EU Filing
2016	Coherus	CHS-1420 (biosimilar Humira)	US Filing
4Q16/1Q17	Coherus	CHS-1701 (biosimilar Neulasta)	Potential US Launch
Early 2017	Coherus	CHS-1701 (biosimilar Neulasta)	Potential EU Launch
2017	Coherus	CHS-0214 (biosimilar Enbrel)	Potential EU Launch
2017	Coherus	CHS-1420 (biosimilar Humira)	Potential US Launch
2017	Coherus	CHS-1420 (biosimilar Humira)	EU Filing
Early 2018	Coherus	CHS-1701 (biosimilar Neulasta)	Potential EU Launch
2018	Coherus	CHS-1420 (biosimilar Humira)	Potential EU Launch

Source: Company reports and J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Coherus *(Overweight; Price Target: $35.00)*

Investment Thesis

Maintain Overweight rating. We expect a range of biosimilars will launch over the next 5-10 years with biologic products with ~$100 billion in annual sales losing patent protection through 2020. Coherus is a pure-play on this opportunity with three lead biosimilar candidates (biosimilar versions of Humira, Enbrel, and Neulasta), all of which will have entered late-stage clinical development by early 2015. These products target several of the largest biologics currently on the market, with 2014 branded sales in Coherus's targeted markets expected to reach roughly $20 billion in 2014. Assuming a modest biosimilar market share and 4-5 competitors per market, we see Coherus generating roughly $650 million in revenue by 2020, growing to roughly $1.1 billion by 2025.

Valuation

Increasing Dec-15 price target to $35, based higher peak sales for CHRS biosimilar Neulasta as well as a number of positive updates in the biosimilar space over the past month (which we see as de-risking CHRS's development program). Using a risk-adjusted DCF analysis, we arrive at a December 2015 price target of $35. We assume that Baxter launches CHS-0214 in Europe in 2017 and that Coherus launches CHS-1420 in the US in 2017 and in Europe in 2018 and CHS-1701 in the US in 2017 and in Europe in 2018.

We estimate a weighted average cost of capital (WACC) of 11%, which is consistent with WACC estimates for companies of Coherus's size and development stage due to the risk of the company's business model relative to more established branded pharma companies with commercialized products. We use a terminal decline of 1%

past 2030. We also risk adjust our enterprise value with an 80% probability of success.

Risks to Rating and Price Target

Risks to the downside include 1) uncertainty surrounding the IP and patent resolution process, 2) biosimilars might not achieve the market penetration we have forecast, 3) Coherus could face more competitors and experience more price competition than anticipated, and 4) the company will need to raise additional capital or seek a partner for its products prior to commercialization.

Chris Schott, CFA
(1-212) 622-5676
christopher.t.schott@jpmorgan.com

Coherus: Summary of Financials

Income Statement - Annual	FY13A	FY14E	FY15E	FY16E	Income Statement - Quarterly	1Q14A	2Q14A	3Q14A	4Q14E
Revenues	2,751	35,045	2,500	52,500	Revenues	-	-	-	-
Cost of products sold	0	0	0	0	Cost of products sold	-	-	-	-
Gross profit	-	-	-	-	Gross profit	-	-	-	-
SG&A	(7,465)	(15,378)	(20,000)	(90,000)	SG&A	-	-	-	-
R&D	(31,279)	(71,357)	(80,000)	(90,000)	R&D	-	-	-	-
Operating income	(35,993)	(51,690)	(97,500)	(127,500)	Operating income	-	-	-	-
Net interest (income) / expense	(5,293)	(5,400)	0	0	Net interest (income) / expense	-	-	-	-
Other income / (expense)	(12,349)	(16,132)	0	0	Other income / (expense)	-	-	-	-
Pretax income	(53,635)	(73,222)	(97,500)	(127,500)	Pretax income	-	-	-	-
Income taxes	0	0	0	0	Income taxes	0A	0A	0A	0
Net income - recurring	(53,635)	(73,222)	(97,500)	(127,500)	Net income - recurring	0A	0A	0A	0
Diluted shares outstanding	-	-	-	-	Diluted shares outstanding	-	-	-	-
EPS - excluding non-recurring	(9.66)	(5.75)	(2.98)	(3.46)	EPS - excluding non-recurring	-	-	-	-
EPS - recurring	(9.66)	(5.75)	(2.98)	(3.46)	EPS - recurring	-	-	-	-

Balance Sheet and Cash Flow Data	FY13A	FY14E	FY15E	FY16E	Ratio Analysis	FY13A	FY14E	FY15E	FY16E
Cash and cash equivalents	39,554	170,682	78,832	105,177	Sales growth	44.9%	1173.9%	(92.9%)	2000.0%
Short Term Investment	-	-	-	-	EBIT growth	(6.6%)	43.6%	88.6%	30.8%
Accounts receivable	385	407	507	5,412	EPS growth - recurring	1.5%	(40.5%)	(48.1%)	16.0%
Inventories	-	-	-	-					
Other current assets	5,738	5,738	5,738	5,738	Gross margin	-	-	-	-
Current assets	45,677	176,827	85,077	116,327	EBIT margin	(1308.4%)	(147.5%)	(3900.0%)	(242.9%)
PP&E	1,743	1,993	2,243	2,493					
Total assets	47,447	178,847	87,347	118,847	Tax rate	0.0%	0.0%	0.0%	0.0%
					Net Profit Margin	(1949.7%)	(208.9%)	(3900.0%)	(242.9%)
Total debt	28,454	28,454	28,454	28,454					
Total liabilities	144,524	145,222	146,222	146,222					
Shareholders' equity	(97,077)	33,625	(58,875)	(27,375)					
Net income (including charges)	(53,635)	(73,222)	(97,500)	(127,500)					
D&A	404	0	0	0					
Change in working capital	41,415	0	900	(4,905)					
Other	17,615	119,555	0	0					
Cash flow from operations	15,423	46,333	(96,600)	(132,405)					
Capex	(373)	(250)	(250)	(250)					
Free cash flow	20,343	51,483	(96,850)	(132,655)					
Cash flow from investing activities	(373)	(250)	(250)	(250)					
Cash flow from financing activities	9,956	85,000	5,000	159,000					

Source: Company reports and J.P. Morgan estimates.
Note: $ in millions (except per-share data).Fiscal year ends Dec

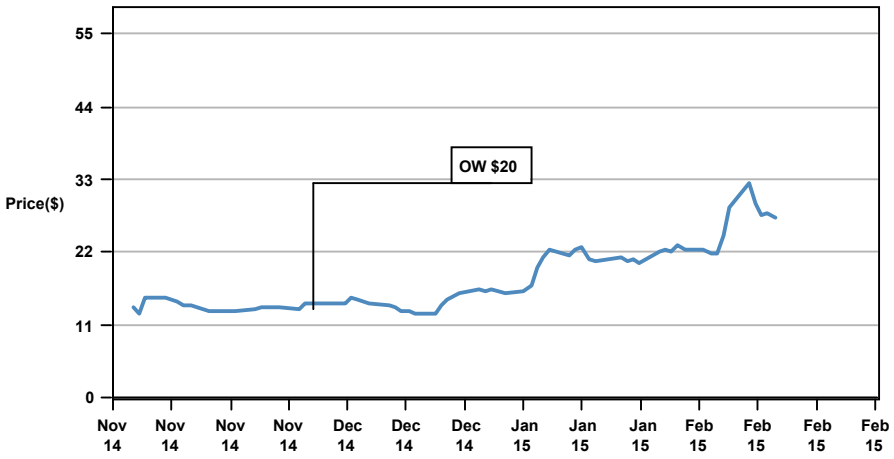
Analyst Certification: The research analyst(s) denoted by an "AC" on the cover of this report certifies (or, where multiple research analysts are primarily responsible for this report, the research analyst denoted by an "AC" on the cover or within the document individually certifies, with respect to each security or issuer that the research analyst covers in this research) that: (1) all of the views expressed in this report accurately reflect his or her personal views about any and all of the subject securities or issuers; and (2) no part of any of the research analyst's compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed by the research analyst(s) in this report. For all Korea-based research analysts listed on the front cover, they also certify, as per KOFIA requirements, that their analysis was made in good faith and that the views reflect their own opinion, without undue influence or intervention.

Important Disclosures

- **Market Maker:** JPMS makes a market in the stock of Coherus.
- **Lead or Co-manager:** J.P. Morgan acted as lead or co-manager in a public offering of equity and/or debt securities for Coherus within the past 12 months.
- **Client:** J.P. Morgan currently has, or had within the past 12 months, the following company(ies) as clients: Coherus.
- **Client/Investment Banking:** J.P. Morgan currently has, or had within the past 12 months, the following company(ies) as investment banking clients: Coherus.
- **Investment Banking (past 12 months):** J.P. Morgan received in the past 12 months compensation from investment banking Coherus.
- **Investment Banking (next 3 months):** J.P. Morgan expects to receive, or intends to seek, compensation for investment banking services in the next three months from Coherus.

Company-Specific Disclosures: Important disclosures, including price charts and credit opinion history tables, are available for compendium reports and all J.P. Morgan–covered companies by visiting https://jpmm.com/research/disclosures, calling 1-800-477-0406, or e-mailing research.disclosure.inquiries@jpmorgan.com with your request. J.P. Morgan's Strategy, Technical, and Quantitative Research teams may screen companies not covered by J.P. Morgan. For important disclosures for these companies, please call 1-800-477-0406 or e-mail research.disclosure.inquiries@jpmorgan.com.

Coherus (CHRS, CHRS US) Price Chart



Date	Rating	Share Price ($)	Price Target ($)
02-Dec-14	OW	13.37	20.00

Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends.
Initiated coverage Dec 02, 2014.

The chart(s) show J.P. Morgan's continuing coverage of the stocks; the current analysts may or may not have covered it over the entire period.
J.P. Morgan ratings or designations: OW = Overweight, N= Neutral, UW = Underweight, NR = Not Rated

Explanation of Equity Research Ratings, Designations and Analyst(s) Coverage Universe:
J.P. Morgan uses the following rating system: Overweight [Over the next six to twelve months, we expect this stock will outperform the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] Neutral [Over the next six to twelve months, we expect this stock will perform in line with the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] Underweight [Over the next six to twelve months, we expect this stock will underperform the average total return of

the stocks in the analyst's (or the analyst's team's) coverage universe.] Not Rated (NR): J.P. Morgan has removed the rating and, if applicable, the price target, for this stock because of either a lack of a sufficient fundamental basis or for legal, regulatory or policy reasons. The previous rating and, if applicable, the price target, no longer should be relied upon. An NR designation is not a recommendation or a rating. In our Asia (ex-Australia) and U.K. small- and mid-cap equity research, each stock's expected total return is compared to the expected total return of a benchmark country market index, not to those analysts' coverage universe. If it does not appear in the Important Disclosures section of this report, the certifying analyst's coverage universe can be found on J.P. Morgan's research website, www.jpmorganmarkets.com.

Coverage Universe: Schott, Christopher: AbbVie (ABBV), Actavis plc (ACT), Allergan (AGN), Amarin Corporation (AMRN), Bristol-Myers Squibb Company (BMY), Coherus (CHRS), Eli Lilly & Company (LLY), Endo International PLC (ENDP), Hospira, Inc. (HSP), Impax Laboratories (IPXL), Kythera Biopharmaceuticals (KYTH), Mallinckrodt (MNK), Merck & Co., Inc. (MRK), Mylan Inc. (MYL), Perrigo Company (PRGO), Pfizer Inc. (PFE), Sagent Pharmaceuticals (SGNT), Teva Pharmaceuticals (TEVA), Valeant Pharmaceuticals (VRX), Zoetis (ZTS)

J.P. Morgan Equity Research Ratings Distribution, as of January 1, 2015

	Overweight (buy)	Neutral (hold)	Underweight (sell)
J.P. Morgan Global Equity Research Coverage	45%	43%	12%
IB clients*	56%	49%	33%
JPMS Equity Research Coverage	45%	48%	7%
IB clients*	75%	67%	52%

*Percentage of investment banking clients in each rating category.
For purposes only of FINRA/NYSE ratings distribution rules, our Overweight rating falls into a buy rating category; our Neutral rating falls into a hold rating category; and our Underweight rating falls into a sell rating category. Please note that stocks with an NR designation are not included in the table above.

Equity Valuation and Risks: For valuation methodology and risks associated with covered companies or price targets for covered companies, please see the most recent company-specific research report at http://www.jpmorganmarkets.com, contact the primary analyst or your J.P. Morgan representative, or email research.disclosure.inquiries@jpmorgan.com.

Equity Analysts' Compensation: The equity research analysts responsible for the preparation of this report receive compensation based upon various factors, including the quality and accuracy of research, client feedback, competitive factors, and overall firm revenues.

Other Disclosures

J.P. Morgan ("JPM") is the global brand name for J.P. Morgan Securities LLC ("JPMS") and its affiliates worldwide. J.P. Morgan Cazenove is a marketing name for the U.K. investment banking businesses and EMEA cash equities and equity research businesses of JPMorgan Chase & Co. and its subsidiaries.

All research reports made available to clients are simultaneously available on our client website, J.P. Morgan Markets. Not all research content is redistributed, e-mailed or made available to third-party aggregators. For all research reports available on a particular stock, please contact your sales representative.

Options related research: If the information contained herein regards options related research, such information is available only to persons who have received the proper option risk disclosure documents. For a copy of the Option Clearing Corporation's Characteristics and Risks of Standardized Options, please contact your J.P. Morgan Representative or visit the OCC's website at http://www.optionsclearing.com/publications/risks/riskstoc.pdf

Legal Entities Disclosures
U.S.: JPMS is a member of NYSE, FINRA, SIPC and the NFA. JPMorgan Chase Bank, N.A. is a member of FDIC. **U.K**.: JPMorgan Chase N.A., London Branch, is authorised by the Prudential Regulation Authority and is subject to regulation by the Financial Conduct Authority and to limited regulation by the Prudential Regulation Authority. Details about the extent of our regulation by the Prudential Regulation Authority are available from J.P. Morgan on request. J.P. Morgan Securities plc (JPMS plc) is a member of the London Stock Exchange and is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. Registered in England & Wales No. 2711006. Registered Office 25 Bank Street, London, E14 5JP. **South Africa**: J.P. Morgan Equities South Africa Proprietary Limited is a member of the Johannesburg Securities Exchange and is regulated by the Financial Services Board. **Hong Kong**: J.P. Morgan Securities (Asia Pacific) Limited (CE number AAJ321) is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission in Hong Kong and/or J.P. Morgan Broking (Hong Kong) Limited (CE number AAB027) is regulated by the Securities and Futures Commission in Hong Kong. **Korea**: J.P. Morgan Securities (Far East) Ltd, Seoul Branch, is regulated by the Korea Financial Supervisory Service. **Australia**: J.P. Morgan Australia Limited (JPMAL) (ABN 52 002 888 011/AFS Licence No: 238188) is regulated by ASIC and J.P. Morgan Securities Australia Limited (JPMSAL) (ABN 61 003 245 234/AFS Licence No: 238066) is regulated by ASIC and is a Market, Clearing and Settlement Participant of ASX Limited and CHI-X. **Taiwan**: J.P.Morgan Securities (Taiwan) Limited is a participant of the Taiwan Stock Exchange (company-type) and regulated by the Taiwan Securities and Futures Bureau. **India:** J.P. Morgan India Private Limited (Corporate Identity Number - U67120MH1992FTC068724), having its registered office at J.P. Morgan Tower, Off. C.S.T. Road, Kalina, Santacruz - East, Mumbai – 400098, is a member of the National Stock Exchange of India Limited (SEBI Registration Number - INB 230675231/INF 230675231/INE 230675231) and Bombay Stock Exchange Limited (SEBI Registration Number - INB 010675237/INF 010675237) and is regulated by Securities and Exchange Board of India. Telephone: 91-22-6157 3000, Facsimile: 91-22-6157 3990 and Website: www.jpmipl.com. For non local research reports, this

material is not distributed in India by J.P. Morgan India Private Limited. **Thailand**: This material is issued and distributed in Thailand by JPMorgan Securities (Thailand) Ltd., which is a member of the Stock Exchange of Thailand and is regulated by the Ministry of Finance and the Securities and Exchange Commission and its registered address is 3rd Floor, 20 North Sathorn Road, Silom, Bangrak, Bangkok 10500. **Indonesia**: PT J.P. Morgan Securities Indonesia is a member of the Indonesia Stock Exchange and is regulated by the OJK a.k.a. BAPEPAM LK. **Philippines**: J.P. Morgan Securities Philippines Inc. is a Trading Participant of the Philippine Stock Exchange and a member of the Securities Clearing Corporation of the Philippines and the Securities Investor Protection Fund. It is regulated by the Securities and Exchange Commission. **Brazil**: Banco J.P. Morgan S.A. is regulated by the Comissao de Valores Mobiliarios (CVM) and by the Central Bank of Brazil. **Mexico**: J.P. Morgan Casa de Bolsa, S.A. de C.V., J.P. Morgan Grupo Financiero is a member of the Mexican Stock Exchange and authorized to act as a broker dealer by the National Banking and Securities Exchange Commission. **Singapore**: This material is issued and distributed in Singapore by or through J.P. Morgan Securities Singapore Private Limited (JPMSS) [MCI (P) 199/03/2014 and Co. Reg. No.: 199405335R] which is a member of the Singapore Exchange Securities Trading Limited and is regulated by the Monetary Authority of Singapore (MAS) and/or JPMorgan Chase Bank, N.A., Singapore branch (JPMCB Singapore) which is regulated by the MAS. This material is provided in Singapore only to accredited investors, expert investors and institutional investors, as defined in Section 4A of the Securities and Futures Act, Cap. 289. Recipients of this document are to contact JPMSS or JPMCB Singapore in respect of any matters arising from, or in connection with, the document. **Japan**: JPMorgan Securities Japan Co., Ltd. is regulated by the Financial Services Agency in Japan. **Malaysia**: This material is issued and distributed in Malaysia by JPMorgan Securities (Malaysia) Sdn Bhd (18146-X) which is a Participating Organization of Bursa Malaysia Berhad and a holder of Capital Markets Services License issued by the Securities Commission in Malaysia. **Pakistan**: J. P. Morgan Pakistan Broking (Pvt.) Ltd is a member of the Karachi Stock Exchange and regulated by the Securities and Exchange Commission of Pakistan. **Saudi Arabia**: J.P. Morgan Saudi Arabia Ltd. is authorized by the Capital Market Authority of the Kingdom of Saudi Arabia (CMA) to carry out dealing as an agent, arranging, advising and custody, with respect to securities business under licence number 35-07079 and its registered address is at 8th Floor, Al-Faisaliyah Tower, King Fahad Road, P.O. Box 51907, Riyadh 11553, Kingdom of Saudi Arabia. **Dubai**: JPMorgan Chase Bank, N.A., Dubai Branch is regulated by the Dubai Financial Services Authority (DFSA) and its registered address is Dubai International Financial Centre - Building 3, Level 7, PO Box 506551, Dubai, UAE.

Country and Region Specific Disclosures
U.K. and European Economic Area (EEA): Unless specified to the contrary, issued and approved for distribution in the U.K. and the EEA by JPMS plc. Investment research issued by JPMS plc has been prepared in accordance with JPMS plc's policies for managing conflicts of interest arising as a result of publication and distribution of investment research. Many European regulators require a firm to establish, implement and maintain such a policy. This report has been issued in the U.K. only to persons of a kind described in Article 19 (5), 38, 47 and 49 of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (all such persons being referred to as "relevant persons"). This document must not be acted on or relied on by persons who are not relevant persons. Any investment or investment activity to which this document relates is only available to relevant persons and will be engaged in only with relevant persons. In other EEA countries, the report has been issued to persons regarded as professional investors (or equivalent) in their home jurisdiction. **Australia:** This material is issued and distributed by JPMSAL in Australia to "wholesale clients" only. This material does not take into account the specific investment objectives, financial situation or particular needs of the recipient. The recipient of this material must not distribute it to any third party or outside Australia without the prior written consent of JPMSAL. For the purposes of this paragraph the term "wholesale client" has the meaning given in section 761G of the Corporations Act 2001. **Germany:** This material is distributed in Germany by J.P. Morgan Securities plc, Frankfurt Branch and J.P.Morgan Chase Bank, N.A., Frankfurt Branch which are regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht. **Hong Kong:** The 1% ownership disclosure as of the previous month end satisfies the requirements under Paragraph 16.5(a) of the Hong Kong Code of Conduct for Persons Licensed by or Registered with the Securities and Futures Commission. (For research published within the first ten days of the month, the disclosure may be based on the month end data from two months prior.) J.P. Morgan Broking (Hong Kong) Limited is the liquidity provider/market maker for derivative warrants, callable bull bear contracts and stock options listed on the Stock Exchange of Hong Kong Limited. An updated list can be found on HKEx website: http://www.hkex.com.hk. **Japan:** There is a risk that a loss may occur due to a change in the price of the shares in the case of share trading, and that a loss may occur due to the exchange rate in the case of foreign share trading. In the case of share trading, JPMorgan Securities Japan Co., Ltd., will be receiving a brokerage fee and consumption tax (shouhizei) calculated by multiplying the executed price by the commission rate which was individually agreed between JPMorgan Securities Japan Co., Ltd., and the customer in advance. Financial Instruments Firms: JPMorgan Securities Japan Co., Ltd., Kanto Local Finance Bureau (kinsho) No. 82 Participating Association / Japan Securities Dealers Association, The Financial Futures Association of Japan, Type II Financial Instruments Firms Association and Japan Investment Advisers Association. **Korea:** This report may have been edited or contributed to from time to time by affiliates of J.P. Morgan Securities (Far East) Ltd, Seoul Branch. **Singapore:** JPMSS and/or its affiliates may have a holding in any of the securities discussed in this report; for securities where the holding is 1% or greater, the specific holding is disclosed in the Important Disclosures section above. **Taiwan**: This material is issued and distributed in Taiwan by J.P. Morgan Securities (Taiwan Limited). **India:** For private circulation only, not for sale. **Pakistan:** For private circulation only, not for sale. **New Zealand:** This material is issued and distributed by JPMSAL in New Zealand only to persons whose principal business is the investment of money or who, in the course of and for the purposes of their business, habitually invest money. JPMSAL does not issue or distribute this material to members of "the public" as determined in accordance with section 3 of the Securities Act 1978. The recipient of this material must not distribute it to any third party or outside New Zealand without the prior written consent of JPMSAL. **Canada:** The information contained herein is not, and under no circumstances is to be construed as, a prospectus, an advertisement, a public offering, an offer to sell securities described herein, or solicitation of an offer to buy securities described herein, in Canada or any province or territory thereof. Any offer or sale of the securities described herein in Canada will be made only under an exemption from the requirements to file a prospectus with the relevant Canadian securities regulators and only by a dealer properly registered under applicable securities laws or, alternatively, pursuant to an exemption from the dealer registration requirement in the relevant province or territory of Canada in which such offer or sale is made. The information contained herein is under no circumstances to be construed as investment advice in any province or territory of Canada and is not tailored to the needs of the recipient. To the extent that the information contained herein references securities of an issuer incorporated, formed or created under the laws of Canada or a province or territory of Canada, any trades in such securities must be conducted through a dealer registered in Canada. No securities commission or similar regulatory authority in Canada has reviewed or in any way passed judgment upon these materials, the information contained herein or the merits of the securities described herein, and any representation to the contrary is an offence. **Dubai:** This report has been issued to persons regarded as professional clients as defined under the DFSA rules. **Brazil**: Ombudsman J.P. Morgan: 0800-7700847 / ouvidoria.jp.morgan@jpmorgan.com.

General: Additional information is available upon request. Information has been obtained from sources believed to be reliable but JPMorgan Chase & Co. or its affiliates and/or subsidiaries (collectively J.P. Morgan) do not warrant its completeness or accuracy except with respect to any disclosures relative to JPMS and/or its affiliates and the analyst's involvement with the issuer that is the subject of the research. All pricing is as of the close of market for the securities discussed, unless otherwise stated. Opinions and estimates constitute our judgment as of the date of this material and are subject to change

without notice. Past performance is not indicative of future results. This material is not intended as an offer or solicitation for the purchase or sale of any financial instrument. The opinions and recommendations herein do not take into account individual client circumstances, objectives, or needs and are not intended as recommendations of particular securities, financial instruments or strategies to particular clients. The recipient of this report must make its own independent decisions regarding any securities or financial instruments mentioned herein. JPMS distributes in the U.S. research published by non-U.S. affiliates and accepts responsibility for its contents. Periodic updates may be provided on companies/industries based on company specific developments or announcements, market conditions or any other publicly available information. Clients should contact analysts and execute transactions through a J.P. Morgan subsidiary or affiliate in their home jurisdiction unless governing law permits otherwise.

"Other Disclosures" last revised November 29, 2014.