J.P.Morgan

Prime money market fund holdings update

November 2014

- Prime money market fund AUM increased by \$12bn (+0.9%) over the month of November to \$1,438bn. Prime institutional balances rose by \$16bn (+1.7%) while prime retail balances declined by \$4bn (-0.7%) month-over-month. Over the same time-frame, government MMF balances increased by \$9bn or 0.9% to \$941bn.
- From October to November, sector allocations went relatively unchanged (Exhibit 1). Prime MMF exposures to US banks (excluding ABCP/CCP) decreased by 3%, while exposures to Eurozone banks increased by 5%. Notably, prime holdings of US Treasuries fell by 13% month-over-month to their lowest levels we have on record (Exhibit 2), as bill supply remains tight and similar assets (Fed RRP) offer more attractive yields. Additionally, sector allocations to Muni and Foreign SSA products decreased by 11% and 4% since October, and are also close to their lowest historical levels (Exhibit 3), as issuance in these higher quality credits remains constrained.
- In aggregate, prime MMFs increased exposures to banks by a modest \$8bn (+0.7%) month-over-month. While it appears that most banks are well funded ahead of the turn of the year, November was a month in which bank outstanding levels generally went unchanged (Exhibit 4). CP balances increased by \$11bn scattered across regions, while CD balances grew by \$3bn. CP/CD maturities extended 8 days in aggregate month-over month, as issuers particularly Canadian and US banks (+37 days and +22 days respectively) extended issuances further out over the turn.
- Looking ahead to next month, prime MMF bank exposures are poised to decline at year-end, especially in time deposits and repo holdings. We have witnessed this trend emerge increasingly over the past few quarters as many international banks and their affiliates seek to shrink their balance sheets at quarter-ends in preparation to officially begin disclosing Basel III leverage ratios and LCRs in 2015. Consequently, supply is likely to remain tight through the remainder of December, incentivizing higher use of the term and overnight Fed reverse repo facilities.
- MMF usage of the Fed ON RRP fell by \$8bn month-over-month. Money market funds accounted for \$153bn of RRP usage at November month-end, or 88% of total usage. Government MMFs continued to be the main users of the facility – 25 funds took down \$103bn in RRP. Meanwhile, 27 prime MMFs took down \$50bn. Non-MMF counterparties represented \$20bn in usage (Exhibit 5).

US Fixed Income Strategy

Short-Term Fixed Income Markets Research Note J.P. Morgan Securities LLC December 12, 2014

Short Duration Strategy

Alex Roever ^{AC} (212) 834-3316 alex.roever@jpmorgan.com

Teresa Ho (212) 834-5087 teresa.c.ho@jpmorgan.com

John Iborg (212) 834-2011 john.r.iborg@jpmorgan.com

The certifying analyst(s) is indicated by the notation "AC." See last page of the report for analyst certification and important legal and regulatory disclosures.

Alex Roever (212) 834-3316 Teresa Ho (212) 834-5087 John Iborg (212) 834-2011

Exhibit 1: Prime MMF sector allocations went relatively unchanged during November

cha

Prime MMF exposures by sector (\$bn)

				cng	
		% of	m/m	since	m/m %
Issuer Type	Nov-14	total	chg	Dec-13	chg
Banks (US)	181	12%	(6)	6	-3%
Banks (Eurozone)	212	15%	10	8	5%
Banks (Other Yankee)	691	48%	3	74	0%
ABCP/CCP (Banks)	65	4%	1	(8)	2%
ABCP (Non-banks)	16	1%	0	(4)	0%
ABS issuers	1	0%	0	(0)	24%
Corporates (Financial)	14	1%	(0)	(3)	-2%
Corporates (Non-financial)	40	3%	(0)	9	-1%
US Treasuries	54	4%	(8)	(48)	-13%
US Agencies	81	6%	11	(33)	15%
US S&L Govt/Munis	12	1%	(2)	(16)	-11%
Foreign SSA	31	2%	(1)	(7)	-4%
Central Banks (Fed RRP)	50	3%	2	(22)	3%
Other	4	0%	0	(1)	1%
Total	1,452	100%	9	(46)	1%

*Includes bank sponsored, non-bank sponsored, and government/agency sponsored conduits. Source: J.P. Morgan estimates, fund holdings reports, iMoneyNet Note: J.P. Morgan estimates of exposures in prime money market funds are based on a sample of large funds including funds managed by Fidelity, BlackRock, JPMorgan, Vanguard, Federated, Dreyfus, Wells Fargo, Goldman Sachs, Morgan Stanley, UBS, Schwab, SSgA, American Funds, BofA, First American, Northern, Prudential, RBC, Western Asset Management. Sample represents 86% of US prime MMF in terms of AUMs. Allocation %s are calculated from the sample and then applied to the period's total prime fund AUMs. Banks include unsecured CP, ABCP, CD, time deposits, repo, and other notes. Corporates include CP and other notes. US Treasuries include T-bills and coupons. US Agencies include discount notes and fixed/floating notes. US S&L Govt/Muni include muni CP, notes, and VRDNs. Foreign SSA includes CP, CDs, ad other notes. Central banks include repo. Other includes investments in funds including other MMFs and tax-exempt preferreds. **Actual total amount used for "Central Banks (Fed RRP)", causing difference between iMoneyNet total AUM of \$1,438bn for 10/31 vs. total AUM of \$1,452bn in table.

- As scheduled, over the course of November, the Fed began varying the offering rate on the overnight RRP facility. A rate of 3bp was offered during the first two weeks of the month, before 7bp was tested during the final two weeks. Average usage relatively decreased at the 3bp offering rate and increased at the 7bp offering rate. However, demand for the facility still appears to be a function of the spread of ON GC to the offered rate rather than the actual rate offered itself, excluding technical dates (Exhibit 6).
- Additionally, while we will not have data until early January, it is worth mentioning that the first of four term RRP operations took place this past Monday. Demand for the term RRP registered \$102bn, \$52bn above the program's \$50 aggregate cap, with the stop-out rate coming in at 8bp. Of a total of 71 bidders, 40 received allocations. Three more operations will take place on each Monday during the remainder of the month,

Exhibit 2: Prime MMF holdings of US Treasuries are at historical lows...

Prime MMF holdings of US Treasury securities since December 2012; \$bn

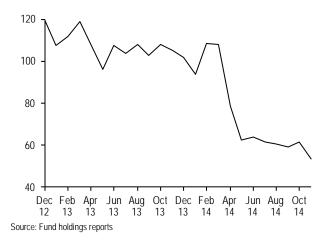
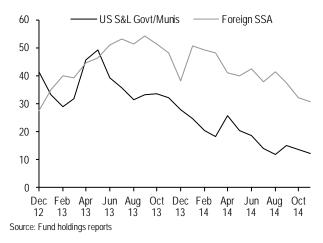


Exhibit 3: ...as are holdings of Munis and Foreign SSA securities

Prime MMF holdings of US S&L Govt/Muni and Foreign SSA product since December 2012; \$bn



with offering amounts of \$50bn, \$100bn, and \$100bn respectively.

• We suspect that most demand for the first term RRP operation came from government money market funds. Government MMFs have historically been the largest users of the ON RRP since its inception, and it appears as if prime funds have been seeking higher yielding opportunities for the time being. Additionally, usage of the overnight RRP facility fell by \$41bn on the day of the first term operation - nearly a one to one decrease – suggesting that government funds switched from overnight to term RRP in favor of its longer maturity.

- Short Duration Strategy December 12, 2014
- Given the term RRP's 7-day put feature which makes it very attractive from a liquidity bucket perspective, and the lack of investable supply over December 31st, we expect MMF demand over the remaining three operations to continue to be strong. We will provide a more in depth analysis of MMF participation in our next holdings note.

Exhibit 4: In aggregate, prime MMF bank exposures increased modestly by 0.7% month-over-month

P. Morgan estim		ne mi	NIF ex	kposu	iesiu			un)																							
		Nov-14									m/m change												(Chan	ge sinc	e Dec	c-13				
	Issuer # / Top 3	сР	CD	TD	ABCP	CCP	Agy RP	Tsy RP	Oth RP	Other	Total	СР	CD	TD	ABCP	CCP	Agy RP	Tsy RP	Oth RP	Other	Total	СР	CD	TD	ABCP		Agy RP	Tsy RP	Oth RP	Other	Total
Total	75 / 12%	180	533	180	51	14	45	9	93	44	1,149	11	3	(2)	2	(1)	3	(2)		(12)	8	21	(9)	92	(8)	(0) (3	30)	(7)	12	10	79
Eurozone	15/47%	25	104	48	16	2	15	4	14	2	230	2	6	6	0	0	1	(3)	(0)	(2)	10	(1)	11	5	(3)	(1)	(5)	1	(3)	1	4
Belgium	1/100%	-	7	4	-	- '	-	-	- 1	-	11	-	3	(0)	-	- 1	-	-	- 1	-	3	•	7	4	-	- 1	-	-	- 1	-	11
France	5/75%	14	58	34	11	2	12	4	91	0	145	1	(1)	1	(0)	0	1	(2)	(0)	(1)	(1)	(3)	17	(2)	(1)	1	1	1	(3)	(0)	12
Germany	5/86%	3	8	4	3	- '	0	0	2	0	21	(0)	(2)	3	(0)	- 1	0	(0)	0	0	2	1	(12)	3	(1)	(2)	(5)	(0)	0 1	0	(15)
Luxembourg	1/100%	0	-	-	-	- 1	-	-	- '	-	0	0	-	-	-	-	-	-	- '	-	0	(0)	-	-	-	- '	-	-	-	-	(0)
Netherlands	3 / 100%	8	31	6	1		3	0	2	2	53	0	5	2	0	- 1	0	(0)	0	(1)	7	0	(1)	0	(1)	- 1	(1)	(0)	(1)	0	(4)
Other Europe	13/38%	56	75	96	10	1	5	3	21	4	270	4	(3)	(1)	1	(0)	(1)	2	(1)	(8)	(6)	3	(8)	75	2	(0)	(1)	(0)	3	(2)	73
Norway	1/100%	9	6	19	-	- '	-	-	- 1		34	1	1	(9)	-	- '	-	-	(0)	(1)	(9)	2	0	18	-	·	-		- '	-	20
Sweden	4/77%	24	27	60	-	-	-	-	· - '	3	114	2	(3)	7	-	-	-	-	(0)	(5)	(0)	(6)	1	42	-	- '	-		-	(3)	33
Switzerland	2/100%	2	23	-	5	- '	0	0	18	1	49	(0)	0	-	0	- '	(0)	0	1	(0)	1	(1)	(9)	-	4	- 1	(2)	0	4	1	(3)
UK	6/85%	21	19	17	5	1	5	2	2	1	73	1	(0)	2	1	(0)	(1)	2	(1)	(2)	2	9	1	16	(2)	(0)	1	(0)	(1)	(0)	23
Other Regions	47/21%	99	354	36	25	11	25	2	58	37	648	6	(0)	(8)	1	(1)	3	(2)	8	(2)	4	18	(13)	12	(7)	1 (2	24)	(8)	12	11	2
Australia	6/78%	54	23	9	0	-	-	-	- '	6	91	2	(0)	(4)	0	-	-	-	- '	0	(2)	6	(10)	0	(0)	- '	-	-	-	2	(2)
Canada	7/67%	8	122	8	8	4	4	0	6	6	166	1	1	6	1	0 '	0	0	1	(0)	11	2	(5)	5	(1)	1	1	(1)	2 '	4	7
Chile	4/94%	1	1	-	-	-	-	-	- '	0	2	(0)	0	-	-	-	-	-	- '	0	0	0	0	-	-	- '	-		-	0	1
China	3 / 100%	1	5	0	-	- '	-	-	-	1	7	0	1	0	-	- '	-	-	-	0	1	1	(1)	(0)	-	-	-	-	- '	1	1
Japan	8/74%	9	135	2	7	-	3	0	4	1	161	1	1	(2)	1	-	(0)	0	(0)	0	1	2	(8)	(4)	(0)	- '	(3)	0	(1)	1	(13)
Kuwait	1/100%	-	0	1	-	- '	-	-	-	-	1	-	0	0	-	- '	-	-	-	(1)	(1)	-	0	0	-	-	-	-	- '	-	1
Singapore	3 / 100%	13	4	3	-	-	-		- '	1	21	2	0	2	-	-	-	-	- '	(1)	3	7	(1)	2	-	- '	-	(2)	-	1	7
US	15 / 63%	15	63	14	10	7	18	2	49	22	199	(1)	(3)	(10)	(1)	(1)	3	(2)	7	(1)	(8)	1	11	8	(5)	(0) (2	22)	(5)	10	3	2

Source: J.P. Morgan estimates, fund holdings reports, iMoneyNet. * Top 3 issuer concentrations by country. Note: Other category includes money market eligible notes/bonds. Table does not include exposures to VRDN credit/liquidity providers.

Exhibit 5: Government money market funds continue to be the main users of the Fed ON RRP

Breakout of Fed ON RRP usage at November month-end; \$bn

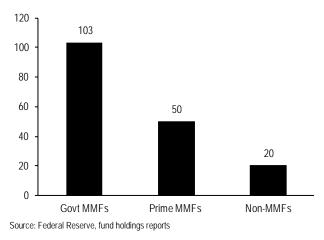
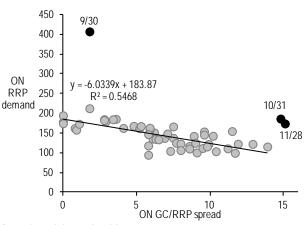


Exhibit 6: ON RRP usage continues to remain a function of the spread of GC over the facility's offered rate ON RRP demand (\$bn) vs. ON GC/RRP spread (bp) since \$30bn counterparty cap introduced*



* Regression excludes month-end dates

Source: Federal Reserve, J.P. Morgan, DTCC

Disclosures

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.

Company-Specific Disclosures: Important disclosures, including price charts, are available for compendium reports and all J.P. Morgan–covered companies by visiting <u>https://jpmm.com/research/disclosures</u>, calling 1-800-477-0406, or e-mailing <u>research.disclosure.inquiries@jpmorgan.com</u> 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 <u>research.disclosure.inquiries@jpmorgan.com</u>. **Analysts' Compensation:** The 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.

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 <u>http://www.optionsclearing.com/publications/risks/riskstoc.pdf</u>

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

J.P. Morgan Securiites LLC

Alex Roever (212) 834-3316 Teresa Ho (212) 834-5087 John Iborg (212) 834-2011



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 iurisdiction. 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.

Copyright 2014 JPMorgan Chase & Co. All rights reserved. This report or any portion hereof may not be reprinted, sold or redistributed without the written consent of J.P. Morgan.