J.P.Morgan

Corrected Note (See page 20 for details)

North America
Fixed Income Strategy
18 May 2015

Short Term Market Outlook and Strategy

- We see very little probability that the Fed hikes at the June FOMC meeting, and continue to look for a September liftoff
- Some bank spreads in the 6m to 1y section of the money markets curve have widened out 1-2bp, signaling a pricing in of Fed expectations and effects of MMF reform possibly beginning to take shape
- We provide our monthly prime money market holdings update for April
- Prime funds have seen sizable outflows occur YTD, and have shortened maturity profiles in order to meet redemptions
- We do not expect reform-related flows to occur until at least later this year, and attribute most outflows to seasonality
- Prime MMF exposures to banks increased by $76bn month-over month, led by time deposits

US Fixed Income Strategy

Alex Roever AC
(1-212) 834-3316
alex.roever@jpmorgan.com
J.P. Morgan Securities LLC

Teresa Ho
(1-212) 834-5087
teresa.c.ho@jpmorgan.com
J.P. Morgan Securities LLC

John Iborg
(1-212) 834-2011
john.r.iborg@jpmorgan.com
J.P. Morgan Securities LLC

Contents

Money Market

Rates	1d	1w	1m	3m	6m	12m
T-Bills	-	-	0.01	0.02	0.08	0.20
Agency Disco	-	-	0.07	0.10	0.16	0.30
LIBOR	-	-	0.18	0.28	0.41	0.73
ABCP	0.14	0.17	0.15	0.29	-	-
AA Fin CP	0.08	0.09	0.09	0.15	-	-
AA Non-Fin	0.08	0.09	0.09	0.12	-	-
Tier 2 CP	0.36	0.40	0.45	-	-	-
GC Repo	0.20	0.18	0.19	0.22	-	-
MBS Repo	0.22	0.2	0.21	0.27	-	-

2a-7 Funds (5/13/15)	AUM ($bn)	Gross Yield
Prime Instit	932	0.23%
Prime Retail	464	0.20%
Gvt/Agcy Instit	354	0.11%
Gvt/Agcy Retail	113	0.11%
Treas Instit	400	0.09%
Treas Retail	69	0.08%
Total Taxable	2332	
Total Tax Exempt	244	
Total MMF	2576	

Spreads	1y	2y	3y
Agency swap spread	-	-18	-16
JULI (HG fixed) z-spread	33	41	50
FRNI (HG floating) DM	25	44	45
AAA prime auto ABS (fixed) swap spread	22	22	27
AAA CC ABS (fixed) swap spread	-	20	24

Fed	
Fed Funds Target Rate	0 - 0.25%
RRP Rate	0.05%
RRP Usage (5/15)	$76.249bn
RRP 1w Usage Change	-$15.235bn (-17%)
Next FOMC Meeting	Jun 16th-17th, 2015

Upcoming Bill Auctions	Announce	Auction	Settle	Size
1m	5/18	5/19	5/21	TBD
3m	5/14	5/18	5/21	$24bn
6m	5/14	5/18	5/21	$24bn

Economic Calender Data	Date	Time
Housing starts	5/19	8:30am EST
Existing home sales	5/21	10:00am EST
CPI	5/22	8:30am EST

Alex Roever
(1-212) 834-3316
alex.roever@jpmorgan.com

Market commentary

For those who held out hopes that the Fed could raise rates at the June FOMC meeting, last week's string of weak economic data all but dashed those dreams. On the consumer side, April retail sales were disappointing, reporting total sales unchanged month over month. The three-month average annualized growth rate for core retail sales is now -0.7%, the worst of the expansion. Retail inventories for the month of March were also on the softer side, prompting our economists to downgrade the pace of inventory accumulation in Q1 which has implications for Q2 production growth. On the capital goods side, the annual revision to the factory goods data also suggest weaker capex investment and investment accumulation in Q1. Taken together, our economists are now forecasting Q1 and Q2 GDP to come in at -1.1% and 2.0% respectively. Combined, 1H15 GDP averages to be an anemic 0.45%, a clear disappointment considering 2H14 GDP growth was 3.6% (Exhibit 1).

Against this backdrop, we see very little chance that the Fed could raise interest rates in June. Instead, we continue to think September as the most likely date for liftoff provided there is a continuation of an improving labor market. Given the somewhat persistent weakness in GDP, one of the growing concerns is whether this softness will translate into slower growth for the labor markets. So far, high-frequency indicators suggest that the US employment market has held in well as weekly jobless claims have now reached their lowest level since April 2000. Moreover, our economists have found that outside of recessions, quarterly GDP's predictive power for future labor market performance has fallen sharply over the past few years[1]. Absent a large disappointment in payrolls, we favor 3Q as the most likely date for liftoff in spite of the weak GDP.

However, the markets continue to be less optimistic about the US economy. OIS levels continue to price in a first rate hike in December. Front-end 2y and 3y Treasuries also point to a later and slower pace of tightening as they rallied week over week and have largely retraced to below their year-to-date averages (Exhibit 2). Looking ahead, the data calendar over the next couple of weeks does not offer much incremental information that would close the gap between market's expectations and our own forecast. We expect April's FOMC meeting minutes that will be released on 5/20 to be uneventful. Friday's CPI report for the month of April is also expected to be stable relative to prior months. As such, our Treasury strategists are neutral on front-end Treasuries.

Exhibit 1: 1H15 GDP is tracking to be an anemic 0.45% versus 2H14 of 3.6%

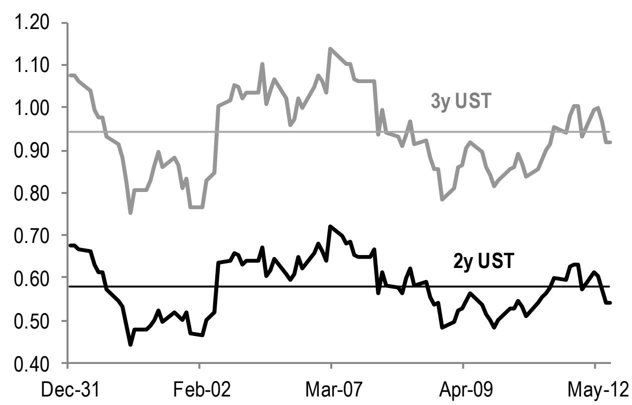
Real GDP, % change quarter over quarter

	3Q14	4Q14	1Q15 estimate	2Q15 estimate
Real GDP	5.0%	2.2%	-1.1%	2.0%

Source: J.P. Morgan

Exhibit 2: Two- and three-year Treasuries have rallied week over week and are now below their YTD averages

2y and 3y UST (%)



Source: J.P. Morgan

[1] J. Edgerton, "Quarterly GDP less informative than it used to be", May 7, 2015

Alex Roever
(1-212) 834-3316
alex.roever@jpmorgan.com

In the money markets, some bank spreads have gradually begun to widen, cheapening by a couple basis points in the 6m-1y part of the curve. This is in part driven by Fed expectations as the markets price in a rate hike in late 2015/early 2016. To a smaller extent, we suspect MMF reform is also gradually beginning to shape fund portfolios, as managers prepare for potential outflows later this year by turning more conservative with their maturities (going shorter) and asset classes (buying more government securities) in order to build liquidity. To that end, despite the $10bn increase in 1-month bill auctions we received this past week, yields barely budged.

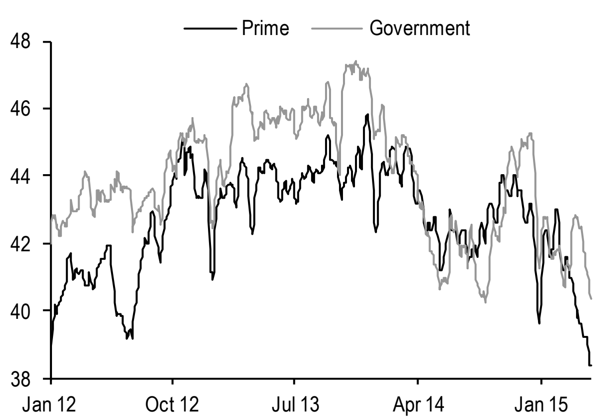
We discuss more of this dynamic below based on prime MMFs' holdings as of the end of April. In general, as a result of MMF reform, we would not be surprised if the Libor curve begins to steepen as funds reinvest maturing securities into shorter-term paper or into government securities that are largely more liquid. Eventual cheapening in the longer end of the bank credit space is anticipated. That said, relative to other widening episodes, yield moves this time around may not be of the same magnitude and will be more of a gradual movement. Given the long compliance period for MMF reform (October 2016) and the heightened focus for banks to reduce their reliance on short-term wholesale funding over the past few years, it's hard to imagine that banks are not aware and/or positioned to manage changes to their liabilities going forward.

Prime MMF holdings update for April[2]

Across the board, money market funds experienced net outflows over the course of April. Prime retail funds lost $11bn or -2.3% of AuM, while prime institutional fund AuM decreased by $40bn or -4.1%. In total, prime MMFs shed $51bn or -3.5% of AuM during the month. Furthermore, government funds experienced $17bn or -1.8% in outflows.

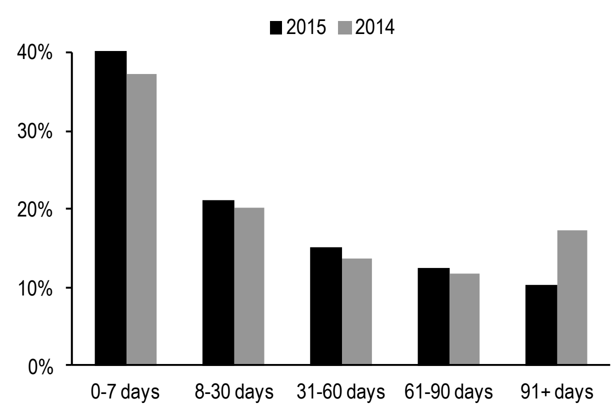
Funds built liquidity in order to meet outflows, and shortened maturities throughout the month. Indeed, at the end of April, prime fund WAMs stood at an average of 39 days, close to a multi-year low. Additionally, average WAMs of government funds decreased by 1day over the course of the month to 41 days, also close to a multi-year low (Exhibit 3).

Exhibit 3: Both prime and government MMF WAMs are near multi-year lows
Prime and government MMF WAMs, 5d moving average



Source: iMoneyNet

Exhibit 4: Prime funds are shortening their maturity profiles
Prime MMF maturity composition of bank holdings*



*Based on effective maturities
Source: Fund holdings reports

[2] This is a reprint of our previous research note: "Prime money market fund holdings update: April 2015", May15th, 2015

Alex Roever
(1-212) 834-3316
alex.roever@jpmorgan.com

Exhibit 5: Prime MMF bank exposures increased by $76bn during April

J.P. Morgan estimate of prime MMF exposures to banks ($bn)

		Apr-15										m/m change										Change since Dec-14									
	Issuer # / Top 3	CP	CD	TD	ABCP	CCP	Agy RP	Tsy RP	Oth RP	Other	Total	CP	CD	TD	ABCP	CCP	Agy RP	Tsy RP	Oth RP	Other	Total	CP	CD	TD	ABCP	CCP	Agy RP	Tsy RP	Oth RP	Other	Total
Total	**75 / 12%**	**170**	**496**	**159**	**46**	**16**	**45**	**12**	**91**	**49**	**1,083**	**8**	**(20)**	**97**	**(7)**	**1**	**2**	**(1)**	**2**	**(5)**	**76**	**5**	**(26)**	**74**	**(8)**	**2**	**6**	**(1)**	**(1)**	**3**	**53**
Eurozone	**15 / 52%**	**23**	**100**	**47**	**14**	**2**	**14**	**7**	**10**	**4**	**220**	**(1)**	**(1)**	**34**	**(3)**	**(0)**	**0**	**2**	**(2)**	**(0)**	**29**	**(2)**	**9**	**30**	**(3)**	**(0)**	**(0)**	**0**	**(2)**	**3**	**33**
Belgium	1 / 100%	-	5	5	-	-	-	-	-	-	10	-	2	5	-	-	-	-	-	-	7	-	4	5	-	-	-	-	-	-	9
France	5 / 77%	11	58	39	11	2	11	6	7	3	148	(0)	5	29	(2)	(0)	2	4	(1)	0	37	(3)	9	25	(2)	(0)	1	0	(1)	3	32
Germany	5 / 88%	2	10	2	2	-	-	0	1	-	17	(1)	(1)	1	(1)	-	(2)	(0)	(1)	(0)	(5)	(1)	1	(0)	(1)	-	(1)	(0)	(1)	(0)	(3)
Luxembourg	1 / 100%	1	-	-	-	-	-	-	-	-	1	(0)	-	-	-	-	-	-	-	-	(0)	1	-	-	-	-	-	-	-	-	1
Netherlands	3 / 100%	8	28	1	1	-	2	0	2	2	45	0	(7)	(1)	(0)	-	(0)	(1)	(0)	(0)	(11)	1	(5)	0	(1)	-	0	0	(1)	(0)	(5)
Other Europe	**13 / 41%**	**43**	**64**	**92**	**8**	**1**	**8**	**2**	**23**	**9**	**250**	**8**	**(3)**	**64**	**0**	**1**	**7**	**0**	**1**	**(3)**	**75**	**5**	**(5)**	**49**	**(1)**	**1**	**8**	**(0)**	**3**	**1**	**60**
Norway	1 / 100%	7	4	20	-	-	-	-	-	1	32	(2)	2	19	-	-	-	-	-	1	20	(3)	1	17	-	-	-	-	-	1	16
Sweden	4 / 85%	12	14	54	-	-	-	-	-	6	86	(3)	(7)	33	-	-	-	-	-	(3)	20	(7)	(14)	31	-	-	-	-	-	0	10
Switzerland	2 / 100%	2	24	-	3	-	3	1	22	1	54	(0)	(1)	-	(1)	-	3	1	1	(0)	3	(0)	2	-	(1)	-	3	1	3	(1)	7
UK	6 / 81%	23	22	18	5	1	4	1	1	1	78	13	3	11	1	1	4	(0)	(0)	(1)	32	15	6	2	(0)	1	4	(1)	(0)	1	27
Other Regions	**47 / 21%**	**104**	**331**	**19**	**24**	**12**	**24**	**4**	**59**	**36**	**613**	**1**	**(16)**	**(1)**	**(4)**	**(1)**	**(5)**	**(3)**	**3**	**(2)**	**(28)**	**3**	**(30)**	**(6)**	**(4)**	**1**	**(1)**	**(1)**	**(2)**	**(0)**	**(40)**
Australia	6 / 78%	59	19	2	-	-	-	-	-	5	85	(1)	(0)	(5)	-	-	-	-	-	(0)	(7)	2	(3)	(6)	(0)	-	-	-	-	(1)	(8)
Canada	7 / 70%	14	122	2	9	6	4	0	7	6	171	3	(8)	0	(2)	(0)	0	(0)	1	(1)	(8)	6	(9)	(3)	0	2	(1)	(0)	(1)	(0)	(7)
Chile	4 / 94%	1	2	-	-	-	-	-	-	0	3	(0)	0	-	-	-	-	-	-	(0)	0	(0)	0	-	-	-	-	-	-	(0)	0
China	2 / 100%	0	2	-	-	-	-	-	-	-	3	0	1	(1)	-	-	-	-	-	(0)	0	(0)	(2)	(1)	-	-	-	-	-	(0)	(3)
Japan	8 / 71%	9	133	0	7	-	2	-	5	1	157	(1)	(8)	(5)	(2)	-	(2)	-	0	0	(17)	1	(4)	(4)	(1)	-	(0)	-	(0)	0	(8)
Kuwait	1 / 100%	-	0	2	-	-	-	-	-	-	2	-	(0)	1	-	-	-	-	-	(1)	(0)	-	(0)	1	-	-	-	-	-	-	1
Singapore	3 / 100%	7	3	0	-	-	-	-	-	3	14	(2)	0	(2)	-	-	-	-	-	2	(2)	(6)	(2)	(3)	-	-	-	-	-	2	(8)
US	15 / 68%	14	50	12	8	7	17	3	47	20	178	2	(1)	11	(0)	(0)	(4)	(3)	2	(1)	5	0	(11)	10	(3)	(1)	(1)	(1)	(1)	(1)	(8)

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.

Outflows have been a typical occurrence during the first half of the year. Since 2012, tax season and the dissipation of cash balances built up around the end of the year has resulted in average outflows of $47bn for prime MMFs, and $63bn for government MMFs through the end of April. For perspective, YTD, outflows from prime and government MMF have registered $51bn and $17bn respectively.

We do not believe that MMF reform has been the driving factor behind the prime outflows experienced to date. As we pointed out above, prime fund outflows are normal for this time of the year, and 2015 has been mostly on par. Although the timing is uncertain, we do not expect sizable reform–related flows to occur until later this year. However, the degree to which prime funds are changing their maturity compositions (Exhibit 4) suggests that these funds are already preparing for further outflows to occur.

Bank exposures rebounded during April. Prime funds increased their holdings of banks by $76bn month-over-month, as quarter-end balance sheet management subsided (Exhibit 5). Not surprisingly, time deposits were the primary asset class behind the rebound, increasing by $97bn principally across European banks. For the most part, other asset classes remained unchanged, with the exception of CDs. Holdings of CDs decreased by $20bn, concentrated across Canadian, Japanese, Swedish and Dutch banks.

Prime fund usage of the Fed RRP decreased by $148bn month-over-month (Exhibit 6). For prime MMFs, the Fed RRP facility has served as a viable source of backstop supply, particularly on quarter-end dates when large dealers temporarily scale back on short-term funding. With quarter-end supply pressures alleviated, prime funds used $24bn of RRP versus $172bn at the end of March.

Holdings of agency securities increased, while allocations to US Treasuries declined. Prime MMFs increased their holdings of US agency securities by $19bn month-over-month while paring back holdings of Treasuries by $14bn. We suspect that with quarter-end out of the way, prime funds preferred agencies for their relative yield pickup to short-term Treasuries, as 1m and 3m bills traded at zero to negative levels at some points prior to the end of the month. However, looking forward, we expect allocations to Treasuries to

Alex Roever
(1-212) 834-3316
alex.roever@jpmorgan.com

Exhibit 6: With quarter-end supply pressures alleviated, prime MMFs scaled back on usage of the RRP during April

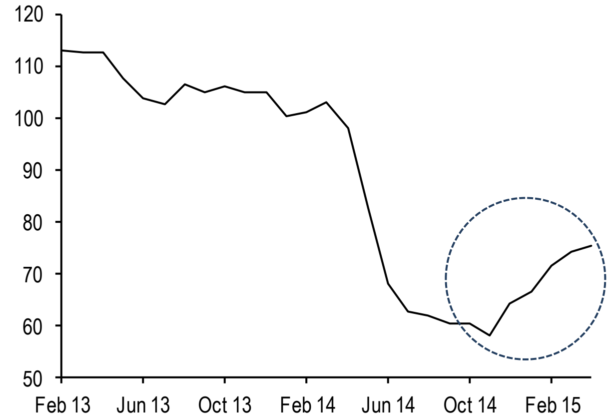
Prime MMF exposures by sector ($bn)

Issuer Type	Apr-15	% of total	m/m chg	chg since Dec-14	m/m % chg	% chg since Dec-14
Banks (US)	164	12%	6	(4)	4%	-3%
Banks (Eurozone)	204	15%	32	37	18%	22%
Banks (Other Yankee)	653	47%	44	27	7%	4%
ABCP/CCP (Banks)	62	4%	(6)	(6)	-9%	-9%
ABCP (Non-banks)	16	1%	(2)	1	-11%	5%
ABS issuers	2	0%	(0)	1	-2%	58%
Corporates (Financial)	10	1%	(2)	(3)	-13%	-25%
Corporates (Non-financial)	46	3%	5	10	12%	28%
US Treasuries	72	5%	(14)	(6)	-16%	-7%
US Agencies	79	6%	19	(18)	31%	-19%
US S&L Govt/Munis	14	1%	3	2	31%	16%
Foreign SSA	42	3%	1	8	3%	23%
Central Banks (Fed RRP)	24	2%	(148)	(155)	-86%	-86%
Other	1	0%	(1)	(3)	-42%	-67%
Total	**1,390**	**100%**	**(89)**	**(111)**	**-6%**	**-7%**

*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, RBC, Western Asset Management. Sample represents 85% 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 $1,381bn for 4/30 vs. total AUM of $1,390bn in table.

Exhibit 7: We expect prime MMFs to continue to increase holdings of Treasury securities

Prime fund holdings of UST securities ($bn); 3m average



Source: Fund holdings reports

continue their up-trend (Exhibit 7) as funds further bolster liquidity as a result of MMF reform.

Large money fund complexes continue to come forward with their strategies for dealing with MMF reform. BlackRock, Legg Mason, Invesco, and Schwab each made respective announcements throughout April and early May (Exhibit 8). Blackrock announced that it will restructure a portion of its institutional prime and muni MMFs into 7 day max-maturity funds, will restructure certain prime MMFs into government MMFs, and will not implement gates and fees for its government MMFs. Legg Mason announced that it intends to offer two non-money market short duration bond funds, and that it will not implement gates and fees on its government MMFs. Most recently, Schwab announced that it will not implement gates and fees on its government MMFs. We expect more fund families to come forward, and more specific details be released, as the year progresses and as we get closer to the final rules taking effect in 2016.

Coming Attractions

- Minutes from this week's FOMC meeting will be published on by the Fed on 5/20.
- The Fed will release its Beige Book on 6/3.

Alex Roever
(1-212) 834-3316
alex.roever@jpmorgan.com

Exhibit 8: Large complexes continue to come forward to address preliminary strategies for dealing with MMF reform

Summary of MMF reform related announcements made by large fund complexes

Complex	AuM* ($bn)	Prime ($bn) Inst	Prime ($bn) Ret	Govt ($bn) Inst	Govt ($bn) Ret	Municipal ($bn) Inst	Municipal ($bn) Ret	Date of Ann.	Summary of announcement
Goldman Sachs	149	44	0	98	0	7	0	1/20/2015	-Government MMFs to adhere to reform rules early and not implement gates or fees
Fidelity	406	135	117	61	24	5	64	1/30/2015	- No plans to institute liquidity gates and fees for its government MMFs - Will convert three of its retail prime funds into government fund status
Federated	198	64	15	74	27	11	6	2/19/2015	- No plans to institute liquidity gates and fees for its government MMFs - Intends to restructure a portion of its institutional prime and muni MMFs into 60-day max maturity funds
JPMorgan	246	113	15	85	9	18	6	2/20/2015	- No plans to institute liquidity gates and fees for its government MMFs - No intentions to institute floating NAVs in its prime MMFs and fees and gates in its non-government MMFs before 2H2016
Dreyfus	162	70	1	84	1	4	1	3/12/2015	- Working out strategy for providing daily liquidity for floating NAV funds - Currently reviewing the efficacy of 60-day max maturity funds - Possibly supplementing current offerings with unregistered cash management alternatives
Reich & Tang	7	0	3	2	2	0	1	3/12/2015	-Will exit MMF business
BlackRock	209	134	11	53	3	4	5	4/6/2015	- No plans to institute liquidity gates and fees for its government MMFs - Intends to offer intraday liquidity through at least three NAV calculations throughout the day for institutional prime MMFs - Intends to restructure a portion of its institutional prime and muni MMFs into 7-day max maturity funds - Will convert certain retail prime funds into government status
Legg Mason	45	15	1	26	2	1	1	4/7/2015	- No plans to institute liquidity gates and fees for its government MMFs - Will offer two non-money market short duration bond funds that will not be subject to liquidity fees and redemption gates (but will transact at a floating NAV)
Invesco	55	32	1	21	0	1	0	4/14/2015	-Does not intend to implement gates and fees for government MMFs
Schwab	154	4	82	0	42	1	25	5/1/2015	-Does not intend to implement gates and fees for government MMFs -Retail investors will continue to have access to Prime, Municipal and Government money market funds with a net asset value (NAV) that is designed to be constant (CNAV).
Total Announced	**1631**	**612**	**246**	**505**	**109**	**52**	**109**		
Total Announced as % of Mkt	**63%**	**65%**	**53%**	**67%**	**61%**	**74%**	**62%**		

Source: iMoneyNet, J.P. Morgan
*Data as of 5/14/2015

Trading Themes

We expect short-term rates to drift upwards in 2015 in response to the beginning of a Fed tightening cycle. However, the details of how monetary policy is implemented and impact of regulations will have different effects on the various short term interest rates.

Additionally, given the immense demand for short-term product and the lack of investible supply, we do not foresee spreads on money market instruments widening significantly this year, and hence do not expect high returns to be found in the money market space in general. With the prospect of rising front-end rates, we believe that floating rate instruments will perhaps offer the best relative value as the year progresses.

- **Overweight Treasury coupons versus bills**

  In spite of the immense demand for high-quality liquid assets, Treasury coupons continue to trade cheap to bills. Although the current spread is only 1-3bp, it's possible that this spread could widen as a large amount of Treasury coupons are expected to roll into the 2a-7 space. In the coming year, we expect 2a-7 Treasury coupon balances to increase by $191bn while bills to increase a moderate $17bn.

- **Overweight collateralized CP versus bank unsecured CP and ABCP**

  Collateralized CP programs are structured such that CP notes issued are guaranteed by the sponsoring bank. This asset class is an attractive way to gain direct bank exposure than they would otherwise via CP/CDs and ABCP while picking up 2-7bp in yield.

- **For Moody's matrix considerations, overweight partially supported ABCP programs with long-term sponsor ratings below Aa3. Conversely, overweight fully supported ABCP with long-term sponsor ratings above Aa3 versus partially supported programs.**

  Under the Moody's matrix MMF rating methodology, funds are rated on the basis of the tenor and credit rating assigned their portfolio's underlying assets. In the case of ABCP, partially supported programs by default receive a Moody's LT rating of Aa3, whereas fully supported programs receive the LT rating of the program's sponsor.

- **Overweight front-end floating versus fixed rate instruments**

  We believe that floating rate instruments offer better relative value over their fixed rate counterparts as Libor and other short-term rates begin to drift upwards in response to MMF reform-related flows and a Fed tightening in 2015.

- **Overweight Financial bonds vs. Non-Financials**

  We expect bank spreads to outperform non-Bank in 2015 as rising rates is a positive for bank earnings. Also, banks are not at risk for M&A and higher leverage, they are actually de-leveraging to meet capital requirements. We believe these factors will more than offset the increased bank bond supply that will be issued in the next few years to meet Total Loss Absorbing Capital (TLAC rules). (*See High Grade Outlook*)

- **Overweight 1-3y AAA credit card ABS versus agencies**

  Both asset classes are rated AAA, but ABS trade much wider than agencies do. Currently, AAA-rated 2y credit card ABS is offered at the equivalent of swaps +25bp versus 2y agency at swaps -15bp. Furthermore, our Agency strategists note that losses on credit card ABS master trusts are at record lows, while credit support levels are at record highs. The credit card ABS sector is fundamentally cheap and least vulnerable to technical volatility. Consequently, ABS should provide a safe haven to investors looking for relatively higher-yielding cash surrogates. (See *ABS Outlook*)

- **Consider senior tranches from off-the-run subprime auto ABS issuers for spread pick-up**

  Senior tranches from off-the-run subprime auto ABS issuers offer spreads of up to 100bp for very short (<2y WAL) bonds that are highly rated (from AAA down to A). That is a significant concession versus comparable short high investment grade credits. Additionally, our Agency strategists believe these senior bonds are very well protected structurally and investors are being very well compensated for the illiquidity and credit risk. (See *ABS Outlook*)

- **Front-end steepeners are likely to perform well over a range of probabilities across spanning interest rate scenarios, as are intermediate belly-cheapening flys**

  Our framework for identifying trades that are "convex" over a range of probability distributions on Fed rate hike scenarios suggest that front-end steepeners (2s/5s, 3s/5s, White/ Blues, Reds/Greens, and Reds/Blues) and intermediate belly-cheapening flys (2s/5s/10s, 3s/7s/10s) are likely to do well early next year. (See *Interest Rate Derivatives Outlook*)

Alex Roever
(1-212) 834-3316
alex.roever@jpmorgan.com

- **Look for wider swap spreads across the curve; front and intermediate spreads are likely to lead the widening**

  Spreads across the curve appear tight; front-end spreads should widen as a result of lower front-end Treasury supply and regulatory demand. Intermediate spreads should widen on the back of increasing yields and a widening mortgage basis. Long-end spreads will likely widen given our forecasts for reduction in hedging needs from VA accounts and a flattening yield curve. (See *Interest Rate Derivatives Outlook*)

- **Buy Libor basis wideners and FF/Libor tighteners; be aware of the impact of new reserve draining initiatives and regulations**

  A range of reforms like NSFR and MMF rules are likely to result in wider Libor bases over the course of next year. While many reforms and Fed initiatives point to tightening of the FF/Libor basis, the Fed is still tinkering with various reserve-draining mechanisms—the efforts bear watching as they could have a big impact on this basis. (See *Interest Rate Derivatives Outlook*)

- **Maintain 1Yx1Y FF/Libor basis narrowers**

  Continue to pay Libor in $1bn notional of a 1Yx1Y Fed Funds/Libor basis swap (*Interest Rate Derivatives*, 4/10/15). P/L since inception: profit of 0.6bp of yield.

- **Maintain EDM5/Z5 steepeners**

– Stay long1000 EDM5 contracts versus staying short 1000 EDZ5 contracts (*Interest Rate Derivatives*, 12/19/14). P/L since inception: loss of 21.7bp of yield.

- **Maintain synthetic 2Yx1Y forward Treasury/OIS narrowers**

– Stay $1bn notional of 1% Mar 2018s, sell $1bn notional of 0.5% Mar 2017s and continue to pay fixed in $982mn notional of a 3/31/2017x3/15/2018 OIS swap (*Interest Rate Derivatives*, 3/27/15). P/L since inception: loss of 3.6bp of yield.

- **Over the next quarter, overweight short-lockout, short-maturity callables versus duration-matched bullets to enhance yield**

  Short-dated callables offer the highest call probability and largest rate and rate volatility breakevens. However, a sell-off in front-end yields ahead of the Fed hike and pickup in volatility in the front end of the curve could lead to underperformance beyond 1Q15. (*See Agencies Outlook*)

- **Remain neutral on European SSAs versus Agencies**

  USD-denominated EIB/KfW issues have outperformed US Agencies on asset swap over the last month. However, this outperformance is unlikely to reverse given ECB QE and the eventual Fed rate hike. Given competing factors, we turn neutral on USD-denominated EIB/KfW debt versus US Agencies on asset swap.

Alex Roever
(1-212) 834-3316
alex.roever@jpmorgan.com

Forecasts

Interest Rates

	Current 5/15/2015	1m ahead 6/15/2015	2Q15 6/30/2015	3Q15 9/30/2015	4Q15 12/31/2015
Rates					
Fed Funds Effective	0.13	0.12	0.12	0.35	0.60
3m Libor*	0.28	0.26	0.26	0.50	0.80
1m bills	0.01	0.04	0.04	0.03	0.10
3m bills	0.02	0.05	0.05	0.05	0.12
UST 2y	0.54	0.60	0.80	1.05	1.25
UST 3y	0.90	0.95	1.20	1.40	1.55
UST 5y	1.46	1.50	1.65	1.80	1.95
UST 7y	1.87	1.90	1.95	2.10	2.25
UST 10y	2.14	2.15	2.20	2.25	2.40
UST 30y	2.92	2.95	2.95	2.95	3.00
2y swap	0.78	0.83	1.02	1.27	-
5y swap	1.59	1.65	1.80	1.96	-
10y swap	2.20	2.23	2.30	2.37	-
30y swap	2.66	2.75	2.80	2.85	-
Spreads					
3m TED	26	21	21	45	68
2y Swap Spread	24	23	22	22	-
5y Swap Spread	13	15	15	16	-
10y Swap Spread	6	8	10	12	-
30y Swap Spread	-26	-20	-15	-10	-

*Libor estimates are based on the current BBA Libor panel formulation and don't account for pending UK FSA reforms.

Economics

%ch q/q, saar, unless otherwise noted

	14Q2	14Q3	14Q4	15Q1	15Q2	15Q3	15Q4	16Q1	2015*	2016*
Gross Domestic Product										
Real GDP	4.6	5.0	2.2	0.2	2.0	2.5	2.5	2.5	1.8	2.5
Final Sales	3.2	5.0	2.3	-0.5	2.5	2.6	2.5	2.6	1.8	2.5
Domestic Final Sales	3.4	4.1	3.3	0.7	2.4	3.0	2.9	2.9	2.2	2.7
Business Investment	9.7	8.9	4.7	-3.4	1.3	5.4	4.6	4.9	1.9	4.9
Net Trade (% contribution to GDP)	-0.3	0.8	-1.0	-1.3	0.2	-0.4	-0.4	-0.3	-0.5	-0.2
Inventories (% contribution to GDP)	1.4	-0.1	-0.1	0.7	-0.5	-0.1	0.0	-0.1	0.0	0.0
Prices and Labor Cost										
Consumer Price Index	2.4	1.2	-0.9	-3.1	2.7	2.4	2.0	2.0	1.0	2.0
Core	2.2	1.4	1.5	1.7	1.7	2.0	2.0	2.0	1.9	2.0
Producer Price Index	2.2	1.2	-0.6	-4.8	2.2	2.0	2.0	2.0	0.3	2.0
Core	1.8	2.0	1.6	-0.5	1.3	1.5	1.7	1.7	1.0	1.7
Employment Cost Index	3.0	2.7	2.0	2.6	2.8	2.8	2.8	2.9	2.7	3.2
Unemployment Rate (%, sa)	6.2	6.1	5.7	5.6	5.3	5.2	5.1	4.9	-	-

* Q4/Q4 change

Alex Roever
(1-212) 834-3316
alex.roever@jpmorgan.com

Forecasts (continued)

Money Market Supply

($bn)	YE 2013 12/31/2013	YE 2014 12/31/2014	Latest 4/30/2015	YE 2015* 12/31/2015	2015 Y/Y Exp. $ Change
T-Bills	1,591	1,458	1,433	1,475	17
Treasury Coupon	1,567	1,608	1,694	1,825	218
Treasury FRNs	N/A	164	220	328	164
Dealer Repo*	2,550	2,297	2,195	2,300	3
Fed Repo	198	397	130	300	(97)
Discos	509	609	583	529	(80)
Agency Coupons	427	363	338	429	66
Dom Fin. CP	90	97	99	86	(11)
For Fin. CP	402	374	420	376	2
Non Fin CP	196	227	261	290	63
ABCP	263	231	226	191	(40)
Bonds <1y	305	355	335	358	3
Total	**8,905**	**8,999**	**8,772**	**9,298**	**300**
Total (ex Fed)	**8,707**	**8,602**	**8,641**	**8,998**	**397**
Total (ex Fed, ex Treas.)	**5,548**	**5,372**	**5,295**	**5,370**	**(2)**

**The repo balance for YE 2012 is adjusted to reflect the new reporting changes to NY Fed's dealer financing report. We applied an average percentage of the overall repo market that consists of repo transactions only and applied that to what was reported for year-end.
***The repo balance for YE 2013 and YE 2014 represents the average of December repo outstandings in order to seasonally adjust data for technical factors.

Long-term (>1Y) net issuance

($bn)	YE 2013 12/31/2013	YE 2014 12/31/2014	YE 2015* 12/31/2015	2014 Y/Y $ Change	2015 Y/Y Exp. $ Change
IG corporates	393	433	415	40	(18)
HY corporates	154	145	150	(9)	5
EM Corporates	254	232	202	(22)	(30)
EM Sovereign	48	40	10	(8)	(30)
Municipals	(38)	(49)	(53)	(11)	(4)
Non-Agency MBS	(154)	(94)	(67)	60	27
Agency MBS	281	85	100	(196)	15
CMBS	(11)	(1)	(14)	10	(13)
ABS	12	55	25	43	(30)
CLOs	16	66	40	50	(26)
Agency Debt	(117)	(154)	(50)	(37)	104
Treasuries	849	783	624	(66)	(159)
Total	**1,686**	**1,542**	**1,382**	**(144)**	**(160)**
Total ex-Tsy	**838**	**759**	**758**	**(79)**	**(1)**

*Note: YE 2015 J.P. Morgan forecasts
Source: J.P. Morgan, Trepp, Bloomberg, S&P, Thomson Reuters

Alex Roever
(1-212) 834-3316
alex.roever@jpmorgan.com

New Issues

Corporates

Issue Date	Issuer	Ticker	Moody's	S&P	Amount	Coupon	Maturity	Term	12m	24m	36m	60m
11-May	PACCAR FINANCIAL CORP	PCAR	A1	A+	300	1.400 %	5/18/2018	3			+47	
11-May	LLOYDS BANK PLC	LLOYDS	A1	A	400	FRN	5/14/2018	3			L+55	
11-May	LLOYDS BANK PLC	LLOYDS	A1	A	1,250	1.750 %	5/14/2018	3			+80	
11-May	DAIMLER FINANCE NA LLC	DAIGR	A3	A-	250	FRN	5/18/2018	3			L+45	
11-May	DAIMLER FINANCE NA LLC	DAIGR	A3	A-	800	1.650 %	5/18/2018	3			+70	
11-May	DAIMLER FINANCE NA LLC	DAIGR	A3	A-	1,300	2.450 %	5/18/2020	5				+90
13-May	QUALCOMM INC	QCOM			250	FRN	5/18/2018	3			L+27	
13-May	QUALCOMM INC	QCOM			1,250	1.400 %	5/18/2018	3			+50	
13-May	QUALCOMM INC	QCOM			250	FRN	5/20/2020	5				L+55
13-May	QUALCOMM INC	QCOM	A1		1,750	2.250 %	5/20/2020	5				+70
13-May	CONOCOPHILLIPS COMPANY	COP			250	FRN	5/15/2018	3			L+33	
13-May	CONOCOPHILLIPS COMPANY	COP	A1		750	1.500 %	5/15/2018	3			+55	
13-May	CONOCOPHILLIPS COMPANY	COP	A1		500	2.200 %	5/15/2020	5				+65
14-May	SOUTHERN POWER CO	SO	Baa1	BBB+	350	1.500 %	6/1/2018	3			+65	
14-May	SOUTHERN POWER CO	SO	Baa1	BBB+	300	2.375 %	6/1/2020	5				+85
14-May	BNP PARIBAS	BNP	A1	A+	1,500	2.375 %	5/21/2020	5				+93

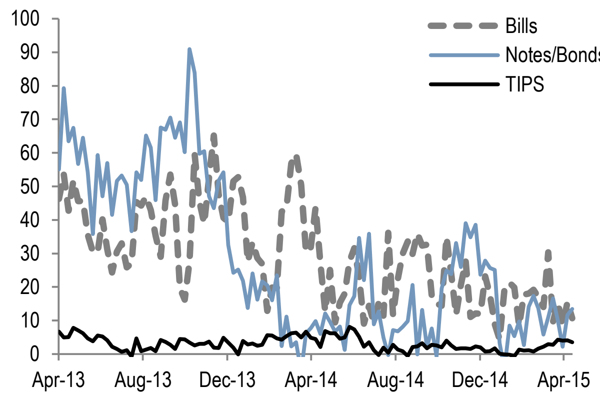
ABS

Issue Date	Issuer	Ticker	Moody's	S & P	Amount	Life	Spread	Benchmark	Series	Class	Market	Deal Type
13-May	GMF Floorplan Owner Revolving Trust	GFORT	Aaa		499	2.99	47	Swap - Int	2015-1	A-1	US Private	Other - Floorplans
13-May	GMF Floorplan Owner Revolving Trust	GFORT	Aaa		125	2.99	50	1 Mo. LIBOR	2015-1	A-2	US Private	Other - Floorplans
13-May	GMF Floorplan Owner Revolving Trust	GFORT	Aa2		41	2.99	80	Swap - Int	2015-1	B	US Private	Other - Floorplans
13-May	GMF Floorplan Owner Revolving Trust	GFORT	A2		50	2.99	105	Swap - Int	2015-1	C	US Private	Other - Floorplans
13-May	GMF Floorplan Owner Revolving Trust	GFORT	Baa2		35	2.99	150	Swap - Int	2015-1	D	US Private	Other - Floorplans
13-May	Honda Auto Receivables Owner Trust	HAROT			356	0.34			2015-2	A-1	US Not Offered	Auto - P
13-May	Honda Auto Receivables Owner Trust	HAROT		AAA	376	1.00	23	EDSF	2015-2	A-2	US Public	Auto - P
13-May	Honda Auto Receivables Owner Trust	HAROT		AAA	458	2.01	20	Swap	2015-2	A-3	US Public	Auto - P
13-May	Honda Auto Receivables Owner Trust	HAROT		AAA	166	3.04	27	Swap	2015-2	A-4	US Public	Auto - P
13-May	Porsche Innovative Lease Owner Trust	PILOT		A-1+	134	0.33			2015-1	A-1	US Private	Auto - Leases
13-May	Porsche Innovative Lease Owner Trust	PILOT		AAA	240	1.16	27	EDSF	2015-1	A-2	US Private	Auto - Leases
13-May	Porsche Innovative Lease Owner Trust	PILOT		AAA	240	2.13	31	Swap	2015-1	A-3	US Private	Auto - Leases
13-May	Porsche Innovative Lease Owner Trust	PILOT		AAA	86	2.63	38	Swap	2015-1	A-4	US Private	Auto - Leases
14-May	North Mill Equipment Funding	NMEF			122	1.59			2015-A	A	US Private	Equip - ST
14-May	North Mill Equipment Funding	NMEF			9	3.61			2015-A	B	US Private	Equip - ST

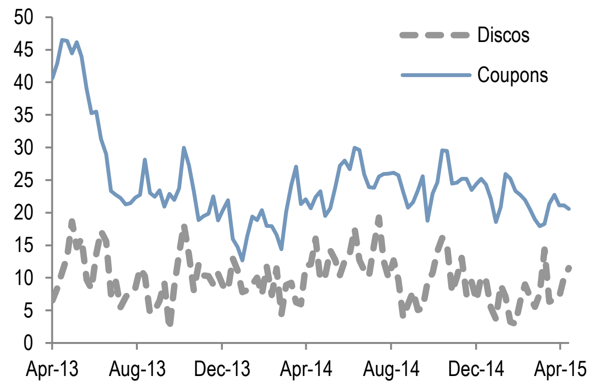
Alex Roever
(1-212) 834-3316
alex.roever@jpmorgan.com

Dealer Net Positions

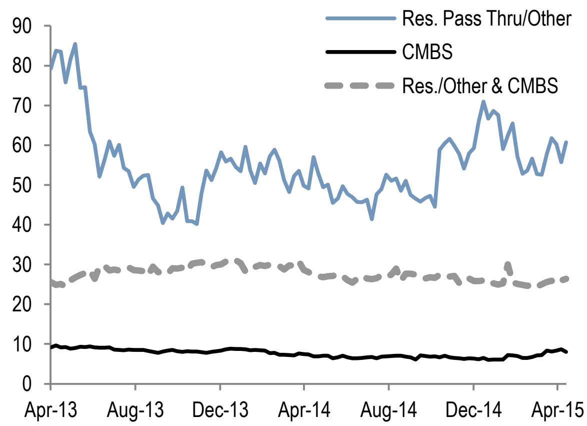
Government ($bn)



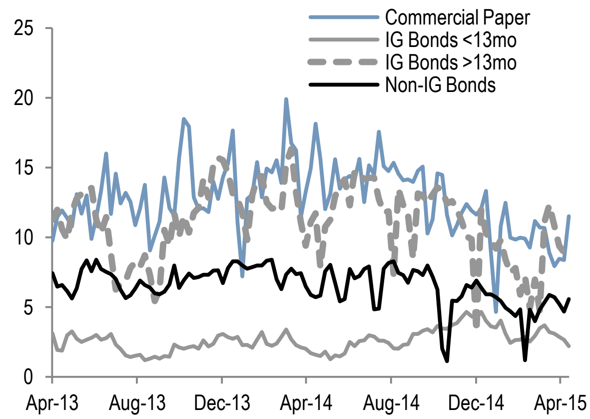
Agency ($bn)



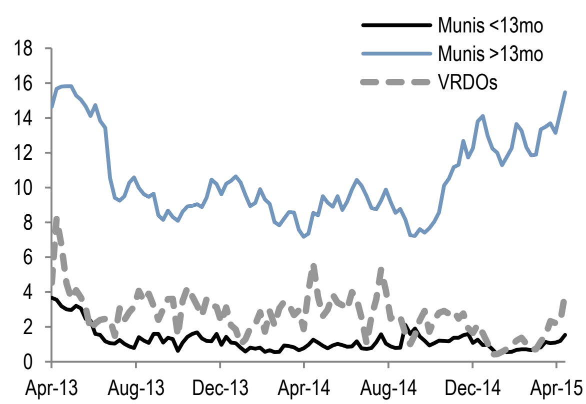
MBS ($bn)



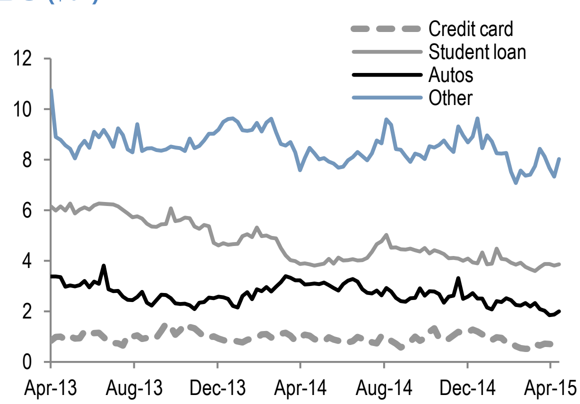
Corporates ($bn)



Munis ($bn)



ABS ($bn)

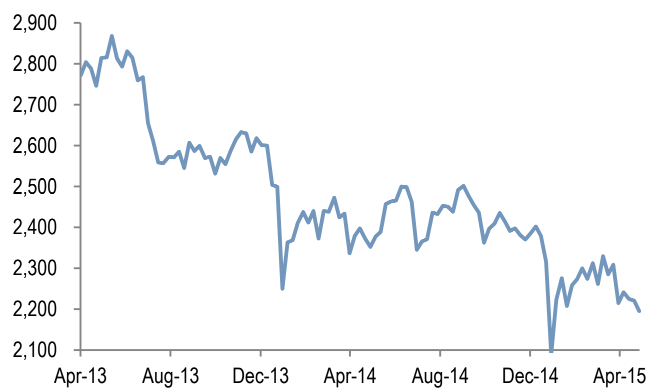


Source: Federal Reserve

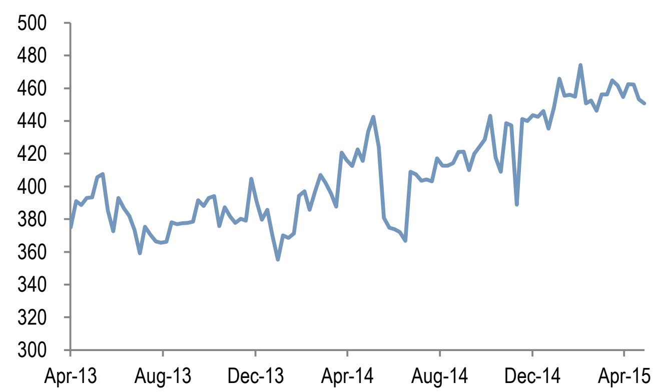
Alex Roever
(1-212) 834-3316
alex.roever@jpmorgan.com

Repo

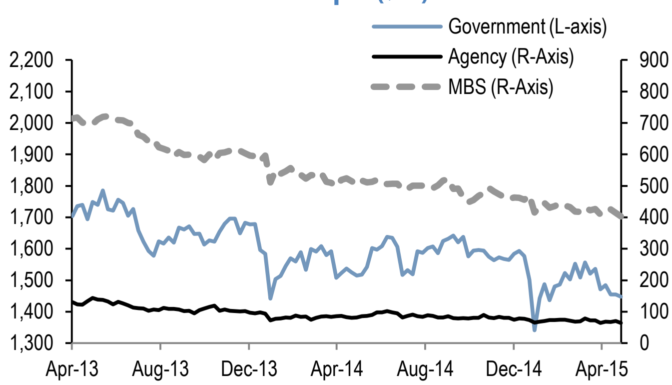
Total Repo Outstanding ($bn)



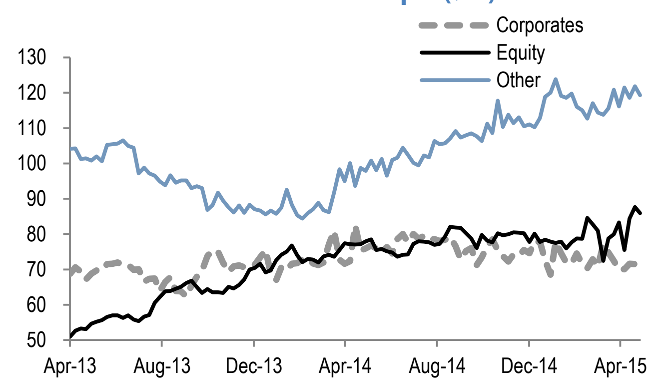
Total Securities Lending Outstanding ($bn)



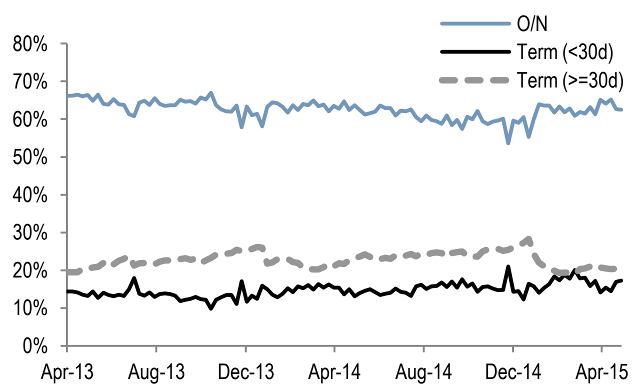
Traditional Collateral Repo ($bn)



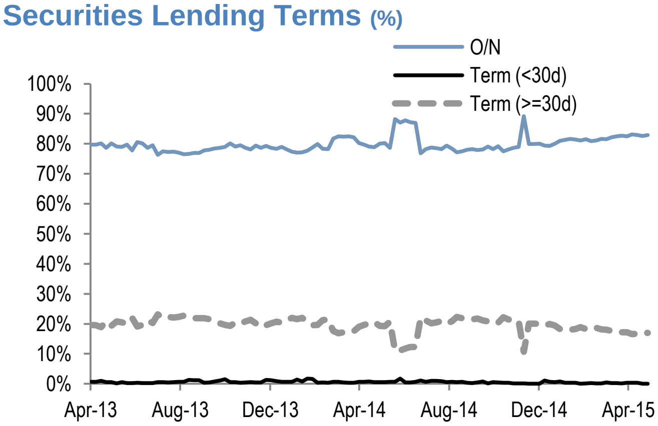
Non-Traditional Collateral Repo ($bn)



Repo Terms (%)



Securities Lending Terms (%)

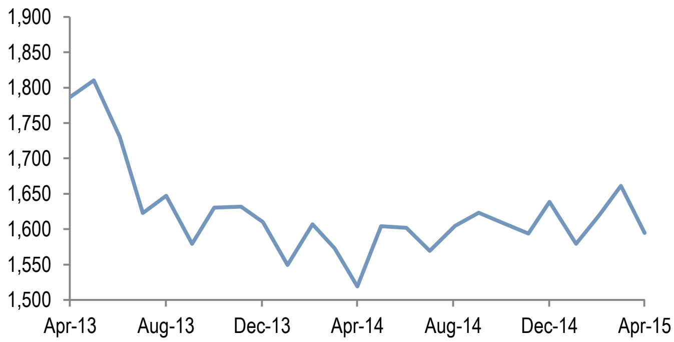


Source: Federal Reserve

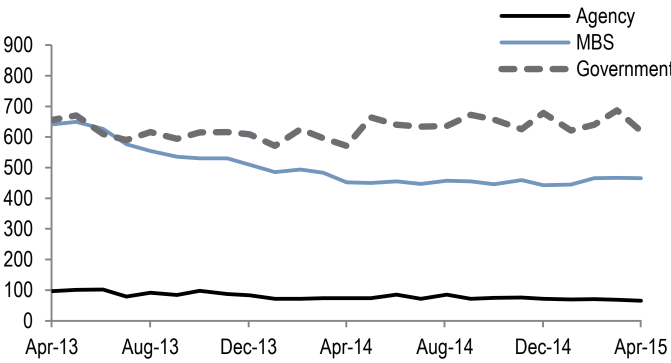
Alex Roever
(1-212) 834-3316
alex.roever@jpmorgan.com

Repo (continued)

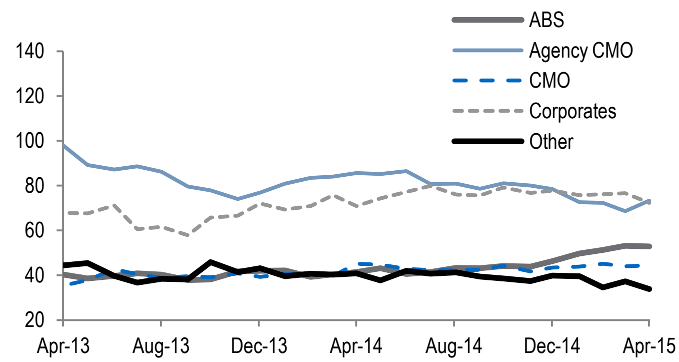
Total Tri-Party Outstanding ($bn)



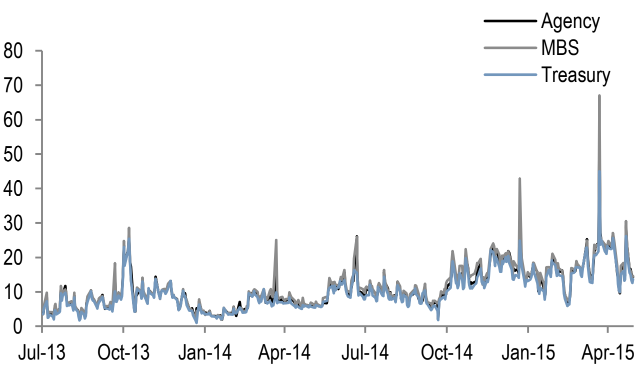
Tri-Party Traditional Collateral ($bn)



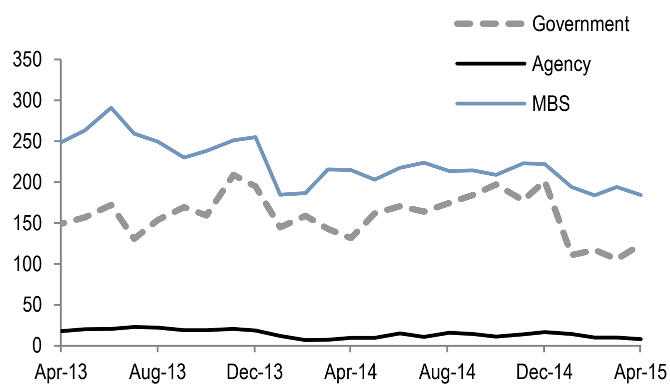
Tri-Party Non-Traditional Collateral ($bn)



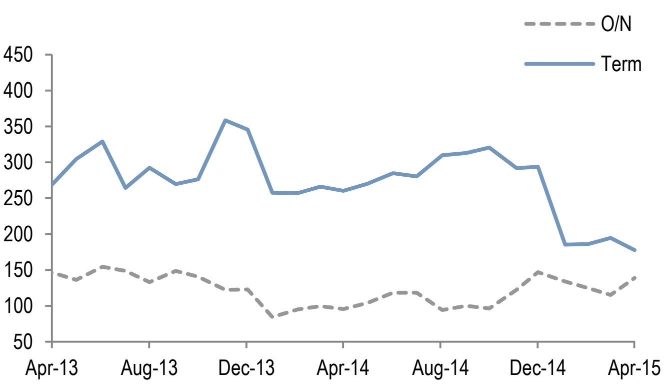
GCF rates (bp)



GCF Collateral ($bn)



GCF Term Composition ($bn)

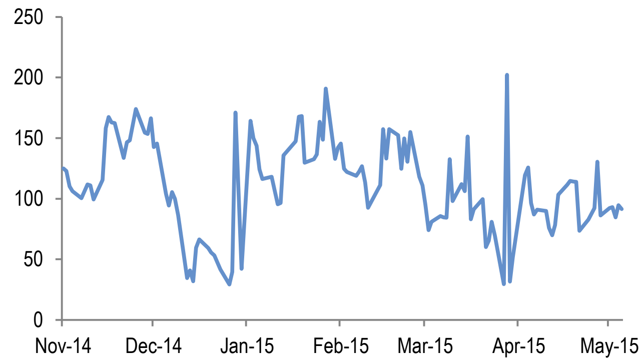


Source: Federal Reserve, DTCC

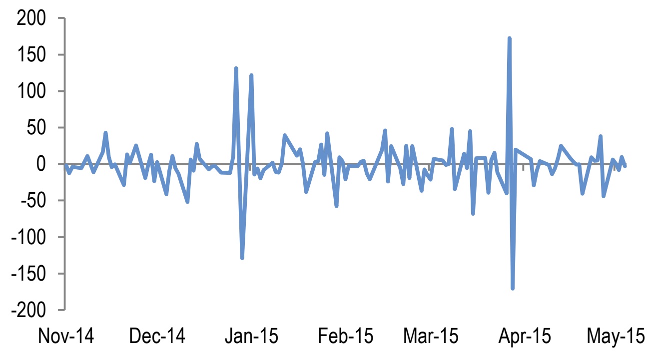
Alex Roever
(1-212) 834-3316
alex.roever@jpmorgan.com

Fed Overnight Reverse Repo

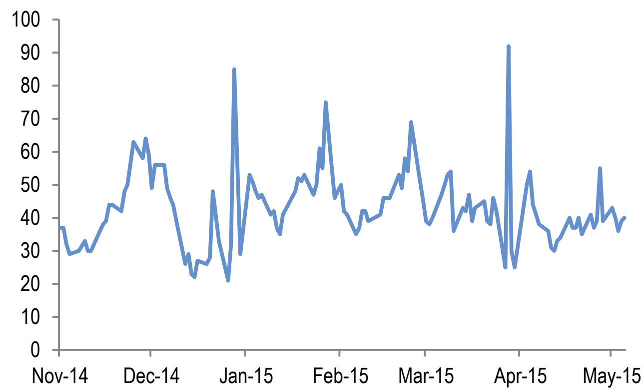
Accepted Amount ($bn)



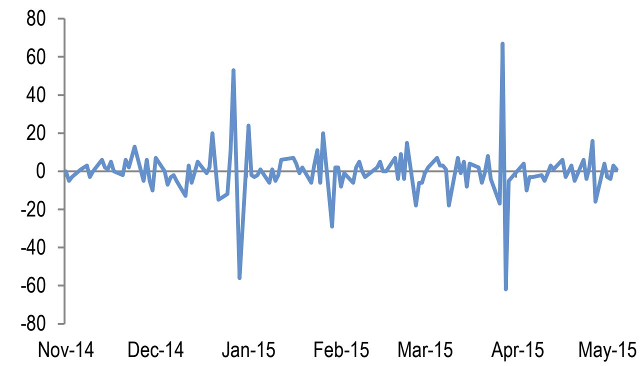
Accepted Amount: Daily Change ($bn)



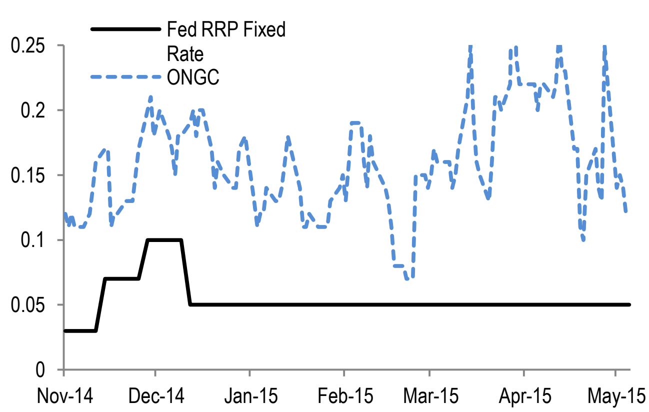
Number of Bidders



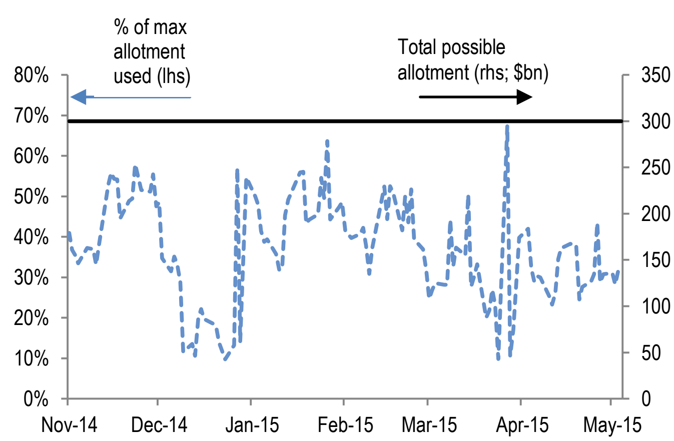
Number of Bidders: Daily Change



ONGC vs RRP fixed rate (%)



Max Allotment Used (%)

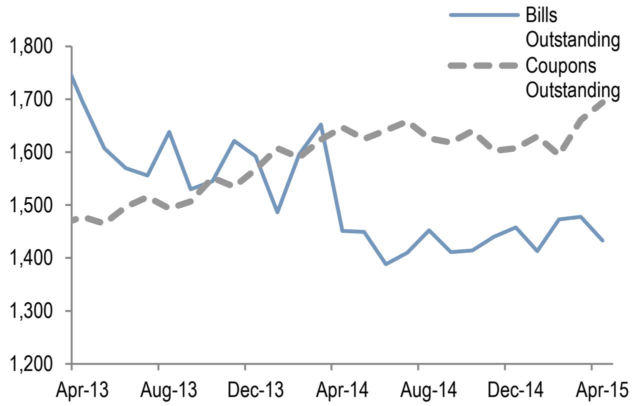


Source: Federal Reserve

Alex Roever
(1-212) 834-3316
alex.roever@jpmorgan.com

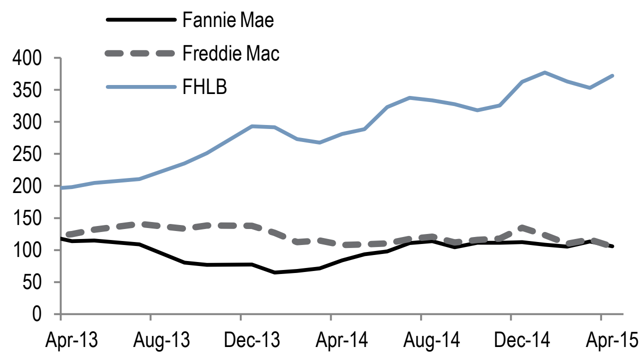
T-Bills

Bills and Coupons Outstanding ($bn)

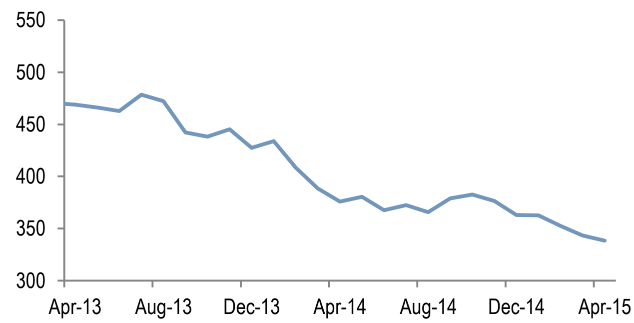


Agency Debt

Discount Notes Outstanding ($bn)

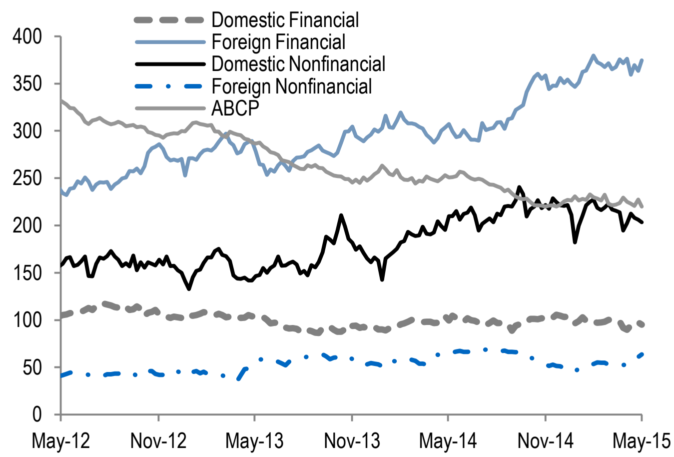


Coupons Outstanding ($bn)

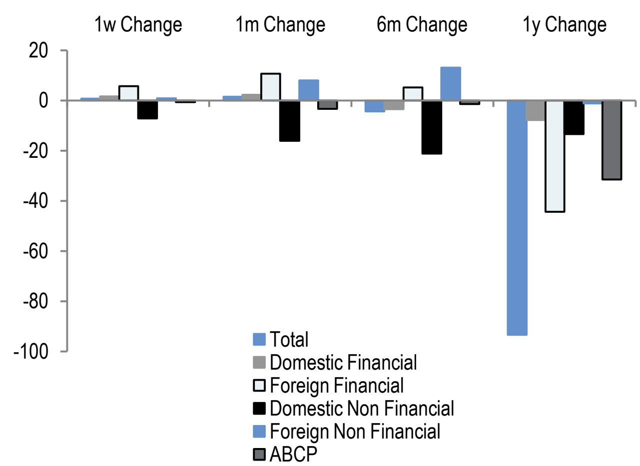


Commercial Paper

Outstanding ($bn)



Change ($bn)



Source: Federal Reserve, US Treasury, J.P. Morgan estimates

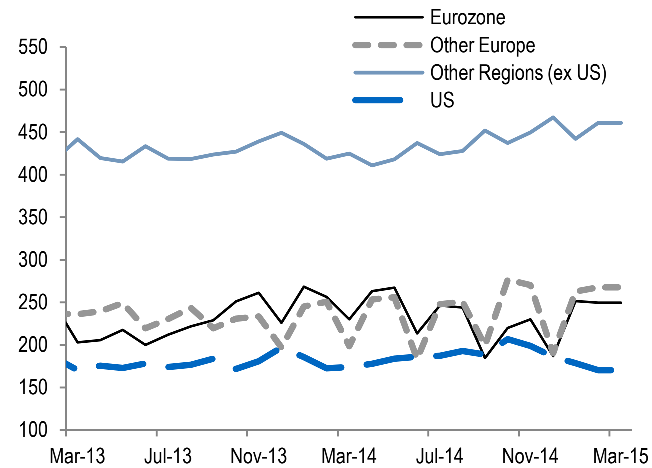
Alex Roever
(1-212) 834-3316
alex.roever@jpmorgan.com

Money Market Funds

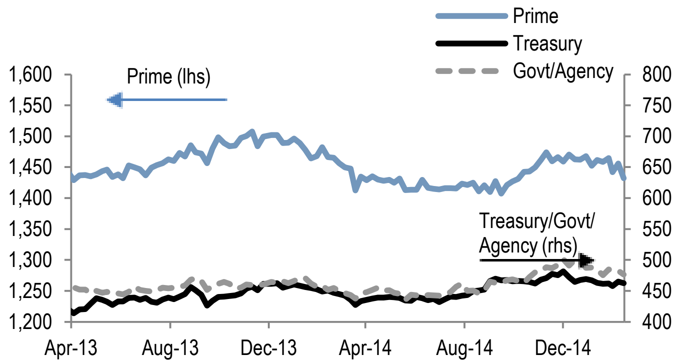
Prime MMF Asset Allocation

Issuer Type	Apr-15	% of total	m/m chg	chg since Dec-14	m/m % chg	% chg since Dec-14
Banks (US)	164	12%	6	(4)	4%	-3%
Banks (Eurozone)	204	15%	32	37	18%	22%
Banks (Other Yankee)	653	47%	44	27	7%	4%
ABCP/CCP (Banks)	62	4%	(6)	(6)	-9%	-9%
ABCP (Non-banks)	16	1%	(2)	1	-11%	5%
ABS issuers	2	0%	(0)	1	-2%	58%
Corporates (Financial)	10	1%	(2)	(3)	-13%	-25%
Corporates (Non-financial)	46	3%	5	10	12%	28%
US Treasuries	72	5%	(14)	(6)	-16%	-7%
US Agencies	79	6%	19	(18)	31%	-19%
US S&L Govt/Munis	14	1%	3	2	31%	16%
Foreign SSA	42	3%	1	8	3%	23%
Central Banks (Fed RRP)	24	2%	(148)	(155)	-86%	-86%
Other	1	0%	(1)	(3)	-42%	-67%
Total	**1,390**	**100%**	**(89)**	**(111)**	**-6%**	**-7%**

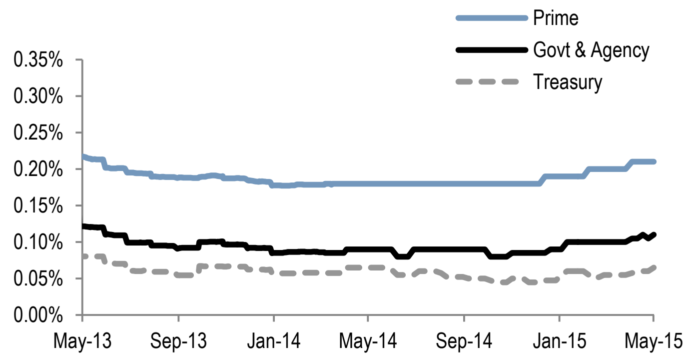
Geographical Composition (banks) ($bn)



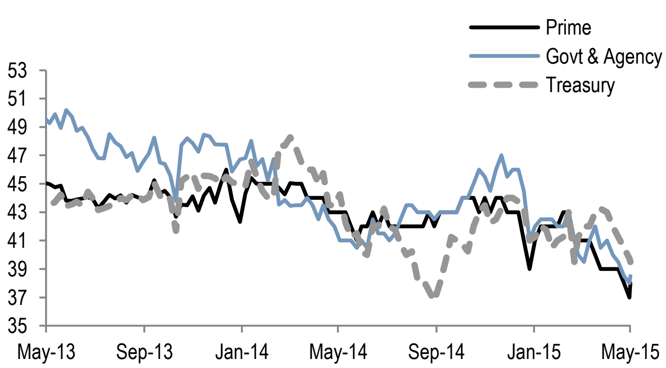
Assets Under Management ($bn)



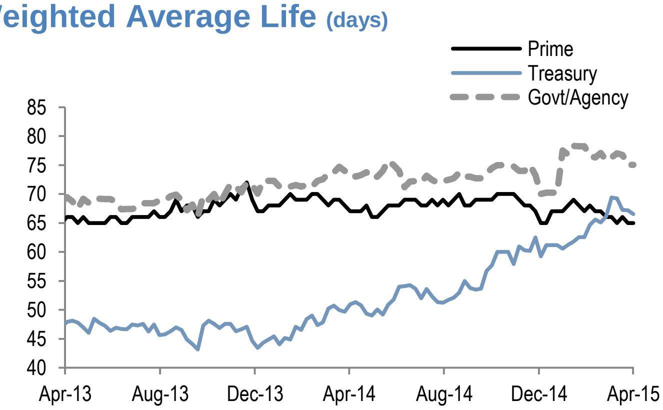
Gross Yield (%)



Weighted Average Maturity (days)



Weighted Average Life (days)



Source: iMoneyNet, fund holdings reports

Alex Roever
(1-212) 834-3316
alex.roever@jpmorgan.com

Liquidity Calendar

	Treasury	Fed	ECB	US	Europe	Other
M 18-May	Announce: 1m Bill Auction: 3m Bill ($24bn) 6m Bill ($24bn)	Chicago Fed President Evans speaks in Stockholm (2:00am)				
T 19-May						
W 20-May		Chicago Fed President Evans speaks in Munich (3:00am) FOMC minutes				
R 21-May	Announce: 3m Bill 6m Bill 1y Bill 2y Note 5y Note 7y Note 2y FRN Auction: 10y TIPS ($13bn) Settle: 3m Bill ($24bn) 6m Bill ($24bn) **Net cash flow: $4bn***	SF Fed Pres. Williams speaks (7:00pm)				
F 22-May		Fed Chair Yellen speaks in Providence (1:00pm)		CPI		BOJ rate decision
M 25-May		Cleveland Fed President Mester speaks in Reyjavik (12:00pm)		Memorial day, markets closed		
T 26-May	Announce: 1m Bill Auction: 2y Note ($26bn)	Rich. Fed Pres. Lacker speaks (8:10pm)				
W 27-May	Auction: 5y Note ($35bn) 2y FRN ($13bn)					
R 28-May	Announce: 3m Bill 6m Bill Auction: 7y Note ($29bn) **Net cash flow: $4bn***	San Francisco Fed President Williams speaks in Singapore (2:20am) Minneapolis Fed President Kocherlakota speaks in Montana (2:45pm)				
F 29-May	Settle: 10y TIPS ($13bn) 2y FRN ($13bn) **Net cash flow: $26bn***			GDP (Q1 2nd estimate)		
M 1-Jun	Announce: 1m Bill Settle: 2y Note ($26bn) 5y Note ($35bn) 7y Note ($29bn) **Net cash flow: $9bn***					
T 2-Jun						
W 3-Jun		Chic. Fed Pres. Evans speaks (2:15pm) Beige Book				
R 4-Jun	Announce: 3m Bill 6m Bill 3y Note 10y **Net cash flow: $6bn***					
F 5-Jun				Employment (May)		

*Net cash flows equal projected and/or announced gross issuance of T-bills, Treasury notes/bonds and TIPs minus principal maturities and coupon payments. Projected gross issuances are J.P. Morgan forecasts.
**Federal Reserve purchases and sales of Treasury coupons are based on the tentative outright Treasury operation schedule published on http://www.newyorkfed.org/markets/tot_operation_schedule.html. Sizes are estimated.

Alex Roever
(1-212) 834-3316
alex.roever@jpmorgan.com

Index of Recent Topics

Regulatory Developments

- **Quarterly regulatory update:** Q42014, Q32014, Q22014, Q12014, Q42013
- **Basel III-LCR:** 9/8/2014, 4/14/2014, 11/4/2013, 8/26/2013, 7/15/2013, 4/8/2013, 1/14/2013, 1/14/2013, 1/7/2013
- **Dodd-Frank/Volcker Rule:** 11/3/2014, 12/16/2013, 9/23/2013
- **EU Financial transaction tax:** 4/29/2013
- **LIBOR reform:** 7/15/2013, 2/11/2013
- **Shadow Banking:** 9/16/2013, 4/22/2013
- **Foreign Capital Rules:** 2/24/2014
- **Other:** 11/3/2014, 6/23/2014, 3/3/2014 (SIFI excise tax)

Money Fund Reform

- **US:** 5/4/2015, 4/27/2015, 2/18/2015, 2/2/2015, 8/4/2014, 7/28/2014, 7/21/2014, 5/12/2014, 10/7/2013, 9/9/2013, 7/29/2013, 6/10/2013, 6/3/2013, 3/18/2013, 2/25/2013, 1/14/2013
- **Europe:** 9/9/2013, 5/6/2013, 3/17/2014

Money Market Fund Holdings

- **Monthly updates:** 4/13/2015, 3/16/2015, 2/11/2015, 1/16/2015, 12/15/2014, 11/24/2014, 10/14/2014, 9/12/2014, 8/19/2014, 7/16/2014, 6/16/2014, 5/15/2014, 4/14/2014, 3/13/2014, 2/13/2014, 1/13/2014

Fed

- **Exit strategy:** 4/13/2015, 9/22/2014
- **Reverse repo facility:** 2/9/2015, 1/26/2015, 1/12/2015, 11/3/2014, 10/6/2014, 9/22/2014, 9/15/2014, 7/21/2014, 7/14/2014, 7/1/2014, 3/10/2014, 1/27/2014, 1/13/2014, 1/6/2014, 9/23/2013, 8/26/2013
- **IOER:** 1/27/2014, 1/13/2014, 11/18/2013, 8/26/2013
- **Flow of funds:** 3/10/2014, 6/10/2013, 3/11/2013

Treasury

- **FRN:** 2/2/2015, 2/3/2014, 11/4/2013, 8/5/2013, 2/11/2013
- **Quarterly refunding announcement:** 5/11/2015, 2/9/2015, 11/10/2014, 8/11/2014, 5/6/2013

FDIC

- **Quarterly banking profile:** 9/29/2014, 6/2/2014, 3/3/2014, 3/4/2013
- **TAG program:** 6/3/2013, 3/4/2013, 1/7/2013

Miscellaneous

- **Moody's matrix:** 6/9/2014
- **Deposit shedding:** 3/2/2015
- **Bills market:** 3/9/2015, 4/20/2015
- **Rating agencies activity:** 11/18/2013, 8 /26/2013, 4/8/2013, 2/4/2013
- **Securities Lending:** 4/20/2015
- **Short-term corporates:** 2/23/2015, 3/24/2014
- **Repo market primer:** 3/31/2014
- **Rate trends/forecasts:** 5/5/2014, 4/28/2014
- **Tier 2 CP:** 3/23/2015

Analytics Packages

- **Weekly analytics package:** 5/11/2015
- **FRNI weekly package:** 5/11/2015

2015 Outlook: Outlook

Corrected Note: We have corrected the summary of announcement for Goldman Sachs in Exhibit 8 on page 6.

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

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.

Explanation of Credit Research Ratings:
Ratings System: J.P. Morgan uses the following issuer portfolio weightings: Overweight (over the next three months, the recommended risk position is expected to outperform the relevant index, sector, or benchmark), Neutral (over the next three months, the recommended risk position is expected to perform in line with the relevant index, sector, or benchmark), and Underweight (over the next three months, the recommended risk position is expected to underperform the relevant index, sector, or benchmark). J.P. Morgan Emerging Markets Sovereign Research uses Marketweight, which is equivalent to Neutral. NR is Not Rated. In this case, J.P. Morgan has removed the rating for this security because of either a lack of a sufficient fundamental basis or for legal, regulatory or policy reasons. The previous rating no longer should be relied upon. An NR designation is not a recommendation or a rating. NC is Not Covered. An NC designation is not a rating or a recommendation. Analysts can rate the issuer, the individual bonds of the issuer, or both. An issuer recommendation applies to all of the bonds at the same level of the issuer's capital structure, unless we specify a different recommendation for the individual security. When we change the issuer-level rating, we are changing the rating for all of the issues covered, unless otherwise specified. For CDS, we use the following rating system: Long Risk (over the next three months, the credit return on the recommended position is expected to exceed the relevant index, sector or benchmark), Neutral (over the next three months, the credit return on the recommended position is expected to match the relevant index, sector or benchmark), and Short Risk (over the next three months, the credit return on the recommended position is expected to underperform the relevant index, sector or benchmark).

Valuation & Methodology: In J.P. Morgan's credit research, we assign a rating to each issuer (Overweight, Underweight or Neutral) based on our credit view of the issuer and the relative value of its securities, taking into account the ratings assigned to the issuer by credit rating agencies and the market prices for the issuer's securities. Our credit view of an issuer is based upon our opinion as to whether the issuer will be able service its debt obligations when they become due and payable. We assess this by analyzing, among other things, the issuer's credit position using standard credit ratios such as cash flow to debt and fixed charge coverage (including and excluding capital investment). We also analyze the issuer's ability to generate cash flow by reviewing standard operational measures for comparable companies in the sector, such as revenue and earnings growth rates, margins, and the composition of the issuer's balance sheet relative to the operational leverage in its business.

J.P. Morgan Credit Research Ratings Distribution, as of March 31, 2015

	Overweight	Neutral	Underweight
Global Credit Research Universe	24%	58%	18%
IB clients*	68%	63%	60%

Note: The Credit Research Rating Distribution is at the issuer level. Please note that issuers with an NR or an NC designation are not included in the table above.
*Percentage of investment banking clients in each rating category.

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 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) 100/03/2015 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 March 28, 2015.