NOMURA

Securitized Products Weekly

SECURITIZED PRODUCTS

Securitized Products Weekly

Agency MBS: Market Overview and Relative Value

During the past week, 30-year production coupon MBS passthroughs outperformed their Treasury hedges by 10-12 ticks, which had reversed most of the losses suffered by the agency MBS sector over the prior two weeks. The GN/FN swaps have also gained 6-7 ticks over the week. Note that these performance numbers were realized before Britain's referendum results were announced and when the 10-year Treasury had backed up by 17-18bp over the week. However, with vote results in, the 10-year Treasury yield is now hovering around 1.60% and the outlook for the MBS market has changed significantly, as discussed below. In addition, we discuss prepay projections, spec pool positioning and CMO issuance under different mortgage rate scenarios.

Agency MBS: VA Seasoning Ramp Indicates Potentially Increasing Liability for Some Lenders

Based on the VA WALA ramps observed recently, we conclude that some lenders are not following the six-month seasoning requirement for a VA IRRRL loan to be considered Safe Harbor QM, thereby increasing their future liability. Given that Ginnie Mae insures investors against lender default, we would expect Ginnie Mae to have a vested interest in enforcing the IRRRL requirements so that the IRRRL is considered Safe Harbor QM.

Mortgage Credit

RMBS trading volumes were light ahead of the UK referendum. Following the vote, CRT spreads widened by as much as 15bps on Friday, before settling in 5-10bps wider from Thursday's levels. We expect US housing to remain resilient with supply remaining constrained and mortgage rates near all-time lows, and see any Brexit-related weakness as a potential buying opportunity for RMBS. DB as Trustee notified investors that Triaxx issued an EOD notice on RALI deals serviced by Ocwen, alleging breaches of PSA due to improper servicing practices and failure to notify parties about potential breaches. We provide an update on called deals and expect a pickup in redemptions for Countrywide bonds after the payout. Additionally, we remain cautious on deals that are the subject of any litigation against trustees.

CLO

Flows in the CLO market were light for most of the week, and after the UK referendum vote, CLOs traded off slightly, with BBs 2 points lower and BBBs 1-1.5 points lower on Friday. We remain constructive on CLOs as valuations remain attractive, fundamental performance remains mostly robust, and we expect the Fed to remain accommodative. We analyze the difference in US vs. EUR CLO AAA spreads for Japanese investors after accounting for currency hedging costs. Although European AAAs appear slightly more attractive versus US AAAs to Japanese investors based on current spread metrics, changes in corporate spread differentials or yield differentials could tip this balance, in addition to perceptions of increased risk in European leveraged loans. Separately, we provide an update on US CLO performance through June; the CCC share has increased marginally and the exposure to defaulted loans has largely remained flat since March. Additionally the median WARF has remained mostly unchanged over the past quarter.

Global Markets Research

24 June 2016

Research analysts

US Securitized Products

Paul Nikodem - NSI
paul.nikodem@nomura.com
+1 212 667 2130

Ohmsatya Ravi - NSFSPL
ohmsatya.ravi@nomura.com
+91 22 672 35381

Dhivya Krishna - NSI
dhivya.krishna@nomura.com
+1 212 667 2183

Arun Manohar - NSI
arun.manohar@nomura.com
+1 212 667 9360

Pratik K. Gupta - NSI
Pratik.Gupta@nomura.com
+1 212 667 1403

Steven Romasko - NSI
steven.romasko@nomura.com
+1 212 298 4854

Rohit Sinha - NSI
Rohit.Sinha@nomura.com
+1 212 298 4905

Shawn Lim - NSI
shawn.lim@nomura.com
+1 212 298 4469

Production Complete: 2016-06-24 20:29 UTC

Market Overview and Relative Value

Recent Performance and Market Overview

During the past week, 30-year production coupon MBS passthroughs outperformed their Treasury hedges by 10-12 ticks (Thursday-Thursday closes), which had reversed most of the losses suffered by the agency MBS sector over the prior two weeks. The GN/FN swaps have also gained 6-7 ticks over the week. Note that these performance numbers were realized before the results from Britain's polls were announced and when the 10-year Treasury backed up by 17-18bp over the week. However, after the Britain's poll results came in, the 10-year Treasury yield is hovering around 1.50% and the outlook for the MBS market has changed significantly as discussed below.

Agency MBS: Return to a Neutral Stance on the MBS Basis[1]

As the 10-year Treasury yield is hovering around its three-year lows and there is an elevated level of uncertainty regarding the direction of interest rates due to the current macro-economic environment, we consider three different rate scenarios for 2H'16 and outline some major themes that are likely to play out in the agency MBS market in each one of these scenarios:

- Scenario A: 10-year Treasury Yield Averages 1.20-1.50%
- Scenario B: 10-year Treasury Yield Averages 1.50-1.80%
- Scenario C: 10-year Treasury Yield Averages 1.80-2.10%

Scenario A: 10-year Treasury Yield Averages 1.20-1.50% in 2H'16

- 30-year mortgage rate is likely to average 3.30-3.35% and the monthly gross issuance of agency MBS is likely to average $140bn. Originators are likely to operate at their full capacity and the aggregate Fannie 30-year MBS prepays should be around 21-22CPR at these mortgage rate levels. 15-year S-curves are likely to steepen and become comparable to those of 30-year S-Curves. Prepay pickup will be highest for 2015 vintage 3.0s and 3.5s of large loan size and relatively higher WACs.
- Mortgage securitization rate is likely to be somewhat higher, and hence net issuance in 2H'16 could be higher by about $10bn due to the rates rally alone. The net issuance of agency MBS in 2H'16 is likely to be about $125-130bn.
- The Fed is unlikely to tighten again in 2H'16 and the tapering of Fed's reinvestments may not happen before yearend 2017 – there may even be talk of QE 4 again. The monthly paydowns on Fed's MBS holdings should average $41bn.
- Normalized implied volatilities are likely to have a downward bias as the absolute level of yields reaches historic lows (although initially they may spike slightly higher). In this low yield-low volatility environment, spreads offered by agency MBS should be quite attractive.
- Servicers may become buyers of MBS as the rates rally shortens their MSR portfolios.
- Domestic fixed-income money managers are likely to see strong in-flows which could result in some additional demand for MBS.
- Demand from domestic banks is likely to be lower than expected at the low yield levels (but MSR hedging related flows should compensate for lower bank portfolio demand).
- Overseas investors may not add MBS initially but they are likely to provide strong bid once rates stabilize at new low levels, as there will be very limited attractive alternatives.

[1] A major portion of this subsection was published on Wednesday (6/22).

Research analysts

US Securitized Products

Ohmsatya Ravi - NSFSPL
ohmsatya.ravi@nomura.com
+91 22 672 35381

Paul Nikodem - NSI
paul.nikodem@nomura.com
+1 212 667 2130

Dhivya Krishna - NSI
dhivya.krishna@nomura.com
+1 212 667 2183

Arun Manohar - NSI
arun.manohar@nomura.com
+1 212 667 9360

Rohit Sinha - NSI
Rohit.Sinha@nomura.com
+1 212 298 4905

- Production coupon MBS spreads versus the Treasury curve are likely to widen to 85-86bp before stabilizing and tightening.

Scenario B: 10-year Treasury Yield Averages 1.50-1.80% in 2H'16

- 30-year mortgage rate is likely to average 3.50-3.55%, while the monthly gross issuance of agency MBS is likely to average $125-130bn. Aggregate Fannie 30-year MBS prepays should be around 18-19CPR at these mortgage rate levels.
- The net issuance of agency MBS in 2H'16 is likely to be about $115-120bn.
- The Fed is likely to tighten only one more time in 2H'16. The market may price the tapering of Fed's reinvestments to start in 2H'17 but may not expect an end to reinvestments before yearend 2017. The monthly paydowns on Fed's MBS holdings should average $35bn.
- Normalized implied volatilities are unlikely to move one way or the other, and the range-bound rates environment is likely to attract carry players to increase their exposure to MBS.
- Domestic banks and overseas investors are likely to be significant net buyers of MBS, but MSR hedging activity should be minimal.
- Domestic money managers are likely to be net buyers of agency MBS due to the relative attractiveness of negative convexity exposure versus other risks.
- 30-year FN 3.0s, GN 3.0s, and 15-year 2.5s are likely to outperform other TBAs.
- Production coupon MBS spreads versus the Treasury curve are likely to tighten to 75-76bp.

Scenario C: 10-year Treasury Yield Averages 1.80-2.10% in 2H'16

- 30-year mortgage rate is likely to average 3.75-3.80%, while the monthly gross issuance of agency MBS is likely to average $110-115bn. Aggregate Fannie 30-year MBS prepays should be around 14-15CPR at these mortgage rate levels.
- The net issuance of agency MBS in 2H'16 is likely to be $110-115bn.
- The Fed is likely to tighten one more time in 2H'16. The market may price tapering of Fed's reinvestments to start around the middle of 2017 and an end to it by yearend 2017. The monthly paydowns on Fed's MBS holdings should average $28bn.
- Normalized implied volatilities are unlikely to move one way or the other and the curve is likely to flatten.
- Domestic banks and overseas investors are likely to be significant net buyers of MBS.
- Mortgage carry will be attractive and money managers are likely to be net buyers.
- 30-year FN 3.5s, GN 3.0s and 15-year 2.5-3.0s are likely to outperform other TBAs.
- Production coupon MBS spreads versus the Treasury curve are likely to tighten to 74-75bp.

Figure 1 summarizes our estimates of overall supply demand technicals in the MBS market in 2H'16 in the three rate scenarios discussed above. While money managers need to absorb $50-55bn agency MBS in 2H'16 if the 10-year Treasury yield averages 1.20-1.50%, it is unlikely that the nominal spread offered by CC MBS versus the Treasury curve will move out of the past two year range of 71-86bp on a sustained basis because of the lack of attractive alternatives to agency MBS.

Fig. 1: Summary of Supply-Demand Technicals in 2H'16 in Different Rate Scenarios

		Scenario A	Scenario B	Scenario C
10-year Treasury Yield		1.20-1.50%	1.50-1.80%	1.80-2.10%
30-year Mortgage Rate	1H'16 (Est)	3.30-3.35%	3.50-3.55%	3.75-3.80%
Net Growth of the Agency MBS Market	$65-70bn	$125-130bn	$115-120bn	$110-115bn
Likely Net Demand for Agency MBS				
Federal Reserve	$0bn	$5bn	$5bn	$5bn
Domestic Banks + Savings	$45-50bn	$45bn	$45bn	$50bn
Overseas Investors	$40-45bn	$30bn	$35bn	$40bn
GSEs	-$15bn	-$10bn	-$10bn	-$10bn
Mortgage REITs	$0bn	$5bn	$5bn	$5bn
Agency MBS that Need to be Absorbed by Others (Domestic Money Managers)	($15bn)-$0bn	$50-55bn	$35-40bn	$20-25bn

Domestic bank demand includes changes in MSR portfolios also.

Source: Nomura Securities International estimates

Our strategy team recommended a modest overweight on agency MBS versus Treasuries on Monday morning (June 20) when the CC MBS nominal spread was at around 83bp. The CC nominal spread is at around 78bp currently, and we recommend returning to a neutral stance on the MBS basis. The agency MBS sector is holding up very well today, even as the rates market rallied a lot, largely because of servicer hedging needs. Once servicer hedging needs are out of the way, supply pressure will be felt and MBS spreads should have a widening bias. Note also that the probability of the 10-year Treasury remaining above 1.50% appears to be similar to that of the 10-year Treasury rallying below 1.50% currently, and we see a meaningful downside in a rally scenario and only a limited upside in a backup scenario.

Relative Value in the Agency Passthrough Market

- Long FN 3.5s Butterfly with duration hedges (Since 6/10/2016)
- Long 15-year DW 3.0s/2.5s Swap at 80% HR (Since 5/6/2016)

Figures 2 and 3 show the valuations of the 30-year and 15-year coupon stacks on our models as of yesterday's close (the results from YieldBook models adjusted to reflect our expectations for prepayment speeds). Although higher coupon MBS look somewhat rich in OAS terms, it is hard to take a strong view on coupon stack valuations at current dollar prices. This is because even a small change in prepay expectations (or model parameters) can cause a sharp swing in LOAS of FN 4.0s and FN 4.5s.

Our strategy team has been recommending buying FN 3.5s butterfly with duration hedges since June 10, when this fly was trading at around 0.5-1.0 ticks. Although this fly had appreciated from 0.5/1.0 tick to 0-04 as of yesterday's close, we continue to believe that the 3.5s fly is cheap and recommend buying it as follows: Long $200mn FN 3.5s fly + Long $10mn FN 3.5s. Across the 15-year coupon stack, we continue to suggest buying the DW 3.0s/2.5s swap at 80% hedge ratio now (i.e., Long $100mn DW 3.0s versus $80mn DW 2.5s). However, we acknowledge that coupon swaps are likely to experience heavy volatility over the next few days if the 10-year Treasury stabilizes below 1.50%.

15-year MBS have underperformed 30-year MBS (especially the DW 2.5s/FN 3.0s swap) over the past six weeks, and 15-year/30-year swaps are looking somewhat attractively priced at the moment. We look for the right opportunity to initiate an overweight on the 15-year sector.

Fig. 2: Valuations of the 30-year Coupon Stack (as of June 23, 2016)

Security	TBA Assumption (July)	Yield	Tsy ZV (bp)	Swap ZV (bp)	Tsy OAS (bp)	LOAS (bp)	Duration	Convexity	1-yr Speed
FNCL 3.0s	2 WALA, 3.70 GWAC, $280 K	2.58%	78	96	24	39	5.0	-2.8	4.1
FNCL 3.5s	6 WALA, 4.20 GWAC, $280 K	2.39%	92	108	28	41	3.5	-3.2	13.5
FNCL 4.0s	6 WALA, 4.60 GWAC, $280 K	1.96%	83	97	23	35	2.3	-2.0	22.7
FNCL 4.5s	30 WALA, 5.00 GWAC, $280 K	1.64%	61	71	24	34	2.0	-0.8	24.5

Source: YieldBook, Nomura Securities International

Fig. 3: Valuations of the 15-year Coupon Stack (as of June 23, 2016)

Security	TBA Assumption (July)	Yield	Tsy ZV (bp)	Swap ZV (bp)	Tsy OAS (bp)	LOAS (bp)	Duration	Convexity	1-yr Speed
FNCI 2.5s	2 WALA, 3.10 GWAC, $260 K	1.91%	43	51	17	23	3.5	-2.0	6.2
FNCI 3.0s	6 WALA, 3.50 GWAC, $260 K	1.92%	53	61	23	29	2.9	-2.0	12.3
FNCI 3.5s	48 WALA, 4.00 GWAC, $200 K	1.49%	34	36	15	17	2.0	-0.9	22.0

Source: YieldBook, Nomura Securities International

Prepay Projections and Positioning Under Different Mortgage Rate Scenarios

Following the UK referendum vote, 10-year treasury yields rallied to 1.40% intra-day, however, it has backed-up to around 1.56% shortly afterward. Note that 10-year yields were at comparable levels back in December 2012 and mortgage rates then were around 3.30%. Given the increased uncertainty around rates in this section, we look at both prepays and recommended positioning in agency MBS market under different mortgage rate scenarios. The two mortgage rate scenarios we consider here are: current levels of 3.5%-3.55% and if mortgage rates rally to 3.25%-3.30%.

Prepays Under Different Mortgage Rate Scenarios

In this section, we take a closer look at factors that could begin to impact prepays around 3.25%-3.30% mortgage rates. The two most important factors are:

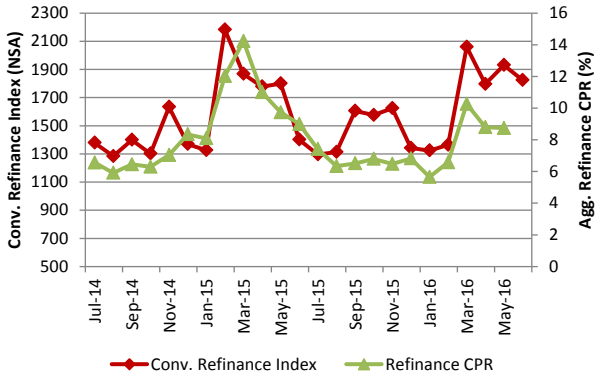
Media Effect: Mortgage rates rallied lower than the lows of 3.59% seen early last year, causing the refinance index to rise to levels seen last year. However, aggregate conventional prepays have been a lot lower than what one would have predicted based on the level of the refinance index alone (Figure 4). One possible reason for the higher prepay response in early 2015 for the same level of mortgage rates is a larger media effect around refinance opportunities.

A good proxy to assess the media effect is to use data from Google trends. We chart the number of searches each week with the keyword “refinance” in Figure 5. From this chart, one can argue that the media effect around refinancing opportunities was relatively high when mortgage rates rallied to their lows in January 2015, compared with similar lows in 2016. The media effect during January 2015 could have been relatively high possibly for a couple of reasons:

- A large number of recent vintage borrowers (i.e., 2013 and 2014 vintages) were seeing mortgage rates of 3.75% and lower for the first time in 18 months. Hence, the media effect as it relates to mortgage rates was relatively high.
- FHA cut its annual insurance premiums by around 50bp, creating new refinance opportunities for existing FHA borrowers. It is possible that increased media coverage of refinance opportunities as a result of the policy change, albeit for FHA mortgages, increased borrower awareness in general regarding refinancings.

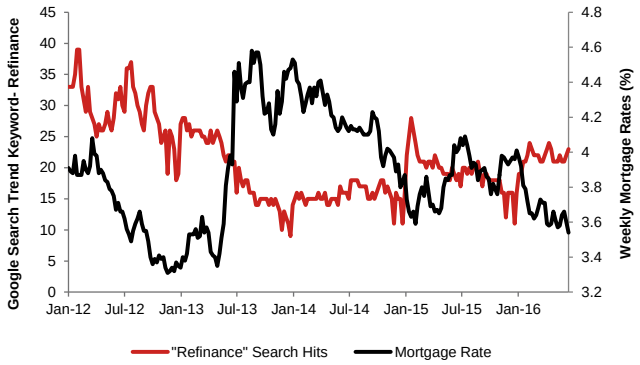
Consequently, if mortgage rates rally to all-time lows of 3.25% - 3.30%, then we would expect media effect, which has been largely absent in 2016, to increase, causing aggregate prepays to increase materially. We also believe that the increase is likely to disproportionately impact cohorts such as the 2015 vintage 3.0s and 3.5s with the largest loan size and relatively higher WACs.

Fig. 4: MBA Conv. Refinance Indices vs. Aggregate Refinance CPRs



Source: MBA, Nomura Securities International

Fig. 5: Proxy for Media Effect vs. Mortgage Rates



Source: Google, Freddie Mac, Nomura Securities International

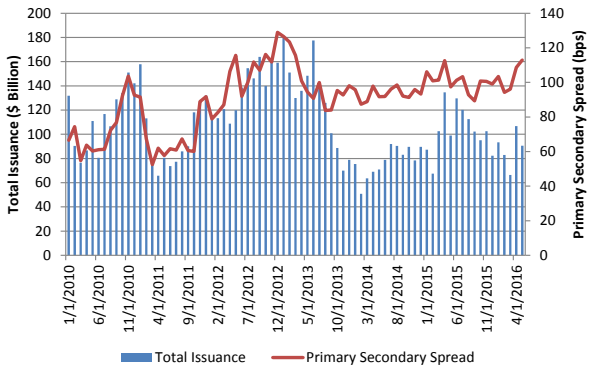
Note: Scale is calibrated to the highs seen back in 2009.

Origination Capacity: Although the primary to secondary spread has widened slightly as mortgage rates rallied to around 3.5%, the primary to secondary spread has not held at those wide levels, indicating possible capacity constraints. However, based on our analysis in this section, we believe that capacity constraints are likely to set in around $140bn of monthly issuance, which is likely to happen at mortgage rates of around 3.25%. Note, recent monthly issuance has been around $90bn-$110bn (Figure 6).

The last time the primary to secondary spreads remained elevated at around 120bp for an extended period of time was at the end of 2012 when mortgage rates rallied to a low of around 3.30% and monthly issuance was around $140bn (Figure 5). Since then, we have seen the total employment in the mortgage origination business remain almost unchanged; however, the share of brokers has increased (Figure 7).

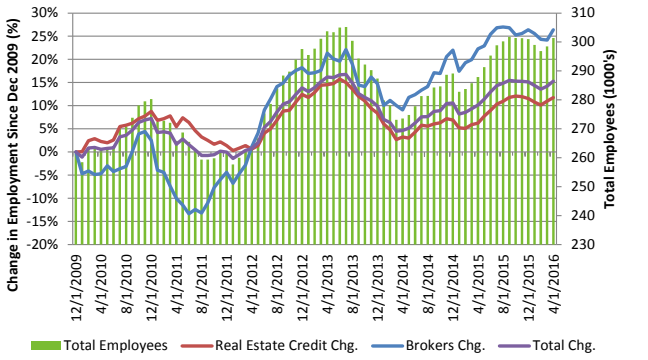
Also since the end of 2012, the mix of mortgage applications and hence mortgage loans being originated has changed materially. Given that the time and effort required to originate different mortgage loans are different, an understanding of the relative mix of the loans being originated is critical to judge how much of the change in overall production of mortgages is caused by changes in mortgage origination capacity. For example, purchase loans generally consume more origination capacity than refinance loans, and non-streamline refinance loans generally consume more origination capacity than streamline refinance loans. The share of purchase loans originated has increased from 20% to around 60% recently (Figure 8). Also, with the HARP program expiring towards the end of the year, the share of GSE refinance loans that are streamlined has declined from 35% at the end of 2012 to only 15% recently (Figure 9). Given that the employment in the mortgage origination business has remained flat but the number of loans consuming higher origination capacity has increased, one can argue that capacity constraints could set in at issuance levels materially lower than $140bn. However, the overall employment in the industry does not account for the increased efficiency resulting from improvements in mortgage origination technology, which has likely increased origination capacity for many of the small lenders. Although it is difficult to quantify the impact of increased usage of mortgage origination technology, we are inclined to conclude that capacity constraints are likely to surface when monthly issuance levels average around $140bn.

Fig. 6: Gross Issuance vs. Primary to Secondary Spread Lagged by 3-months



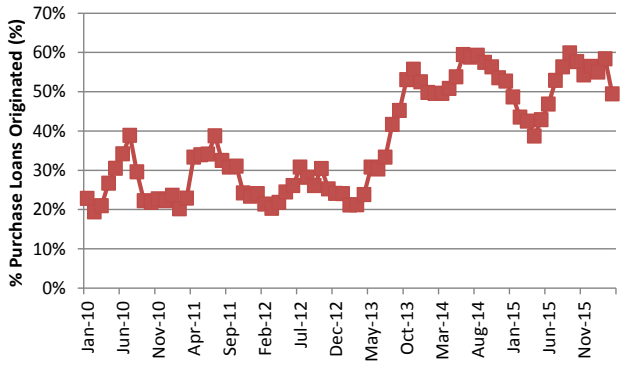
Source: YieldBook, Fannie Mae, Freddie Mac, Ginnie Mae, Nomura Securities International

Fig. 7: Employment in the Mortgage Business as Reported by BLS



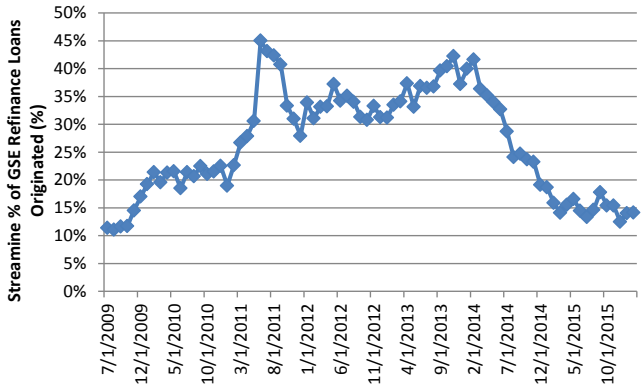
Source: BLS, Nomura Securities International

Fig. 8: Percentage of Purchase Loans in Total Number of Loans Originated



Source: Fannie Mae, Freddie Mac, GinnieMae, Nomura Securities International

Fig. 9: Streamline Percentage of GSE Refinances Loans



Source: FHFA, Nomura Securities International

Prepay Projection Under Different Mortgage Rate Scenarios

Considering the above-mentioned factors, we expect aggregate Fannie 30-Year MBS prepays to around 19CPR and 23CPR at 3.5% and 3.25% mortgage rates, respectively. Our cohort level projections are shown in Figure 10.

Fig. 10: 6 month Prepays Projections for Fannie 30-year MBS Under Different Mortgage Rate Scenarios

Coupon	Vintage	Bal ($mm)	WAC	WAM	WALA	WACLS	FICO	LTV	Apr	May	PMMS =3.25%	PMMS =3.5%
3.0	2015	61,938	3.78	348	9	281,454	766	74	9.6	10.1	18.0	14.0
3.0	2013	166,535	3.59	319	34	244,780	763	72	9.2	10.7	15.0	13.0
3.0	2012	122,456	3.59	312	40	250,404	769	71	9.4	10.9	15.0	13.0
3.5	2015	203,151	4.12	351	7	261,984	750	78	12.8	13.7	25.0	19.0
3.5	2014	69,098	4.24	339	17	251,087	759	78	19.6	20.4	30.0	25.0
3.5	2013	88,265	4.03	322	32	218,353	744	78	13.7	14.9	22.5	18.0
3.5	2012	147,905	4.00	308	44	223,785	759	74	13.4	15.1	20.0	17.0
3.5	2011	25,996	4.02	299	52	226,668	771	70	13.3	15.6	21.0	18.0
3.5	2010	9,851	4.11	286	63	211,157	773	70	14.7	17.4	25.0	21.0
4.0	2015	60,817	4.58	351	7	219,826	715	80	14.2	15.2	24.0	20.0
4.0	2014	111,205	4.59	337	20	225,451	737	80	22.0	22.9	31.0	27.0
4.0	2013	66,577	4.58	326	29	210,145	742	80	21.6	21.7	29.0	26.0
4.0	2012	43,988	4.47	306	45	184,198	737	79	15.3	16.5	23.0	20.0
4.0	2011	51,976	4.47	296	55	205,380	759	73	17.3	18.0	25.0	22.0
4.0	2010	43,814	4.49	286	64	204,413	764	71	17.7	19.3	26.0	23.0
4.0	2009	25,670	4.55	268	80	188,071	765	66	19.8	21.7	28.0	25.0
4.5	2014	20,258	5.02	335	21	177,962	704	81	19.6	21.2	23.0	21.0
4.5	2013	13,335	5.04	327	28	174,595	718	81	20.1	20.3	23.0	22.0
4.5	2011	40,228	4.93	294	56	185,120	747	76	18.1	19.4	23.0	21.0
4.5	2010	37,798	4.94	282	68	194,044	752	74	19.3	20.7	24.0	22.0
4.5	2009	50,362	4.93	270	79	184,677	756	71	21.0	22.5	25.0	23.0
5.0	2011	12,011	5.38	294	57	174,287	727	81	17.1	20.3	24.0	22.0
5.0	2010	20,154	5.37	282	69	185,050	732	79	20.1	21.6	25.0	23.0
5.0	2009	15,173	5.42	273	78	170,599	738	75	20.7	21.2	25.0	23.0
5.0	2005	10,520	5.64	223	127	140,671	721	71	20.6	21.4	25.0	23.0
5.0	2004	6,497	5.55	207	140	126,628	720	71	17.5	18.7	22.5	20.5
5.0	2003	15,326	5.50	196	150	111,029	720	70	17.1	18.3	22.0	20.0
5.5	2008	8,405	6.03	258	93	158,386	726	74	22.0	23.6	27.0	25.0
5.5	2007	7,840	6.13	247	104	157,914	717	72	22.9	22.7	26.0	24.0
5.5	2005	10,663	5.98	222	127	125,603	710	73	18.6	18.7	22.0	20.0
5.5	2004	9,265	5.94	209	139	117,298	709	73	17.7	18.7	22.0	20.0
5.5	2003	16,021	5.94	194	152	102,869	713	72	16.5	17.2	20.5	18.5
6.0	2007	10,546	6.57	248	103	143,165	705	76	22.6	22.3	26.0	23.0
6.0	2006	8,585	6.56	234	116	134,327	706	74	21.6	21.1	23.0	22.0

Source: Fannie Mae, Nomura Securities International

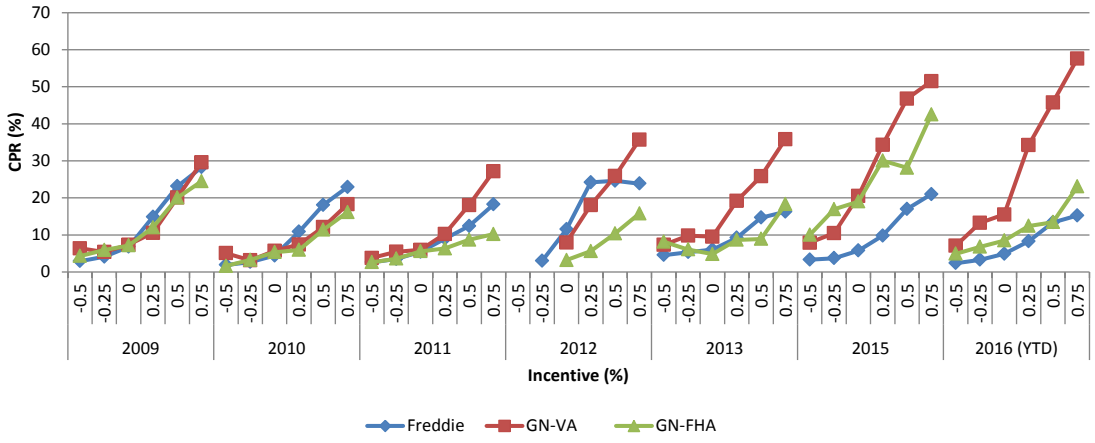
Ginnie S-Curves Will Continue to be Steeper than Conventionals

As highlighted in our prior weeklies, VA S-curves have steepened every year since 2013, while FHA S-curves steepened starting in 2015 (Figure 11). The steepening in the FHA S-curves is understandable because of the 50bp MIP reduction in 2015, but the MIP reduction should have had a negligible impact on 6-12 WALA loans in 2016. As of 2016, FHA and VA S-curves are both higher than conventional S-curves.

We believe that the recent steepening is caused by Ginnie borrowers becoming increasingly efficient in exercising the refinance option as a result of some non-bank lenders that have origination and servicing practices that are heavily reliant on high "recapture" (i.e., customer retention) rates, focusing more on FHA/VA loans.

We expect this trend to continue and GNs to be more sensitive to mortgage rate movements than conventionals, causing Ginnie prepays to increase more than conventionals especially for the recent 2013-2015 vintages.

Fig. 11: S-Curve Comparisons for 6-12 WALA Freddie, GN-FHA and GN-VA over the Years



Source: Freddie Mac, Ginnie Mae, Nomura Securities International
Note: Incentive calculated using PMMS rate

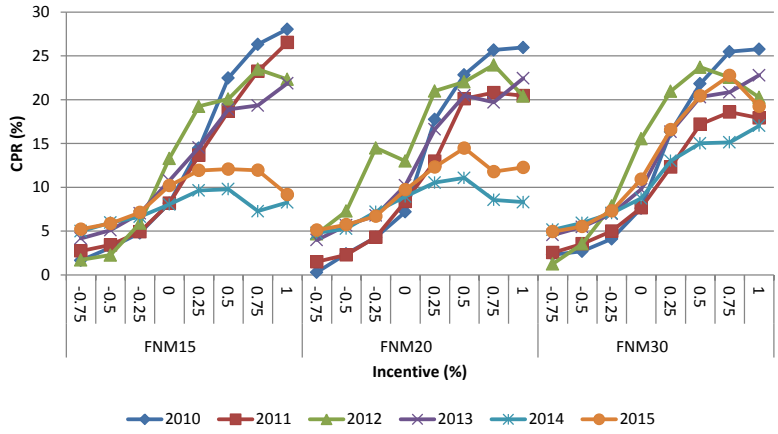
15-Year S-Curves Likely to Steepen and Become Comparable to 30-Year S-Curves

The S-curves for 15-year mortgage collateral (and 20-year collateral) have been noticeably flatter relative to S-curves for 30-year collateral (Figure 12). Based on our prior analysis, we believe that 15-year S-curve flattened more than the 30-year S-curve possibly because borrowers are less likely to refinance into another 15-year or lower-maturity mortgage for incremental incentive alone unless mortgage rates rallied to historic lows, a borrower behavior that was noticeable even pre-housing crisis.

Figure 10 shows S-curves on 12-24 WALA 15-year and 30-year collateral over the years. In 2002 and 2003, when 15-year mortgages rallied to historic lows, the S-curves for 15-year and 30-year were somewhat comparable. However, starting 2004, when 15-year mortgage rates bounced off the lows, we see that the S-curve for 15-year collateral flattened more than for the 30-year S-curve.

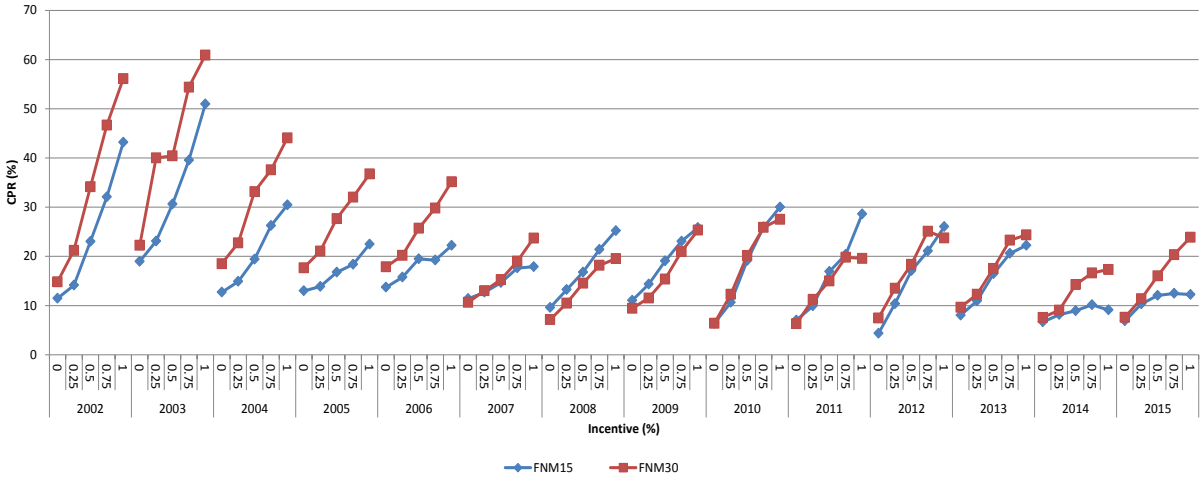
Based on this, we believe that 15-year S-curves are likely to steepen and become comparable to those of 30-year S-Curves when mortgage rates rally to historical low levels.

Fig. 12: S-Curve for (6-24) WALA 15-year, 20-year and 30-year FN MBS over the Years



Source: Fannie Mae, Nomura Securities International
Note: S-curve uses respective mortgage rates to compute incentive

Fig. 13: Comparison of S-Curves for 12-24 WALA 15-year and 30-year MBS over the Years



Source: Fannie Mae, Nomura Securities International

Specified Pool Positioning in Different Rate Scenarios

In this section, we discuss likely trends in investor demand for specified pools under two different scenarios, (a) if the 10-year stabilizes around current levels, the primary mortgage rate is likely to hold around 3.50-3.55% and (b) if mortgage rates rally to around 3.25-3.30% levels. We use the prepayment behavior observed for the different

specified pools in the rate rally and back-up scenarios from 2015 to highlight key factors that should impact the different spec pools under the two scenarios (Figures 14 and 15):

30yr Mortgage Rates rally to 3.25-3.30%:

- Based on the strong prepayment protection offered, investors should consider owning high quality specified pool stories such as the loan balance pools in this scenario. The S-curves for high quality loan balance from 2015 indicate that the 6-24 WALA collateral have fairly predictable S-curves during the rate rally as well as the back-up time periods, while S-curves for the other marginal protection stories become steeper when rates rally, and hence offer lesser protection than expected.
- Steepening in the S-curves is the most observable for the New York and Investor specified pools. S-curves for New York pools are elbow-shifted compared to the other stories due to the high mortgage recording tax (this tax varies between 75-225bp across counties). While New York pools offer meaningful prepayment protection relative to HLB when the rate incentives are between 25-75bp, prepays are comparable or faster than HLB when the incentive rises to over 100-125bp. Also, OTM prepays for NY are much lower than HLB, making them an unattractive discount story. Therefore, in the rally scenario, the in-the-moneyness of NY 4.0s is likely to decrease the protection offered by these pools. Similarly, investor S-curves are also significantly steeper once the borrowers have sufficient incentive to overcome the elbow shift resulting from higher LLPAs.
- Low FICO pools have fairly steep S-curves and appear to offer the least prepay protection, even in a rate back-up environment. Later this year, Fannie Mae intends to begin using the trended credit scores to underwriting borrowers, as we have highlighted in our prior publication[2]. While this change is not intended to significantly expand the credit box, it could still lead to a small increase in low FICO pool prepays. Additionally, a recent letter signed by MBA, NAR, and several other industry groups advocating for the reduction/removal of LLPAs poses new risks to an investor in the low FICO pools.

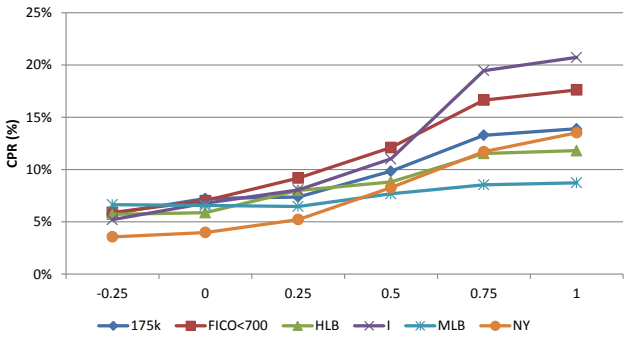
30yr Mortgage Rates Remain Around 3.50-3.55%:

- If mortgage rates remain at current levels or head higher, investors may prefer owning the marginal payup specified pool stories such as 175k/200k pools owing to their lower payup and attractive hedge adjusted carry compared with the high-quality loan balance stories.
- Tiering within the specified pool stories by collateral characteristics is likely to increase. Specified pool investors generally favor pools that are issued by large lenders, such as Wells Fargo, Bank of America or US Bank, owing to their larger pool sizes, better liquidity, and more predictable prepayment profile (especially when compared with some of the non-bank lenders). However, there are many other smaller servicers, such as US Bank, PNC, Franklin American etc,, with benign prepays but are trading at a discount compared to the more popular pools containing Wells originated loans. Investors can use our monthly Chartbook reports to track the relative performance of servicers across the different loan balance buckets.
- Among new prod pools, investors should prefer owning pools that contain a higher share of Purchase loans with LTV>80 and FICO<700. As we have highlighted in our prior article[3], loans with these characteristics have the flattest WALA ramps.

[2] Please refer Securitized Products weekly dated Jun 10 2016

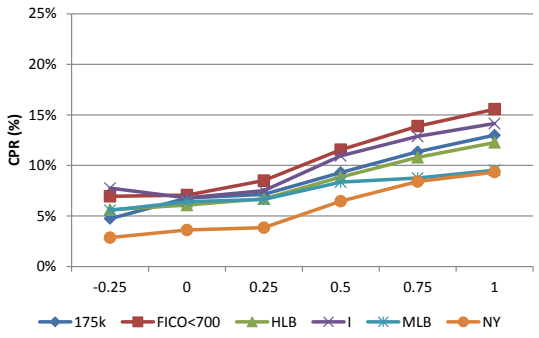
[3] Please refer the Securitized Products weekly dated Apr 15 2016

Fig. 14: S-Curves by Spec Pool Bucket in a Rate Rally Scenario (Mar-May 2015 Factors, 6-24 WALA)



Source: Add source here

Fig. 15: S-Curves by Spec Pool Bucket in a Rate Back-up Scenario (Jul-Dec 2015 Factors, 6-24 WALA)

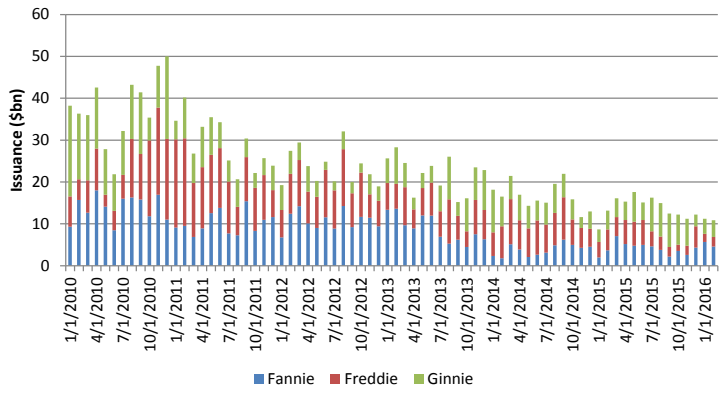


Source: Add source here

Expected Trends in the CMO Market in Different Rate Scenarios

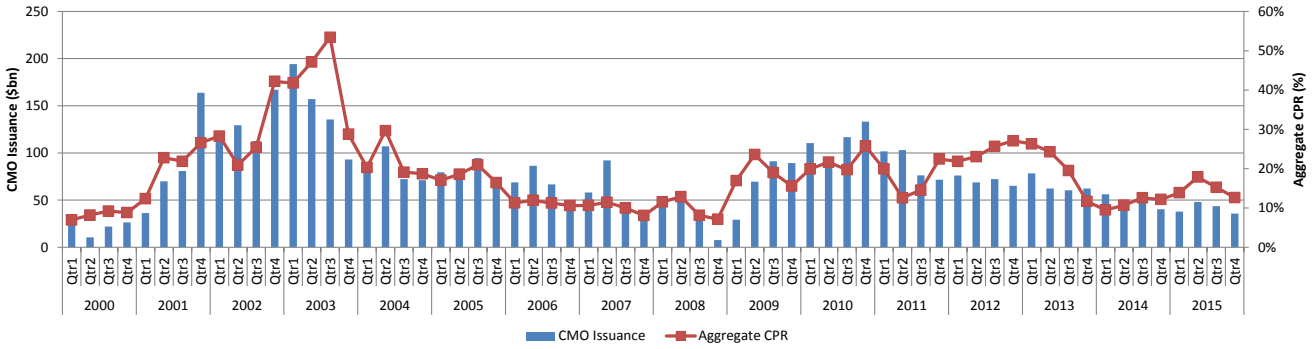
Monthly CMO issuance has been steadily declining since 2009 and has been running at close to its lowest levels since 2009, averaging about $10-12bn a month during 2016 Q1 (Figure 16). CMO issuance under the different rate scenarios considered above is likely to be driven by three main factors, (a) demand for securities from domestic banks, (b) reinvestment needs, and (c) availability of cheap collateral to structure CMO deals. Domestic banks and insurance companies have been the main sponsors of CMO activity and are likely to provide greater demand at higher yield levels. Historically, CMO issuance has been well correlated with prepayments and the associated need to reinvest paydowns. As shown in Figure 17 below, since 2000, quarterly CMO issuance has broadly tracked the aggregate prepays of the agency universe. For instance, CMO issuance increased meaningfully during 2002-03 as prepay speeds increased and then trailed off as the refi wave ended. Elevated CMO issuance during this period was also aided by the steep yield curve at that time. However, the relationship appears to have weakened recently (during the prepay increase observed in 2012-13 and in 2015). This could be a result of the changes in the collateral composition of the CMO universe over the past few years, resulting in a steady increase in the share of less negatively convex collateral such as loan balance, high LTV, or seasoned collateral. In such an environment, we summarize our expectations for CMO issuance and demand in two different interest rate scenarios:

Fig. 16: Monthly CMO Issuance by Agency



Source: Fannie Mae, Freddie Mac, Ginnie Mae, Intex, Nomura Securities International

Fig. 17: Quarterly CMO Issuance and Aggregate Prepays of the Agency Universe



Source: Fannie Mae, Freddie Mac, Ginnie Mae, Intex, Nomura Securities International

30yr Mortgage Rates Rally to 3.25-3.30%:

If mortgage rates rally to 3.25%, aggregate prepays are expected to witness a sharp increase as discussed above. However, going by the recent weak relationship between CMO issuance and aggregate paydowns, this alone may not be able to provide a significant boost to CMO issuance in the near term as demand from yield-based buyers is likely to be mute. Lack of demand from yield-based buyers is likely to depress CMO issuance in the near term. However, if the basis widens initially, it may provide an opportunity for dealers to source collateral at attractive levels, thereby resulting in some rebound in issuance volumes once the rates market stabilizes at the lower levels. In this rate scenario, investors should prefer owning PACs off prepay-protected collateral or locked-out LCF structures.

30yr Mortgage Rates Remain Around 3.50-3.55%:

If the 10-year treasury yield averages 1.50-1.80%, monthly CMO issuance is likely to average about $12-14bn a month during 2H 2016 (in line with recent averages), with occasional spikes driven by increased activity from the GSE portfolio or Re-REMIC issuance. Domestic banks and insurance companies are likely to be the main buyers, with greater demand likely at higher rate levels. Sequential structures are likely to dominate CMO issuance, with more deals being backed by less prepay protected or TBA-like collateral.

Servicing Update: Nationstar to subservice Seneca loans

Last week it was announced[4] that Seneca Mortgage Servicing will use Nationstar to subservice its existing mortgage portfolio and future MSR acquisitions. Nationstar will also acquire Seneca's existing personnel who handle its mortgage servicing portfolio. The mortgage portfolio of Seneca Mortgages has continued to increase recently, as Seneca has acquired servicing rights from different servicers, and across 30-year conventional mortgages it holds servicing rights on $33bn loans. As a result of this subservicing agreement, it is possible that the prepay behavior of Seneca's portfolio changes. We first compare collateral characteristics of Seneca's and Nationstar's 30-year loans and then review prepays adjusting for collateral characteristics.

Figure 18 shows the collateral characteristics of Seneca's and Nationstar's 30-year loans. Seneca loans have 13-73k higher ALS and 9-17 points higher FICO versus Nationstar loans across vintages. Figure 19 shows prepays on Nationstar and Seneca loans adjusting for collateral characteristics. Prepays on cuspy Seneca loans are noticeably higher than Nationstar (2015 4.0s), however, prepays on these cohorts converge once the loans becomes more seasoned (2014 4.0s).

Thus it is possible that prepays on Seneca serviced collateral becomes lower as a result of this subservicing agreement. However, as Nationstar is also acquiring Seneca's personnel, it is possible that prepay on these loans remain higher relative to Nationstar.

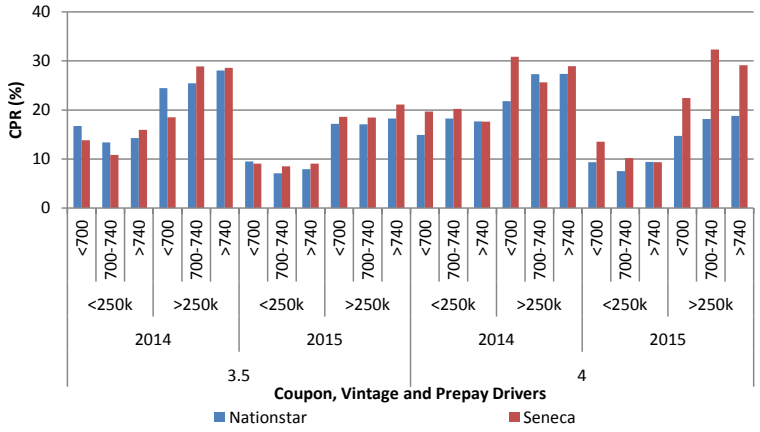
[4] http://www.businesswire.com/news/home/20160615005404/en/Seneca-Mortgage-Servicing-Awards-Nationstar-50-Billion

Fig. 18: Collateral Characteristics of Seneca and Nationstar Serviced Collateral, Conventional 30-Year

		Vintage	UPB ($bn)	WAC	WALA	ALS	LTV	FICO	Non Owner	Purch	TPO	LTV>80	Cash Window	CA
FN 30	Nationstar	2013	8	4.22	35	190	79	733	18%	29%	49%	43%	8%	29%
		2014	6	4.65	24	187	78	723	15%	40%	41%	38%	4%	24%
		2015	6	4.28	12	205	76	732	14%	38%	23%	31%	31%	30%
	Seneca	2013	8	3.98	37	217	76	750	17%	41%	41%	30%	75%	36%
		2014	5	4.52	23	217	79	738	14%	64%	38%	36%	79%	35%
		2015	6	4.13	12	278	78	745	10%	59%	64%	35%	92%	30%
GD 30	Nationstar	2013	9	4.04	36	210	77	745	14%	28%	29%	38%	45%	29%
		2014	6	4.49	23	206	78	738	13%	51%	32%	36%	58%	19%
		2015	5	4.22	12	214	75	736	13%	32%	27%	27%	39%	24%
	Seneca	2013	2	3.97	36	223	75	754	13%	31%	51%	29%	44%	30%
		2014	2	4.44	23	234	77	746	9%	58%	54%	33%	74%	35%
		2015	5	4.05	12	282	75	752	9%	52%	83%	27%	92%	37%

Source: Fannie Mae, Freddie Mac, Nomura Securities International

Fig. 19: Prepays on 2014-15 Conventional 30-Year Loans, Last 3 months



Source: Fannie Mae, Freddie Mac, Nomura Securities International

MBA Weekly Application Indices

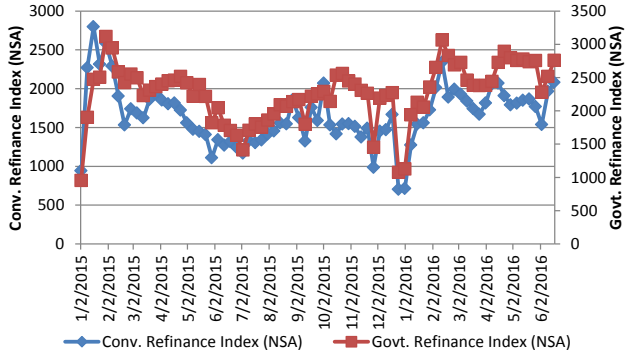
This week, the MBA conventional seasonally adjusted (SA) and non-seasonally adjusted (NSA) indices increased by 5.8% to 2081 (Figure 20). The driving mortgage rate tracked by MBA decreased by 3bps w-o-w to 3.76. The average loan size of conventional refinance applications was 14K higher week over week at 292K.

The MBA government SA and NSA refinance indices increased by 9.6% w-o-w to 2758 (Figure 20). The average loan size of government refinance applications increased 1k w-o-w at 214K (Figure 21). A further breakdown of the government refinance index shows that the MBA VA SA and NSA refinance indices increased 8% w-o-w to 185, while the MBS FHA SA and NSA refinance indices increased by 12% week over week to 242. The average loan size of VA refinance applications increased 3K week over week to 235k, and average loan size of FHA refinance applications was unchanged at 193K (Figure 22).

The MBA conventional seasonally adjusted (SA) purchase index declined 2% week over week to 291, while the non-seasonally adjusted (NSA) purchase index decreased 3% week over week to 321 (Figure 24). The MBA government seasonally adjusted (SA) purchase index declined 3% week over week to 151, while the non-seasonally adjusted (NSA) purchase index increased 5% week over week to 167 (Figure 24).

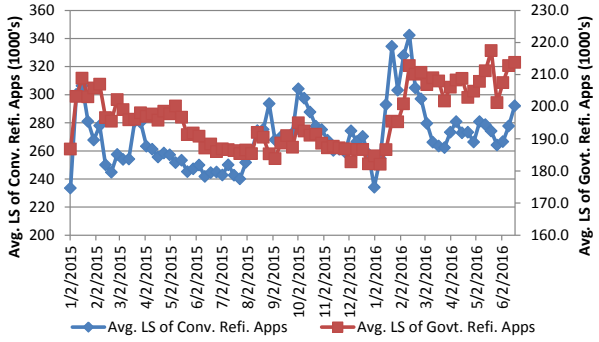
The government purchase index is almost unchanged year over year, while the conventional purchase index is still around 17% higher year over year (Figure 25 and 26).

Fig. 20: MBA Conv. and Govt. Refinance Indices



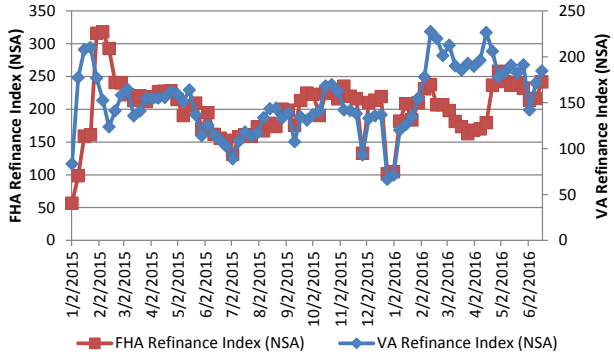
Source: MBA, Nomura Securities International

Fig. 21: Avg. LS of Conv. and Govt. Refinance Applications



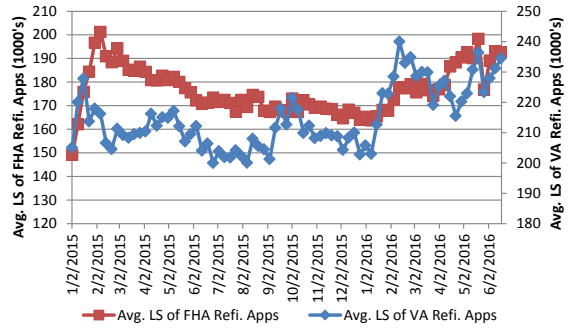
Source: MBA, Nomura Securities International

Fig. 22: MBA FHA and VA Refinance Indices



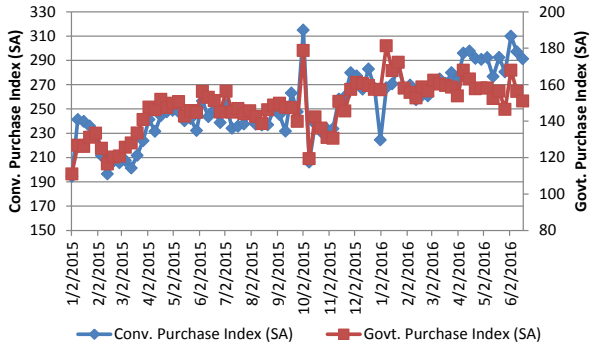
Source: MBA, Nomura Securities International

Fig. 23: Avg. LS of FHA and VA Refinance Applications



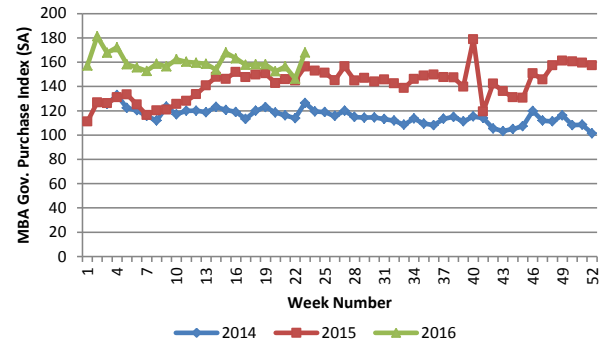
Source: MBA, Nomura Securities International

Fig. 24: MBA Conv. and Govt. Purchase Indices



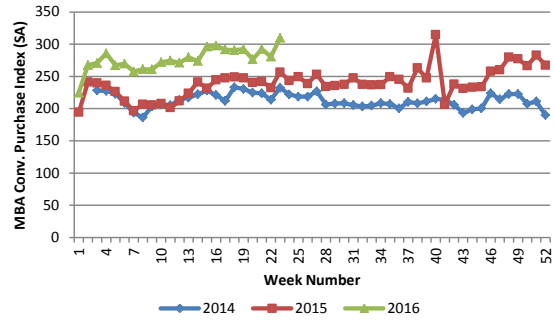
Source: MBA, Nomura Securities International

Fig. 25: Weekly Year-over-Year Change in Government Purchase Index



Source: MBA, Nomura Securities International

Fig. 26: Weekly Year-over-Year Change in Conventional Purchase Index

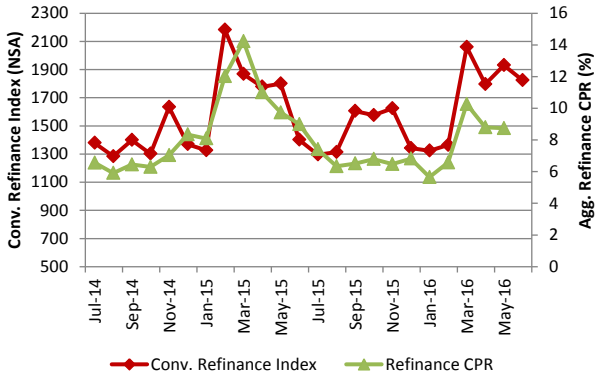


Source: MBA, Nomura Securities International

Short-Term Projections

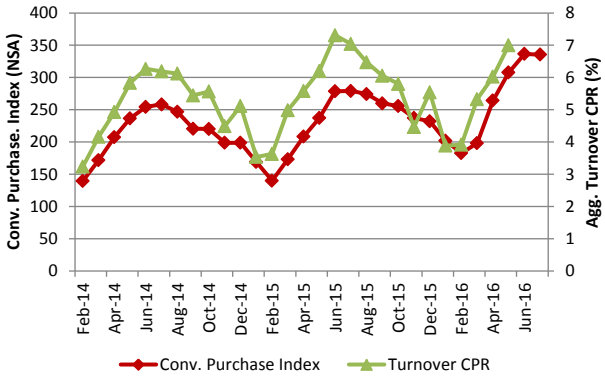
Aggregate conventional refinance prepays have been tracking lower than what forward indicators, such as the refinance index, would imply. However, turnover prepays have been mostly in line with trends implied by the purchase index. We expect these trends to continue as long as mortgage rates continue to vacillate around current levels. Consequently, we expect aggregate conventional prepays to increase by 11% because of driving mortgage rates being 3bp lower than last month, daycount being 5% higher month over month, and continued increases in turnover. Note, turnover prepays typically peak around June-July. Our cohort-level projections are shown in Figures 29-31.

Fig. 27: MBA Conv. Refinance Index (1-month lagged) vs. Agg. Refinance CPR



Source: MBA, Fannie Mae, Nomura Securities International

Fig. 28: MBA Conv. Purchase Index (2-month lagged) vs. Agg. Turnover CPR



Source: MBA, Fannie Mae, Nomura Securities International

Fig. 29: Prepay Projections for 30-Year Fannie Mae MBS

									1-Mo Actual		1-Mo Projection		
Coupon	Vintage	Bal ($mm)	WAC	WAM	WALA	WACLS	FICO	LTV	Apr	May	Jun	July	Aug
3.0	2015	60,306	3.78	344	13	278,092	766	74	9.6	10.1	12.5	12.0	12.5
3.0	2013	160,400	3.58	315	38	242,516	763	72	9.2	10.7	12.5	11.5	13.0
3.0	2012	117,826	3.59	308	44	247,934	769	71	9.4	10.9	12.5	11.5	13.0
3.5	2015	193,850	4.11	346	11	259,000	750	78	12.8	13.7	16.0	15.5	17.0
3.5	2014	64,179	4.24	335	21	247,063	759	78	19.6	20.4	23.0	21.0	23.5
3.5	2013	83,870	4.02	317	36	215,753	744	77	13.7	14.9	17.0	16.0	18.0
3.5	2012	140,458	4.00	303	48	221,309	759	74	13.4	15.1	17.0	16.0	18.0
3.5	2011	24,645	4.02	294	56	223,960	771	70	13.3	15.6	17.5	16.5	18.5
3.5	2010	9,287	4.11	281	67	208,652	773	69	14.7	17.4	20.0	18.5	21.0
4.0	2015	57,754	4.58	347	11	217,685	715	80	14.2	15.2	17.0	16.5	18.0
4.0	2014	102,386	4.59	332	23	221,440	737	80	22.0	22.9	25.0	22.5	25.0
4.0	2013	61,574	4.58	321	33	206,507	741	80	21.6	21.7	24.5	22.0	25.0
4.0	2012	41,469	4.47	301	49	181,968	737	79	15.3	16.5	18.5	17.0	19.0
4.0	2011	48,710	4.47	292	59	202,664	759	73	17.3	18.0	20.0	18.0	20.5
4.0	2010	40,935	4.49	282	68	201,656	764	71	17.7	19.3	21.5	19.5	22.0
4.0	2009	23,760	4.55	264	84	185,366	765	66	19.8	21.7	23.5	22.0	24.0
4.5	2014	18,794	5.02	331	25	174,764	704	81	19.6	21.2	22.5	20.5	22.5
4.5	2013	12,432	5.04	322	32	171,438	718	81	20.1	20.3	21.5	19.5	21.5
4.5	2011	37,509	4.93	290	60	182,648	747	76	18.1	19.4	20.5	18.5	20.5
4.5	2010	35,004	4.94	278	72	191,402	752	74	19.3	20.7	21.5	19.5	21.5
4.5	2009	46,311	4.93	266	83	182,059	756	71	21.0	22.5	23.5	21.5	23.5
5.0	2011	11,172	5.38	290	61	172,210	727	81	17.1	20.3	21.0	19.0	21.0
5.0	2010	18,589	5.37	278	73	182,544	731	79	20.1	21.6	22.5	20.5	22.5
5.0	2009	13,977	5.42	268	82	168,389	738	75	20.7	21.2	22.5	20.5	22.5
5.0	2005	9,635	5.64	218	131	138,425	721	71	20.6	21.4	22.5	20.5	22.5
5.0	2004	5,997	5.55	203	144	124,400	720	71	17.5	18.7	19.5	17.5	19.5
5.0	2003	14,203	5.50	192	154	109,045	720	70	17.1	18.3	19.0	17.0	19.0
5.5	2008	7,645	6.03	253	97	156,226	726	74	22.0	23.6	24.5	22.0	24.5
5.5	2007	7,159	6.13	242	108	155,600	717	72	22.9	22.7	23.5	21.5	23.5
5.5	2005	9,847	5.98	218	131	123,650	710	73	18.6	18.7	19.5	17.5	19.5
5.5	2004	8,573	5.94	205	143	115,381	709	73	17.7	18.7	19.5	17.5	19.5
5.5	2003	14,852	5.94	190	156	100,981	713	72	16.5	17.2	18.0	16.5	18.0
6.0	2007	9,607	6.57	244	107	140,971	705	76	22.6	22.3	23.5	21.5	23.5
6.0	2006	7,842	6.56	230	120	132,320	706	74	21.6	21.1	22.0	20.0	22.0
							Mortgage Rate		3.69	3.64	3.61	3.63	3.66

Source: Fannie Mae, Nomura Securities International

Fig. 30: Prepay Projections for 15-Year Fannie Mae MBS

									1-Mo Actual		1-Mo Projection		
Coupon	Vintage	Bal ($mm)	WAC	WAM	WALA	WACLS	FICO	LTV	Apr	May	Jun	July	Aug
2.5	2015	26,640	3.05	166	12	229,100	765	65	10.1	11.8	13.5	13.0	14.0
2.5	2014	5,273	3.15	156	21	212,646	765	67	12.2	14.8	17.5	16.5	18.5
2.5	2013	47,978	2.94	137	38	172,473	762	64	9.1	10.4	12.0	11.0	12.5
2.5	2012	50,638	3.00	129	45	175,490	770	64	9.9	11.2	13.0	12.0	13.5
3.0	2015	30,519	3.48	167	11	192,196	748	66	9.9	11.6	13.5	12.5	14.0
3.0	2014	26,063	3.53	153	23	177,974	751	68	13.0	13.6	16.0	15.0	16.5
3.0	2013	20,031	3.51	141	34	152,653	751	67	12.5	13.2	15.0	14.0	15.5
3.0	2012	28,268	3.45	125	49	145,527	762	65	11.9	13.1	14.5	13.5	15.0
3.0	2011	17,493	3.45	118	56	147,488	770	63	12.2	12.8	14.5	13.5	15.0
3.5	2015	4,373	4.04	165	11	121,682	724	66	8.1	9.7	11.5	10.5	12.0
3.5	2014	9,627	4.05	151	24	133,249	729	69	13.2	13.9	15.8	14.5	16.5
3.5	2013	6,501	4.02	143	32	131,460	738	69	12.7	13.4	15.0	14.0	16.0
3.5	2012	4,392	3.97	123	50	106,344	749	67	13.4	14.1	15.0	14.0	16.0
3.5	2011	15,763	3.91	113	60	126,135	762	63	13.9	14.4	15.5	14.5	16.5
3.5	2010	11,663	3.92	105	68	119,167	769	62	14.7	15.3	16.5	15.5	17.5
4.0	2011	7,000	4.38	111	61	106,884	753	64	15.7	15.9	17.0	16.0	18.0
4.0	2010	8,490	4.42	101	72	100,984	758	62	15.8	17.0	18.0	17.0	19.0
4.0	2009	6,298	4.48	90	83	91,064	761	60	15.8	16.6	17.5	16.5	18.5
4.5	2010	2,061	4.85	100	73	87,541	742	65	14.8	17.5	18.5	17.5	19.5
4.5	2009	3,014	4.89	91	82	82,260	746	62	16.5	17.2	18.0	17.0	19.0
4.5	2003	2,838	4.96	24	154	22,296	734	59	21.6	22.5	23.5	22.5	24.5
							Mortgage Rate		2.94	2.92	2.85	2.88	2.92

Source: Fannie Mae, Nomura Securities International

Fig. 31: Prepay Projections for 30-Year GN II MBS

									1-Mo Actual		1-Mo Projection		
Coupon	Vintage	Bal ($mm)	WAC	WAM	WALA	AOLS	AOCS	OLTV	Apr	May	Jun	July	Aug
3.0	2015	78,380	3.46	345	12	226,169	714	95	10.7	12.5	14.5	13.5	15.5
3.0	2014	9,760	3.49	335	22	206,346	699	95	15.7	16.0	18.0	17.0	19.5
3.0	2013	84,334	3.33	318	38	199,702	717	95	14.5	15.7	17.5	16.0	18.0
3.0	2012	55,978	3.37	312	44	200,616	720	95	14.8	16.4	18.5	16.5	19.0
3.5	2015	179,344	3.88	347	11	210,252	692	94	18.7	20.8	24.0	22.0	25.0
3.5	2014	70,287	3.90	335	22	193,909	705	96	23.7	24.3	27.0	24.0	27.0
3.5	2013	54,893	3.85	319	35	177,085	694	94	18.9	20.2	23.0	21.0	24.0
3.5	2012	83,606	3.81	307	48	192,024	712	94	18.6	20.4	23.0	21.0	24.0
3.5	2011	13,613	3.88	299	55	183,277	717	96	19.1	21.0	23.5	21.5	24.5
4.0	2015	47,418	4.37	348	10	195,909	665	94	25.6	28.1	30.0	28.0	31.0
4.0	2014	63,903	4.34	333	23	164,340	674	95	25.8	26.0	28.0	26.5	29.0
4.0	2013	27,281	4.36	324	32	162,789	693	95	24.4	25.7	27.0	25.5	28.0
4.0	2012	11,969	4.31	305	50	163,400	677	94	20.7	21.1	22.0	21.0	23.0
4.0	2011	28,609	4.35	295	59	165,122	704	95	20.0	22.3	23.0	22.0	24.0
4.0	2010	12,588	4.38	286	68	184,898	715	95	20.6	21.9	23.0	22.0	24.0
4.5	2014	9,762	4.84	332	24	153,875	646	94	30.9	34.6	36.0	34.5	38.0
4.5	2013	13,259	4.82	322	32	143,933	665	94	24.7	26.5	28.0	27.0	29.0
4.5	2011	22,178	4.81	293	61	152,166	692	95	22.4	24.4	25.5	25.0	26.5
4.5	2010	24,564	4.87	282	72	169,951	703	94	22.9	23.9	25.0	24.0	26.0
4.5	Jun-Dec 2009	10,599	4.90	271	82	167,168	695	94	22.2	25.2	26.0	25.0	27.0
5.0	2010	17,598	5.30	279	74	146,679	682	94	23.4	25.1	26.0	25.0	27.0
5.0	Jun-Dec 2009	10,874	5.36	273	80	146,945	679	94	24.1	26.2	27.0	26.0	28.0
							Mortgage Rate		3.69	3.64	3.61	3.63	3.66

Source: Ginnie Mae, Nomura Securities International

VA Seasoning Ramp Indicates Potentially Increasing Liability for Some Lenders

The WALA ramps, especially prepays between 0-12 WALA, of VA loans are markedly different from both FHA and conventional loans.[5] In Figure 1, we compare the WALA ramps of cuspy coupon conventionals, FHA, and VA loans during three periods: peak prepays seen in 2015 (i.e., prepays in March 2015), the first time driving mortgage rates rallied comparable to the lows seen in 2015 (i.e., prepays in March 2016), and the most recent prepays (i.e., prepays in May 2016). The most important takeaways from these seasoning ramps are as follows:

- The WALA ramps for VA loans in 2016 were the steepest, while in 2015 the FHA WALA ramps were the steepest. FHA WALA ramps were the steepest in 2015 because the FHA reduced the annual insurance premiums by 50bp. With the effect of the MIP reduction waning in 2016, the WALA ramps for FHA flattened but were still steeper than conventional loans.
- Also evident is that the WALA ramps for conventionals and FHA increased gradually over the first five months and peaked around 6 WALA. However, VA WALA ramps increased sharply as early as 1 WALA.

Research analysts

US Securitized Products

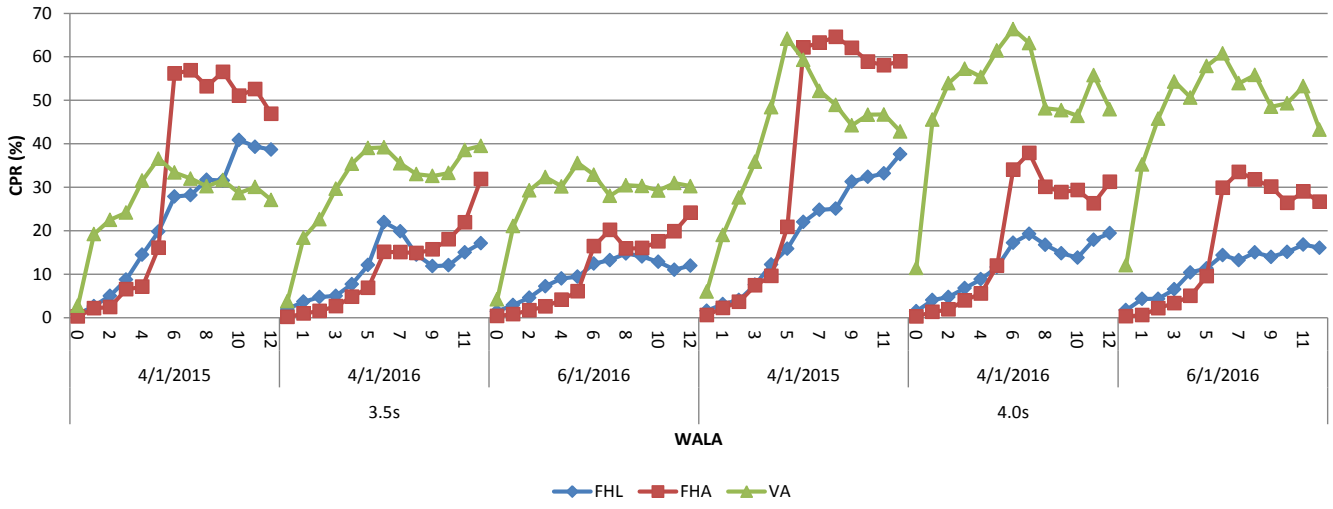
Dhivya Krishna - NSI
dhivya.krishna@nomura.com
+1 212 667 2183

Arun Manohar - NSI
arun.manohar@nomura.com
+1 212 667 9360

Rohit Sinha - NSI
Rohit.Sinha@nomura.com
+1 212 298 4905

Paul Nikodem - NSI
paul.nikodem@nomura.com
+1 212 667 2130

Fig. 1: Comparison of WALA Ramps for FHL, FHA, and VA Loans over Time



Source: Fannie Mae, Ginnie Mae, Nomura Securities International

To better understand the differences in the conventional, FHA, and VA (0-12) WALA ramps, we need to first understand some of the important factors shaping the initial part of the WALA ramp listed below:

- **Early Payoff Penalties:** Anecdotal evidence suggests that typically loan officers incur early payoff penalties for loans that pay off within six months of origination. This would reduce the overall compensation that the loan officer receives for the loan. Consequently, loan officers would not be incentivized to refinance a loan in the first six months. However, the borrower still has the option of refinancing with another lender who would be indifferent to the penalty. It is also possible that lenders who have a servicing/origination model focused on high recapture rates (e.g., Freedom) are not likely to impose similar penalties.
- **Refinance Program Guidelines:** FHA borrowers have three refinance options: non-streamline, streamline, and cash-out refinancings. While the streamline and cash-out refinancings require that the borrower is at least 6-mo seasoned, the non-streamline refinance option does not have a similar seasoning requirement. In addition, the FHA streamline refinance program requires the borrower to have minimum payment savings of around 5%. Given that the most common refinance options for FHA

[5] This article is a reprint from the "Agency MBS Special Topics" dated June 22, 2016.

borrowers—streamline and cash-out refinance—require six months of seasoning, we see that FHA prepays are lower for the first five months and then peak around the sixth because of the pent-up refinancing demand.

The VA has the same three refinance options; however, none of these refinance programs requires the loan to be more than six months seasoned. However, the VA streamline refinance (a.k.a. IRRRL) program does require that the borrowers have a lower mortgage rate on the refinance loan. Given that none of the VA refinance programs has any seasoning requirements, we see that VA prepays increase sharply within the first six months and sometimes as early as one month after loan origination. Although the VA streamline program does not explicitly require a six-month seasoning requirement, we think that lenders would prefer to meet the requirement, so as to minimize their future liability.

VA Ability to Repay (ATR) and QM Requirements

Both FHA and VA independently provided ATR and QM guidelines in response to the 2010 Dodd Frank Act. On May 9, 2014, the interim final rule was published in the federal register in which VA provided guidelines on its ATR standards and its QM definition. The interim final rule was effective on the day of publication.

According to the published rule, VA defines QM to mean any loan that is guaranteed, insured or made by VA with some limitations that apply to its streamline refinance (i.e., IRRRL) loans. Note, the interim final rule did not make changes to the underwriting of VA streamline refinance but stipulated additional requirements that would have to be met to be considered Safe Harbor QM. For an IRRRL loan to be considered a Safe Harbor QM, it has to meet the following requirements:

- The loan being refinanced is at least 6-mo seasoned
- The VA borrower has not been more than 30 days past due in the six months preceding the new loan closing
- The recoupment period for all allowable fees and charges financed as part of the loan or paid at the time of closing does not exceed 36 months
- All other VA requirements for guarantying the IRRRL are met

If the IRRRL does not meet the above requirements, the IRRRL would be considered Rebuttable Presumption QM instead of Safe Harbor QM. Based on our limited understanding of the difference in the two QM statuses, it appears the liability for a loan considered to be Safe Harbor QM is far reduced when compared with the Rebuttable Presumption QM[6]. Consequently, we would believe that it would be prudent lender practice to observe the above-mentioned requirements. However, based on the observed WALA ramps, we believe that a good number of VA lenders are not ensuring their IRRRL loans are meeting the seasoning requirements, thereby increasing their liability.

[6] The penalty for a successful borrower challenge would be three years of finance charges plus fees and damages; however, even if a borrower unsuccessfully raises a challenge (even for a safe harbor loan), the lender would face legal costs in establishing a defense.

Ginnie Mae May Have a Vested Interest in Monitoring Lender Liability

Although some lenders may be comfortable taking on the additional liability in an environment where home prices continue to appreciate, Ginnie Mae may be incentivized to monitor the additional liability these lenders may be taking on because a good number of their VA IRRRL loans are not considered Safe Harbor QM.

Note that the VA still guarantees the loan if the IRRRL does not meet the recoupment period of less than 36 months, or does not meet the 6-month seasoning requirements. Given that the VA typically guarantees around 25% of the loan amount, the lender is liable for potential losses in excess of that. Given that Ginnie Mae insures investors against lender defaults, one can argue that Ginnie Mae would be incentivized to make sure lenders minimize their liability by ensuring most if not all their loans are considered Safe Harbor QM.

Conclusion

Based on the VA WALA ramps observed recently, we conclude that some lenders are not following the six-month seasoning requirement for a VA IRRRL loan to be considered Safe Harbor QM, thereby increasing their future liability. Given that Ginnie Mae insures investors against lender default, we would expect Ginnie Mae to have a vested interest in enforcing the IRRRL requirements so that the IRRRL is considered Safe Harbor QM.

Mortgage Credit

Market Overview

RMBS trading volumes were very quiet before the UK referendum this week. After the Brexit news, LCF CRT spreads widened by as much as 15bps before settling in at 5-10bps wider at the time of this publication. CRT trading volumes were noticeably higher on Friday after a quiet week. With the widening in high yield this morning, we expect legacy RMBS spreads to be slightly wider in the near term, although it is not obvious that there will be significant supply at wider spreads.

We see any Brexit-related weakness as a potential buying opportunity for RMBS, although we expect supply to remain limited (except for a temporary pickup in supply after the Countrywide payment next week).

Our economists have revised their Fed funds projections, calling for the next rate hike to be pushed back to December (from September). The accommodative Fed should be supportive of risk markets and should benefit ARM borrowers facing potential rate resets.

We expect US housing to remain resilient, as housing supply remains extremely limited and mortgage rates near all-time lows should help affordability.[7] It's possible that there are some negative knock-on effects to consumer confidence due to weaker consumer spending or a continued slowdown in the labor market, but we expect these effects to be marginal.

Next Monday's $7.9bn Countrywide payment should continue to be a positive for the market. Given the increased market volatility post Brexit, it is possible that there is slightly increased supply of Countrywide bonds after the settlement payout occurs from overseas investors, as well as some hedge funds facing potential redemptions, but we expect this supply to be easily digested by the market.

Triaxx EOD Notice regarding Ocwen

According to a notice from Deutsche Bank as trustee for 19 RALI deals, the Triaxx entities have alleged that Ocwen breached the terms of the governing agreements as the servicer or master servicer. The trustee has hired legal counsel to review the allegations and Ocwen's responses and has not yet made a determination whether an Event of Default has occurred.

The allegations made by Triaxx include the following:

- **Failure to notify parties of R&W breaches:** According to Triaxx, Ocwen as the servicer should have notified parties about any representation and warranty breach it may have likely discovered during the course of any loss mitigation. According to the notice, at least 23% of the loans in those deals have breached one or more representations and warranties made by the sponsor.
- **Improper servicing practices:** According to the Triaxx notice, Ocwen's servicing practices were not in compliance with the PSA terms. The deficiencies include long liquidation timelines, high loss severities, and improper foreclosure practices.
- **Regulatory fines:** Regulatory actions and fines by various agencies, including the NY DFS, California BDO, and the SEC, indicate Ocwen was breaching several servicing norms, which would breach the terms of the PSA.

Ocwen's response

According to Ocwen, claims regarding failure to notify parties about breaches of representations and warranties were released when it acquired the servicing rights in November 2012. Additionally, Triaxx failed to establish whether Ocwen discovered those breaches and whether they had a material and adverse effect to the trust.

Ocwen also stated that the Triaxx entities did not provide any evidence regarding improper loss mitigation and foreclosure practices, as alleged in their notice. Additionally, some of Triaxx's allegations are similar to the ones included in the G&B notices, and, according to Ocwen the Duff and Phelps report concluded that they could not find any evidence to support those allegations based on a review of a sample loans.

[7] Please see our previous publication for more details.

Research analysts

US Securitized Products

Paul Nikodem - NSI
paul.nikodem@nomura.com
+1 212 667 2130

Pratik K. Gupta - NSI
Pratik.Gupta@nomura.com
+1 212 667 1403

Shawn Lim - NSI
shawn.lim@nomura.com
+1 212 298 4469

Mortgage litigation

Ruling on sponsor's repurchase analysis: This week, the Supreme Court of NY, Appellate Court (First Division), affirmed the lower court's ruling on production of repurchase analysis done by the responsible entity/sponsor. The NY Supreme court had earlier ruled in a R&W case against WMC that the originator's repurchase analysis was not protected, as it was not prepared 'in anticipation of litigation' but as part of normal business practice. Additionally, the Court of Appeals ruling on Statute of Limitations in the ACE 2006-SL2 case does not result in such analysis being time barred in the current case.

We expect this ruling, along with the prior ruling on attorney costs, to be positive for bondholders in other pending trustee-led R&W cases and to increase the bar for a settlement.

ResCap settlements: This week, the ResCap Liquidation Trust announced that it had settled its R&W/indemnification lawsuits against various correspondent lenders, including DB Structured Products, Fremont Bank, and Mortgage Network. We estimate that the settlements would resolve indemnification and R&W claims on mortgages with at least $2.7bn of original balance.

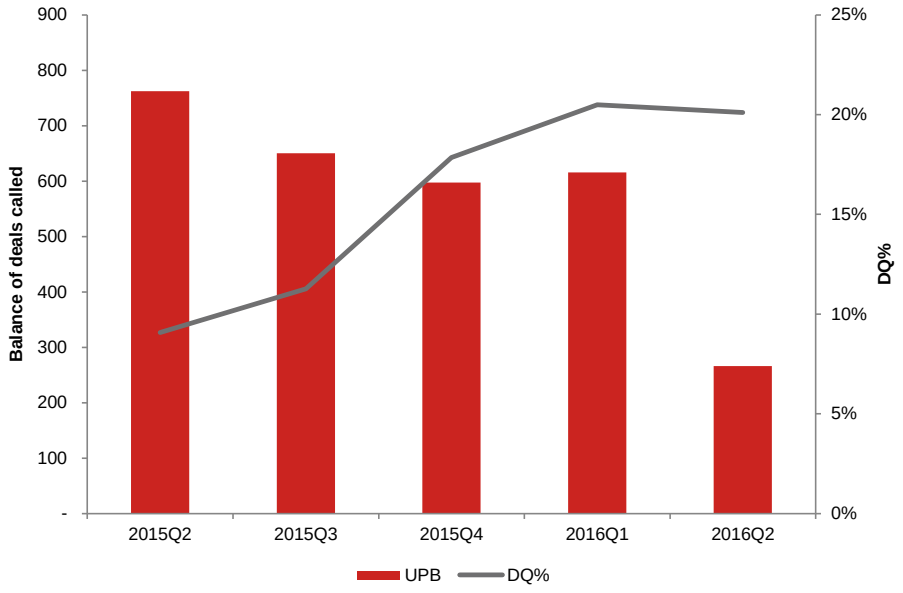
The Liquidation trust has made $22.3/unit payments so far, and the recently announced settlement will likely result in additional distribution to unit holders, including RMBS trusts.

Update on Called Deals

The pace of deal redemptions has slowed down slightly, with $900mn of deals called in 2016 (through May remits) compared with $1.4bn over the same period last year. Figure 1 shows the balance of deals called over time and the average delinquent share of pools at the time of call. The delinquent share has increased over time, as a number of Alt-A and subprime deals were called.

Additionally, the number of deals called from 2004 and later vintages has increased. For instance, we estimate that 30% of the deals called over the past year have been in 2004-2006 vintage deals.

Fig. 1: Balance of legacy RMBS deals redeemed over time and average DQ share of pools



Source: Intex, Nomura

Past deal redemption activity

Figure 2 shows the collateral characteristics of deals that have been called since 2015 by shelf. The top shelves that have seen increased deal redemptions this year include ResCap, Countrywide, and Wells Fargo. Most of the performing collateral in deals called off the ResCap, and Countrywide shelves has been subsequently re-securitized.

Redemption of deals with Ocwen as the Master Servicer increased following the transfer of Ocwen's call rights and a resolution by the bankruptcy court clearing the path for redeeming ResCap deals (that have a low share of RESCU units).

Additionally, a number of Countrywide deals were previously redeemed, including at least two 2004 vintage deals that were not included in the broad $8.5bn settlement. We estimate that 71% of eligible seasoned (non-settlement) Countrywide bonds have been called over the past two years.

Of the eight deals called off the WFMBS shelf, seven were in the 2005-07 vintage. Most of these deals were backed by either 15yr collateral or 30-yr fixed relo-mortgages.

Fig. 2: Collateral characteristics of deals called since 2015 by shelf

Shelf	# of deals called	Balance ($mn)	WAC	DQ %	Updated LTV
CWALT	11	321	5.7	13%	42
CWHL	15	306	5.7	9%	38
GMACM	4	121	5.5	12%	47
HFCHC	3	1,285	8.5		
OOMLT	4	42	6.3	19%	51
RALI	22	446	6.3	13%	45
RAMP	3	49	6.8	14%	75
RAST	3	29	5.9	13%	38
RFMSI	7	185	5.5	8%	40
SASC	3	89	5.6	42%	
WFMBS	8	368	5.7	6%	58
Others	23	687	5.1	22%	68

Source: Intex, Loan Performance, Nomura

Various factors affecting deal redemptions

We discuss the various scenarios affecting future deal redemptions:

Deals included in Trustee litigation

A significant number of 2004-07 vintage deals are included in investor-led litigation against trustees pertaining to breaches of the PSA or the Trust Indenture Act. The allegations include failure to provide timely notice on breached loans and improper overview of servicing practices. For such deals, various trustees have notified bondholders previously that they would use trust funds to defend themselves in these various lawsuits.

If deals included in trustee litigation are redeemed, it is possible that the trustee and/or the master servicer may reserve a certain portion of the redemption proceeds as litigation-related reserves leading to some losses for bondholders. Those funds would be expected to be paid back following any potential resolution of the lawsuits, which may take a significant amount of time.

For instance, Wells Fargo as the trustee and master servicer for WFMBS 2007-5 held $3mn of reserves when the deal was redeemed in September last year. As a result, all senior outstanding tranches had partial writedowns and the subordinate bond was completely written off (as opposed to being paid in full).

We thus remain cautious about potential redemptions for deals that are included in any litigation against trustees.

Figure 3 shows the number of deals that are the subject of the Institutional Investor lawsuits filed against trustees in 2014. We estimate that around 75% of the deals that are not included in any bulk G&B settlement are included in the trustee lawsuits.

Fig. 3: Estimated number of deals included in the Institutional Investors lawsuits against trustees

	US Bank	Deutsche Bank	Wells Fargo	HSBC	Bank of New York	Citi	Total
Deals in trustee lawsuit	841	544	276	257	247	48	**2,213**
All outstanding 04-08 vintage deals	1,411	927	439	381	1,024	121	**4,303**
All deals excluding G&B/other settlements (JP, Citi, CW, ResCap) & DBNT vs. FDIC suit	1,027	722	397	351	399	84	**2,980**

Source: Court Documents, Nomura

Potential callability of Countrywide deals: As we highlighted earlier, we expect an increase in deal redemptions for Countrywide deals that are receiving the settlement payout this month. Some of the factors that favor such a scenario are as follows:

- The Countrywide deals are not the subject of trustee-led litigation; as a result, we do not expect a similar issue of the trustee reserving proceeds from a redemption.
- Bank of America could be incentivized to redeem certain deals following the payout to reduce its financial burden from the required subservicing protocol included in the settlement agreement.

Figure 4 shows the estimated count and collateral characteristics of potential call candidates and past-called deals by shelf.

Fig. 4: Collateral characteristics of potentially callable and past-called deals by shelf (Countrywide)

Shelf	Type	# of deals under call threshold	% of deals under call threshold called	Alw Curr %	DQ %	WAC	Updated LTV
CWHL	Included in G&B settlement	22		66%	12%	5.3	52
	Seasoned deals not included in G&B settlement	52	71%	73%	10%	5.7	40
CWL	Included in G&B settlement	2		32%	22%	5.8	60
	Seasoned deals not included in G&B settlement	7	14%	31%	20%	6.2	55
CWALT	Included in G&B settlement	15		63%	12%	5.7	48
	Seasoned deals not included in G&B settlement	36	44%	66%	11%	6.0	45

Callable deals: Only includes deals where current factor is near/below the call-threshold factor and share of second liens <5% and share of fixed-rate loans >75%

Source: Loan Performance, Intex, Nomura

Potential deal redemptions where estimated collateral value < 100:

We estimate that at least 26 deals that were redeemed since 2015 had a 15% or higher share of delinquent loans prior to the call date. For some of the deals (particularly 2005 and later vintage), it is possible that the estimated collateral price was less than 100.

However, in a scenario where the estimated collateral price is higher than the value of the underlying bonds in aggregate, the holder of the call rights may be able to maximize the economic value by acquiring the bonds, particularly the mezz/subordinate ones, at a discount in the secondary market.

We think such a scenario is possible for deals where the difference in collateral vs. bond valuation is high and the number of bonds outstanding is limited.

CLO

Market Overview

Trading volumes in the CLO market were light ahead of the UK referendum, and CLO spreads widened after the referendum vote as broader markets came under pressure. CLO BBs were approximately 2 points lower and BBBs were 1-1.5 points lower on Friday.

In the leveraged loan market, on Friday morning higher quality loans were trading 0.25-0.5 points lower and distressed names were trading 1-2 points lower. We remain constructive on loans overall: in addition to a very limited forward calendar, we expect increased inflows into US credit given broader macro weakness overseas. Additionally, our economists have revised their fed funds projections, calling for the next rate hike to be pushed back to December (from September earlier).

The accommodative Fed should be supportive of risk markets and should extend the benefit of Libor floors for equity tranches. Figure 2 shows the 3m Libor forward curve at different periods of time. As of today, the 3m Libor curve is projected to reach 1% in August 2018 versus Jan 2018 based on May 31 data.

It is possible that markets remain volatile in the near term as the referendum results could lead to further uncertainties in Europe. We remain mildly constructive on US CLOs (particularly higher-quality names) given the lack of primary supply and their attractive valuations versus other SP asset classes, and expect the fundamental credit environment to remain generally supportive. Additionally, RMBS investors are expected to receive $7.9bn from the Countrywide settlement this month and we expect a portion of that payout to be reinvested back into alternate-asset classes including CLOs.

This week, three deals were issued for a total of $1.3bn. US CLO issuance YTD is $25.7bn, which is 46% of the $56bn issued over the same period last year.

Research analysts

US Securitized Products

Paul Nikodem - NSI
paul.nikodem@nomura.com
+1 212 667 2130

Pratik K. Gupta - NSI
Pratik.Gupta@nomura.com
+1 212 667 1403

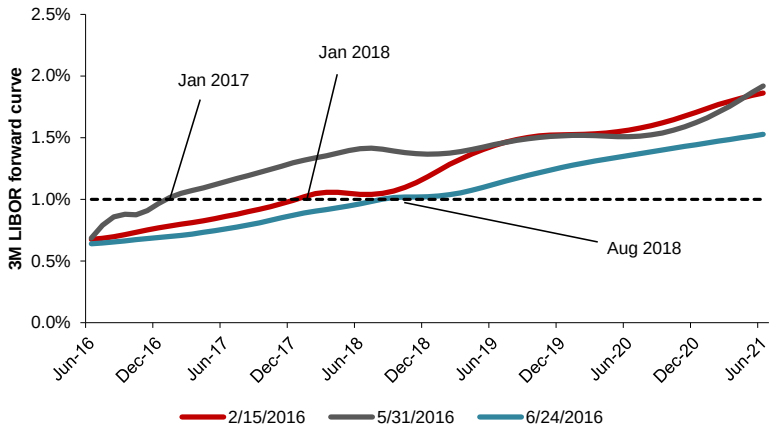
Shawn Lim - NSI
shawn.lim@nomura.com
+1 212 298 4469

Fig. 1: Recently issued US CLOs

Deal Name	CLO Manager	Orig Deal Bal ($mn)	Non-Call Period (yrs)	Reinv Period (yrs)	AAA Coupon
Ares XXXIX	Ares	510	2.8	4.8	L+153
Anchorage Capital CLO 8	Anchorage Capital	409	2	4	L+165
Goldentree Loan Opp. XII	Goldentree	411	2	4.5	L+153
1828 CLO	Guggenheim	410	2	4	L+160
Benefit Street CLO IX	Benefit Street Partners	404	2	4	L+161
Venture XXIII CLO	MJX	411	2	4	L+165
Seven Sticks CLO	Guggenheim	401	2	4	L+170
Galaxy XXII CLO	PineBridge	400	2	4	L+158

Source: LCD, Nomura

Fig. 2: Evolution of the 3M LIBOR forward curve



Source: Bloomberg, Nomura

Update on hedged spreads in JPY and drivers of cross-currency basis swaps

Since Japanese investors are one of the main anchor buyers for USD AAA CLOs, we analyze shifts in currency hedging costs that have affected the relative attractiveness of US vs European AAA CLOs recently. As Japanese banks often hedge the currency risk on their overseas CLO exposure, we track currency-adjusted spreads for US CLOs over time. This is a proxy for the cost of swapping principal and interest payments on a US CLO into JPY.

We find that currency hedging costs are tied to both rate differentials as well as relative differences in IG corporate spreads across geographies. After the referendum vote, as of the time of publication, the USD/JPY basis swap only moved by 1bp and the EUR/USD basis swap moved by 3bp.

However, going forward, due to the uncertainties introduced by the referendum, divergence in either rates or credit spreads may affect the relative attractiveness of US CLO AAA (and EU CLO AAA). In addition to differences in currency adjusted spreads, European CLO issuance is likely to decrease after the referendum vote, and it is possible that investors raise greater credit concerns for European CLOs going forward.

Overview of currency hedging framework

In this section we describe how a Japanese investor would view US and EUR AAA CLO spreads on a currency adjusted basis. Figure 5 shows the sample calculation showing US and EU AAA spreads from the perspective of a JPY investor after currency hedges. We assume that the investor uses a cross-currency basis swap that hedges the LIBOR component (i.e., swapping L+0bps to JPY+Margin) plus the margin component (i.e., 160bp over LIBOR). The additional cost of hedging the margin is approximately -8bp running for the US/JPY swap and -4bp for the EU/JPY swap.

Fig. 5: Sample calculations for currency hedging framework

Sample calculations	USD	EUR
CLO AAA spread	155bp*	130bp*
Cross currency basis swap (5y)	-87bp	-41bp
Cost to hedge the margin	-8bp	-4bp
Net spread in ¥LIBOR	60bp running	85bp running

**Pre-Brexit primary spreads*

Source: Nomura

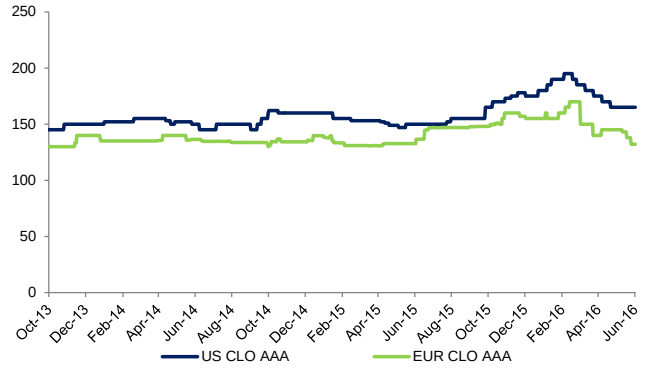
In addition to utilizing a cross-currency basis swap, one could be even more precise by introducing a balance-guaranteed feature of the swap (which would also increase the hedging costs). One application of this would be for an issuer to issue a yen-denominated AAA security outright; there were a number of yen-denominated repacks in 2014 and 2015 in the ¥LIBOR + 45-55bp context at a time when the implied spread of CLO tranches (US CLO AAA spread less the cross currency basis swap cost) was in the ¥LIBOR + 80-110bp spread context.

Net spreads of US and EU AAA after currency hedge

At current spread levels[8], Japanese investors should have preferred Euro AAA CLOs on a currency adjusted basis, as the spread differential is almost 25bp. Figure 6 shows the historical time series of US and EU AAA CLO spreads, both unhedged (left) and incorporating the cross currency hedge (right). At the start of this year this difference was closer to **15bp** (favoring Euro AAAs). This currency-adjusted spread differential at the start of the year was one of the contributing factors for why European AAAs outperformed US AAAs.

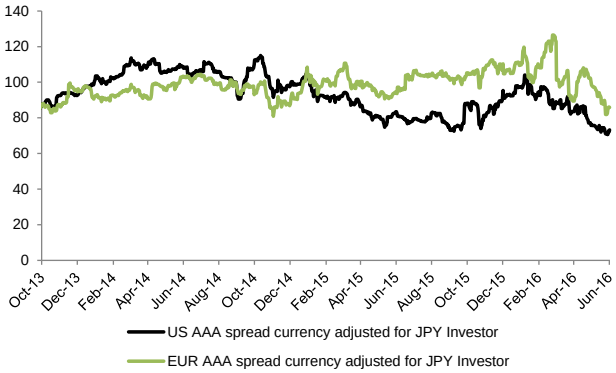
[8] As of 6/23 levels pre-referendum vote

Fig. 6: European and US CLO AAA nominal spreads



Source: Nomura

Fig. 7: European/US CLO AAA spreads from hedged JPY investor perspective



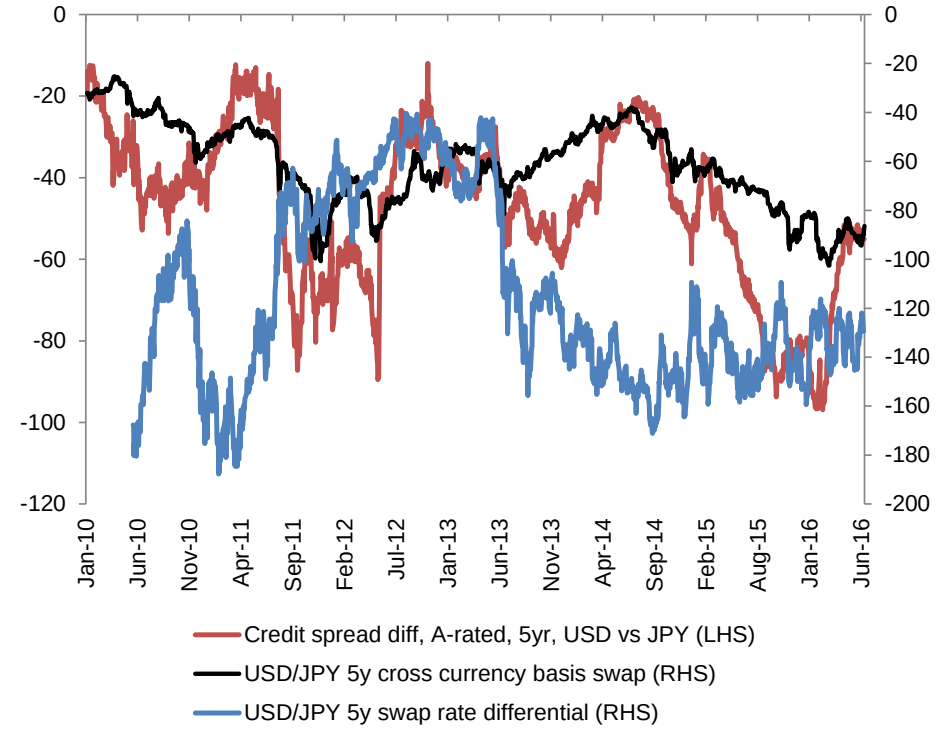
Source: Bloomberg, Nomura

Drivers of the cross currency basis

Figure 9 shows the JPY/USD currency basis over time along with the differential in swap rates (5y) and IG corporate spreads. This basis is largely affected by corporate spread differentials due to cross border corporate issuance transactions (which mainly occur between US/EUR and EUR/JPY, thus affecting US/JPY indirectly). For example, in 2H2015, the widening in US credit spreads caused a number of issuers to swap overseas issuance pushing the basis more negative.

In addition, since Fed liftoff, Japanese investor demand for USD assets has picked up significantly given the rate differential and expectations of future rate divergence. For Japanese banks, money market reform and tighter regulations have constrained their use of CP, forcing them to fund using repo and cross currency basis swaps pushing these spreads wider.

Fig. 9: USD/JPY basis vs credit spread differences



Source: Bloomberg, Nomura

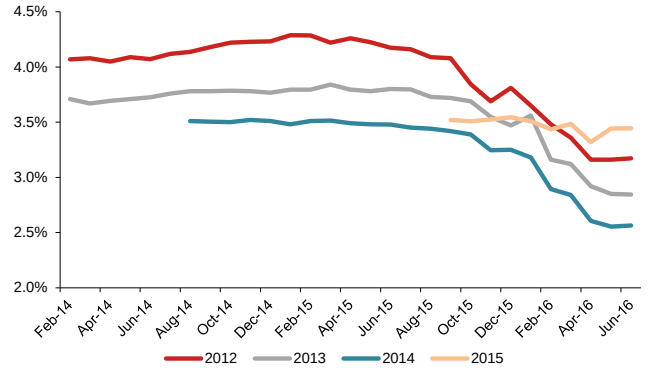
EU vs US: A similar framework can also be applied to EU vs US deals. Using this framework, US AAA CLOs (issued at +155-175bps) appear to be fair to slightly rich versus Euro AAA CLOs (issued at 130bp) after adjusting for currency hedging costs, depending on what type of manager/deal the investor is purchasing[9]. Flows down the capital stack (i.e., AA and below) are less impacted by movements in the basis given that the cost of currency hedging is a much smaller percentage of the DM.

US CLO Performance Update

Based on available data, the following trends were observed in the latest quarter:

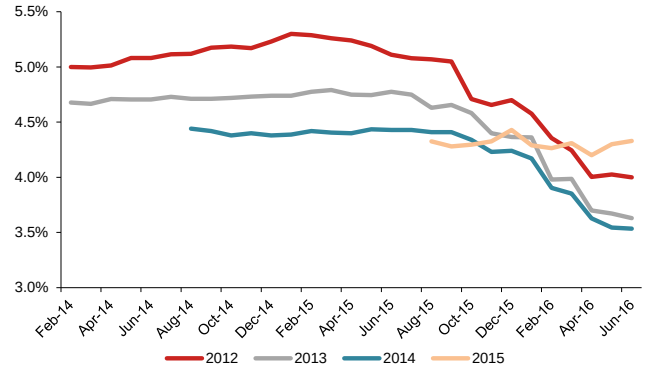
- Two CLO 2.0 deals are currently breaching their **junior OC** test, while seven deals are failing their **interest diversion** test. At least 5 deals have had cash flow diversions in the April/May payment dates, out of which 4 deals remain in noncompliance of their ID tests. Currently, 5 deals are within 1% of breaching their junior OC tests and 27 deals within 1% of breaching their ID tests.
- **Interest diversion test buffers** have remained flat over the past two months, while **junior OC test buffers** have declined slightly albeit at a slower rate than in 2016Q1. For certain deals that had low coverage test buffers, we have observed anecdotally that junior OC ratios improved meaningfully in some of these deals to avoid cash flow diversion.

Fig. 10: Median interest diversion test buffers over time



Source: Intex, Nomura

Fig. 11: Median junior OC test buffer over time



Source: Intex, Nomura

Fig. 12: Median interest diversion test buffers by vintage

		Jun-16			Mar-16		
Vintage	# Deals	Median buffer	# Fails	# Deals with Buffer <1%	Median buffer	# Fails	# Deals with Buffer <1%
2012	57	3.2%	1	2	3.4%	0	5
2013	143	2.8%	4	6	3.1%	3	7
2014	212	2.6%	2	19	2.8%	4	9
2015	166	3.4%	0	0	3.5%	0	0

*For deals in reinvestment only

Source: Intex, Nomura

Fig. 13: Median junior OC test buffers by vintage

		Jun-16			Mar-16		
Vintage	# Deals	Median buffer	# Fails	# Deals with Buffer <1%	Median buffer	# Fails	# Deals with Buffer <1%
2012	61	4.0%	0	1	4.2%	0	0
2013	148	3.6%	0	3	4.0%	1	2
2014	212	3.5%	2	1	3.9%	0	5
2015	148	4.3%	0	0	4.3%	0	0

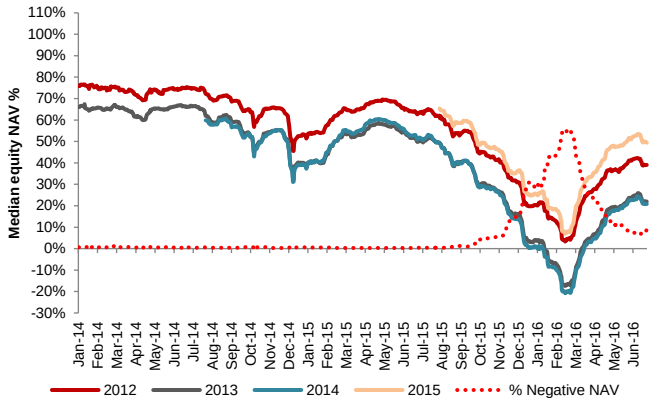
*For deals in reinvestment only

Source: Intex, Nomura

- The recovery in **equity NAVs** has slowed after resurging in March and April. The share of deals with negative equity NAVs is currently at 9%, compared with 55% in mid-February this year.
- **Equity cash-on-cash** payments were slightly compressed due to a higher LIBOR reducing the benefit received from LIBOR floors.

[9] As of 6/23 levels pre-referendum vote

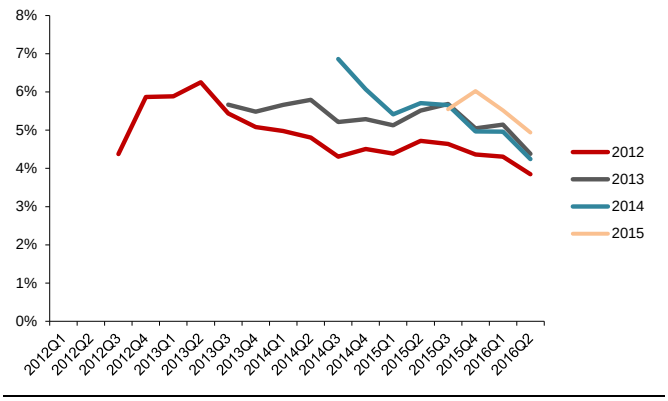
Fig. 14: Median equity NAV by vintage (% of equity balance)



*Latest prices as of 6/23/2016

Source: Intex, Nomura

Fig. 15: Median quarterly equity payments, cash-on-cash



Source: Intex, Markit, Nomura

Fig. 16: NAV percentiles and share of deals with negative NAV by vintage

		6/23/2016				5/23/2016				3/23/2016			
Vintage	# Deals	25th Pct	Median	75th Pct	% Negative NAV	25th Pct	Median	75th Pct	% Negative NAV	25th Pct	Median	75th Pct	% Negative NAV
2012	85	24%	39%	48%	4%	25%	40%	49%	4%	8%	26%	36%	16%
2013	146	10%	22%	33%	13%	10%	22%	33%	13%	-7%	5%	17%	38%
2014	217	7%	21%	34%	17%	6%	21%	34%	18%	-14%	3%	19%	45%
2015	164	37%	49%	59%	1%	36%	50%	60%	1%	17%	33%	45%	6%
CLO 2.0	**770**	**17%**	**32%**	**48%**	**9%**	**16%**	**31%**	**49%**	**9%**	**0%**	**17%**	**34%**	**25%**

*Latest prices as of 6/23/2016

Source: Intex, Markit, Nomura

- **WAL** buffers decreased slightly as WAL limits tightened, causing more 2012 vintage deals to fail their WAL tests.
- The median **WARF** remained relatively unchanged over the past quarter as the overall pace of loan downgrades slowed. Currently, 20 deals are breaching their WARF limits, although they might have the flexibility to adjust the limit upwards. See our previous publication for more details on manager flexibility on collateral quality tests.
- The median **WAS** has remained flat over the past quarter as there were no significant moves in 3M LIBOR in 2016Q1.
- **Caa/CCC exposure** has increased marginally since March due to a slower rate of Caa/CCC downgrades. Currently, about 18% of CLO 2.0 deals have reported a breach of their Moody's Caa limit. Although exposure to loans rated Caa by Moody's remains higher than exposure to loans rated CCC, the difference is gradually diminishing.
- Exposure to **defaulted loans** has remained flat in 2012-14 vintage deals as the pace of loan defaults has slowed.
- The share of **second lien loans** continued to decline gradually, possibly due to continued pressure on Caa/CCC tests in CLOs. Second lien exposure in 2014-15 vintage CLOs remains higher than other CLO 2.0 vintages.

Fig. 17: Median WAL and WAL buffer by vintage

		Jun-16			Mar-16		
Vintage	# Deals	WAL	Buffer	% Fail	WAL	Buffer	% Fail
2012	62	4.34	0.09	24%	4.41	0.16	16%
2013	149	4.55	0.56	3%	4.63	0.71	1%
2014	214	4.73	1.44	0%	4.80	1.61	0%
2015	160	4.90	2.22	0%	4.98	2.31	0%

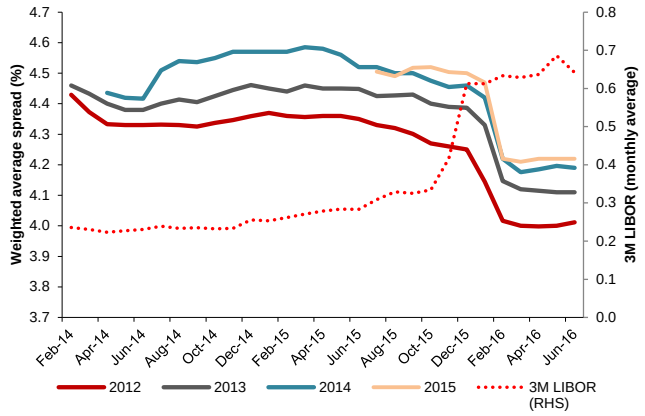
Source: Intex, Nomura

Fig. 18: Median WARF and WARF buffer by vintage

		Jun-16			Mar-16		
Vintage	# Deals	WARF	Buffer	% Fail	WARF	Buffer	% Fail
2012	61	2875	228	7%	2875	201	6%
2013	149	2859	249	2%	2870	238	1%
2014	213	2875	170	6%	2884	156	7%
2015	159	2775	279	1%	2778	242	1%

Source: Intex, Nomura

Fig. 19: Median WAS over time



Source: Intex, Nomura

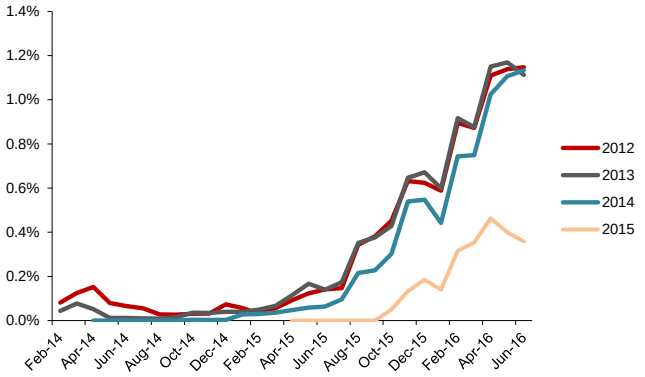
Fig. 20: Median exposure to assets rated Caa/CCC and below

Caa % (Moody's)		Jun-16			Mar-16		
Vintage	# Deals	Caa %	Caa Buffer	# Deals Exceeding Limit	Caa %	Caa Buffer	# Deals Exceeding Limit
2012	53	5.23	1.76	12	5.00	2.26	11
2013	139	5.20	1.41	33	5.10	1.84	30
2014	204	5.50	1.30	51	5.09	2.20	41
2015	157	3.21	3.70	4	2.92	4.51	3

CCC % (S&P)		Jun-16			Mar-16		
Vintage	# Deals	CCC %	CCC Buffer	# Deals Exceeding Limit	CCC %	CCC Buffer	# Deals Exceeding Limit
2012	57	3.66	3.25	3	3.00	3.88	1
2013	140	4.41	2.50	18	3.10	3.90	7
2014	187	4.67	2.39	28	3.40	3.99	11
2015	125	2.55	4.88	0	1.49	6.00	1

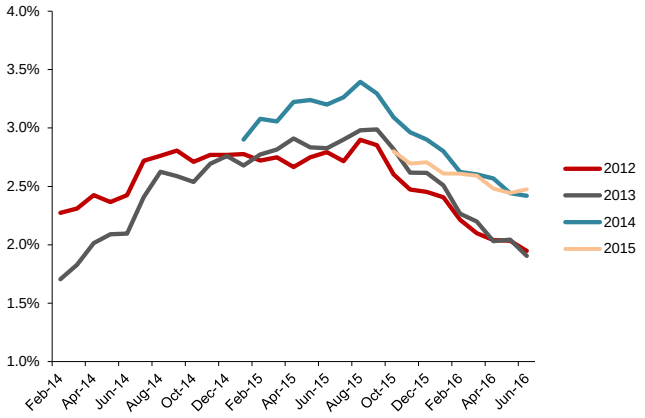
Source: Intex, Nomura

Fig. 21: Average exposure to defaulted loans over time



Source: Intex, Nomura

Fig. 22: Median exposure to second lien loans over time



Source: Intex, Nomura

Deal redemption and amortization

- **Called deals:** Control investors have been proactively redeeming CLOs in the past three months as loan technicals remain favorable. At least 34 deals have been called so far this year, including four CLO 2.0 deals. Figure 23 shows the list of deals that were called in the past quarter.
- **Amortization rates** in CLOs have seen a slight uptick in 2016Q2 due to increased loan repricing and refinancing activity. See our previous publication for a detailed analysis on CLO amortization.

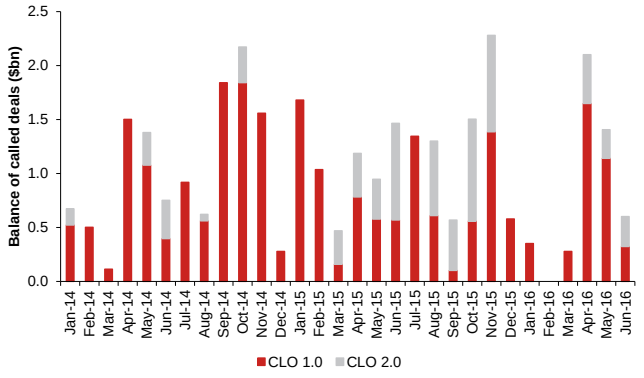
Fig. 23: Recently called or paid down CLOs

Deal Name	Vintage	Est. Call Date	# Mths Post Reinv	AAA Factor	Deal Factor (excl. equity)	Cost of Funding*	WAL Buffer	Bond Bal ($mn)
Regatta Funding	2007	Jun-16	36	2%	21%	102	1.76	104
Latitude CLO II	2006	Jun-16	36	0%	16%	164	-3.23	44
Avalon IV Capital	2012	Jun-16	14	84%	88%	179	0.60	278
Gulf Stream - Sextant CLO 2007-1	2007	Jun-16	36	24%	38%	80	-2.03	175
Foothill CLO I	2007	May-16	27	6%	27%	114	-1.10	123
Gulf Stream - Rashinban CLO 2006-I	2006	May-16	30	6%	19%	63	-1.62	67
Ares XII CLO	2007	May-16	42	33%	49%	160		312
Doral CLO II	2012	May-16	13	62%	72%	199	0.28	267
AIMCO CLO, Series 2006-A	2006	May-16	33	14%	30%	86	-2.95	115
Venture V CDO	2005	May-16	48	0%	11%	216	2.99	42
Hamlet II	2006	May-16	18	68%	70%	28	-0.24	290
Saturn CLO	2007	May-16	24	26%	41%	89	-0.33	190
Harch CLO III	2007	Apr-16	36	0%	12%	215	0.13	46
Valhalla CLO	2004	Apr-16	57	0%	3%	393	-3.41	28
Southfork CLO	2005	Apr-16	48	0%	3%	209		19
Mill Creek CLO	2011	Apr-16	15	74%	81%	264	0.20	196
Babson CLO 2011-I	2011	Apr-16	19	40%	56%	180	0.40	257
Momentum Capital Fund	2007	Apr-16	30	10%	27%	167	1.75	86
Hudson Canyon Funding II	2008	Apr-16	36	0%	10%	214		41
Cent CDO XI	2006	Apr-16	48	58%	65%	46	-2.07	418
ColumbusNova CLO IV Ltd. 2007-II	2007	Apr-16	18	55%	61%	116	-1.40	245
Gateway CLO	2007	Apr-16	30	0%	29%	161	-2.40	135
BlackRock Senior Income Series IV	2007	Apr-16	36	10%	24%	67	0.81	112
Jersey Street CLO	2006	Apr-16	42	0%	11%	105	-1.46	30
Greens Creek Funding	2007	Apr-16	21	33%	45%	67	-1.44	188
Oak Hill Credit Partners V	2007	Apr-16	18	51%	60%	122		300

*Estimated cost of funding as spread over 3M LIBOR

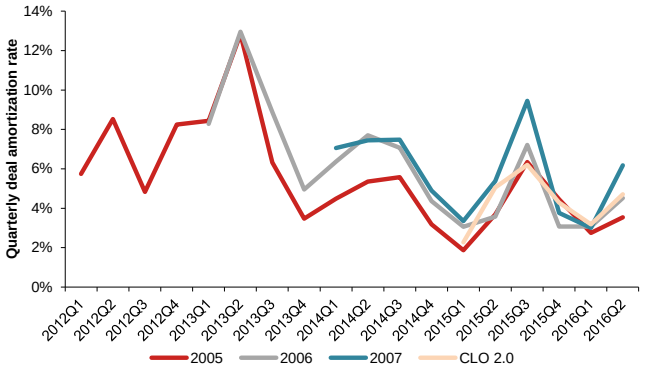
Source: Intex, LCD, Nomura

Fig. 24: Balance of called deals over time



Source: Intex, Nomura

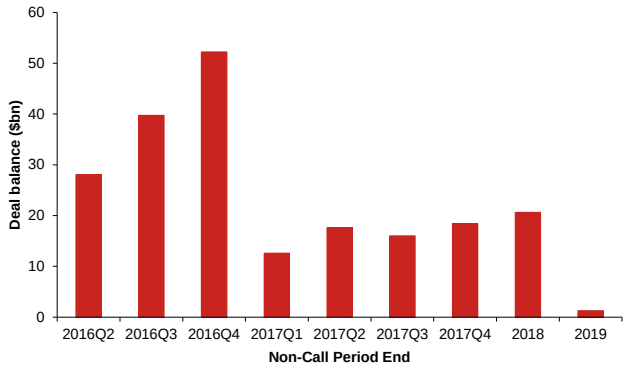
Fig. 25: Average quarterly CLO amortization rate by vintage



*Excludes deals at the time of redemption

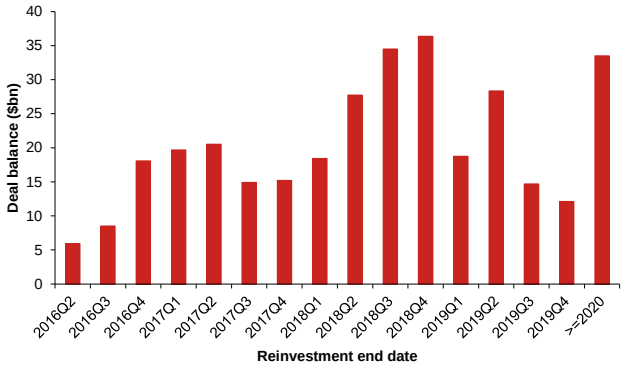
Source: Intex, Nomura

Fig. 26: Distribution of CLO 2.0 deals by non-call end date



Source: Intex, Nomura

Fig. 27: Distribution of CLO 2.0 deals by reinvestment end date



Source: Intex, Nomura

Fig. 28: Amortizing CLOs with large principal collection balances (which could lead to large paydowns in the near term)

Deal Name	Vintage	Prin. Collection Bal ($mn)	Deal Balance ($mn)	% of Curr Deal Balance	Outstanding First-Pay Tranche(s) Bal ($mn)	% of Outstanding First-Pay	Next Pay Date	Reinv End
Dryden XI - Leveraged Loan CDO 2006	2006	221	258	85%	45	>100%	Jul-16	Apr-13
GoldenTree Loan Opportunities V	2007	328	425	77%	181	>100%	Jul-16	Oct-13
Black Diamond CLO 2005-2	2005	120	361	33%	30	>100%	Jul-16	Apr-12
ABCLO 2007-1	2007	16	55	29%	3	>100%	Jul-16	Jul-13
Baker Street Funding CLO 2005-1	2005	34	122	28%	33	>100%	Sep-16	Dec-11
Symphony CLO III	2007	68	252	27%	121	56%	Aug-16	May-13
Gulf Stream - Sextant CLO 2007-1	2007	8	35	24%	0	>100%	Sep-16	Jun-13
Prospect Park CDO	2006	34	170	20%	43	80%	Jul-16	Jul-13
Avery Street CLO LTD	2006	21	111	19%	25	83%	Jul-16	Apr-12
Octagon Investment Partners X	2006	23	134	17%	34	67%	Jul-16	Oct-13
CIFC Funding 2007-II	2007	46	303	15%	25	>100%	Jul-16	Apr-14
Nautique Funding Ltd.	2006	32	210	15%	64	50%	Jul-16	Apr-13
Phoenix III	2007	23	156	15%	29	79%	Jul-16	Jul-13
MAPS CLO Fund II	2007	40	277	14%	138	29%	Jul-16	Jul-14
Grant Grove CLO	2007	13	92	14%	14	91%	Jul-16	Jan-13
PPM Grayhawk CLO	2007	26	183	14%	39	66%	Jul-16	Apr-14
Aberdeen Loan Funding	2008	30	214	14%	83	36%	Aug-16	May-14
Stone Tower CLO V	2006	32	252	13%	54	60%	Jul-16	Oct-13
Voya CLO II	2006	22	176	13%	57	39%	Aug-16	Aug-11
Highbridge Loan Management 2012-1	2012	38	304	13%	191	20%	Sep-16	Sep-15
Muir Grove CLO	2007	26	210	12%	95	27%	Jul-16	Oct-13
MidOcean Credit CLO I	2013	52	425	12%	252	20%	Jul-16	Jan-16
Ares XXII CLO	2007	21	178	12%	66	32%	Jul-16	Oct-14
Centurion CDO 9	2005	60	516	12%	315	19%	Jul-16	Jul-12
Mount Wilson CLO II	2007	21	187	11%	25	85%	Jul-16	Jul-13
Flatiron CLO 2011-1	2011	35	317	11%	183	19%	Jul-16	Jan-16
Stone Tower CLO VI	2007	43	414	10%	104	41%	Jul-16	Apr-14
Ocean Trails CLO I	2006	16	158	10%	67	24%	Jul-16	Oct-13
Symphony CLO VIII	2012	38	378	10%	229	16%	Jul-16	Jan-15
Canyon Capital CLO 2006-1	2006	30	301	10%	227	13%	Sep-16	Sep-12
Voya CLO III	2006	14	143	10%	23	61%	Jul-16	Jan-13

Source: Intex, Nomura

Top changes in CLO deals over the past quarter

Fig. 29: CLO 2.0 deals with the largest quarterly change in a given metric (deals in reinvestment)

Top 10 Junior OC Increase

Deal Name	Vintage	Increase	Curr Jr OC %	Collat Bal ($mn)
Fortress Credit BSL II	2013	1.2%	109.8%	385
Mountain Hawk CLO 1	2013	1.0%	105.2%	471
Cent CLO 16	2012	1.0%	108.0%	393
Cent CLO 17	2013	1.0%	106.9%	390
GoldenTree Loan Opportunities VIII	2014	1.0%	108.1%	594
Mountain Hawk II CLO	2013	0.9%	102.7%	493
GoldenTree Loan Opportunities XI	2015	0.9%	108.4%	528
GoldenTree Loan Opportunities X	2015	0.9%	109.1%	681
Sound Point CLO V	2014	0.8%	108.6%	600
KVK CLO 2014-2	2014	0.8%	105.9%	595

Top 10 Junior OC Decrease

Deal Name	Vintage	Decrease	Curr Jr OC %	Collat Bal ($mn)
Halcyon Loan Advisors Funding 2013-1	2013	-2.5%	106.2%	491
Avery Point VI CLO	2015	-2.2%	108.8%	482
Flagship CLO VII	2014	-2.1%	103.3%	423
Mountain View CLO 2014-1	2014	-1.9%	105.9%	496
Saranac CLO I	2013	-1.9%	105.9%	342
Greywolf CLO II	2013	-1.7%	106.5%	407
Halcyon Loan Advisors Funding 2012-1	2012	-1.7%	107.3%	359
Trinitas CLO II	2014	-1.7%	104.0%	404
Halcyon Loan Advisors Funding 2012-2	2012	-1.6%	106.9%	434
Halcyon Loan Advisors Funding 2015-3	2015	-1.5%	107.6%	512

Top 10 WAS Increase

Deal Name	Vintage	Increase	Curr WAS	Collat Bal ($mn)
West CLO 2014-2	2015	0.18	4.35	392
Sound Point CLO VI	2014	0.16	4.74	614
Saratoga Investment Corp CLO 2013-1	2013	0.16	4.42	304
Marathon CLO VIII	2015	0.15	5.10	460
CFIP CLO 2014-1	2014	0.15	4.16	403
Palmer Square CLO 2015-2	2015	0.14	3.97	405
HarbourView CLO VII	2014	0.14	4.30	400
Dryden 36 Senior Loan Fund	2014	0.13	4.03	601
CFIP CLO 2013-1	2013	0.13	4.13	404
Madison Park Funding XVI	2015	0.12	4.52	581

Top 10 WAS Decrease

Deal Name	Vintage	Decrease	Curr WAS	Collat Bal ($mn)
OHA Loan Funding 2012-1	2013	-0.38	4.03	341
Blue Hill CLO	2013	-0.37	3.90	484
North End CLO	2013	-0.35	3.91	397
Halcyon Loan Advisors Funding 2015-3	2015	-0.33	4.74	512
Halcyon Loan Advisors Funding 2012-2	2012	-0.31	4.56	434
NZCG Funding	2015	-0.29	4.49	811
Zais CLO 1	2014	-0.28	4.81	308
Arrowpoint CLO 2013-1	2013	-0.28	3.96	298
Black Diamond CLO 2014-1	2014	-0.27	4.06	382
Octagon Investment Partners XX	2014	-0.27	4.24	735

Source: Intex, Nomura

Fig. 30: CLO 2.0 deals with the largest quarterly change in a given metric (deals in reinvestment)

Top 10 CCC % Decrease

Deal Name	Vintage	Decrease	Curr CCC %	Collat Bal ($mn)
Halcyon Loan Advisors Funding 2014-3	2014	-3.3	6.2	616
Fortress Credit BSL II	2013	-2.9	5.2	385
Vibrant CLO III	2015	-2.9	2.8	407
Northwoods Capital XIV	2014	-2.9	6.9	489
Northwoods Capital X	2013	-2.9	6.8	339
Crown Point CLO II	2013	-2.7	6.1	252
Muir Woods CLO	2012	-2.7	6.3	268
Vibrant CLO II	2013	-2.3	4.4	350
Flagship CLO VIII	2014	-2.3	4.8	427
Flagship CLO VII	2014	-2.3	3.3	423

Top 10 CCC % Increase

Deal Name	Vintage	Increase	Curr CCC %	Collat Bal ($mn)
KVK CLO 2014-3	2014	5.4	11.6	482
WhiteHorse IX	2014	4.5	13.9	396
Figueroa CLO 2013-1	2013	4.3	10.4	378
Figueroa CLO 2014-1	2014	4.3	8.8	395
WhiteHorse VIII	2014	4.2	11.4	525
Babson CLO 2014-II	2014	4.2	12.4	535
Peaks CLO 1	2014	4.2	6.8	143
Silvermore CLO	2014	4.0	18.6	493
KVK CLO 2014-1	2014	3.9	7.7	559
Golub Capital Partners CLO 23(B)	2015	3.9	5.9	447

Top 10 WARF Decrease

Deal Name	Vintage	Decrease	Curr WARF	Collat Bal ($mn)
Mountain View CLO 2014-1	2014	-228	2914	496
Halcyon Loan Advisors Funding 2014-1	2014	-213	2779	412
Northwoods Capital X	2013	-204	3254	339
ACIS CLO 2015-6	2015	-201	2778	551
Northwoods Capital XI	2014	-194	3193	582
Oaktree CLO 2014-2	2014	-187	2926	507
Battalion CLO IX	2015	-185	2837	497
JFIN CLO 2014	2014	-182	3001	513
Northwoods Capital XIV	2014	-169	3213	489
Halcyon Loan Advisors Funding 2012-2	2012	-167	2763	434

Top 10 WARF Increase

Deal Name	Vintage	Increase	Curr WARF	Collat Bal ($mn)
KVK CLO 2014-3	2014	296	3090	482
KVK CLO 2014-1	2014	209	3228	559
Mountain Hawk CLO 1	2013	206	3139	471
Mountain Hawk II CLO	2013	176	3138	493
WhiteHorse VIII	2014	173	3253	525
Mountain Hawk III CLO	2014	166	3109	550
BlueMountain CLO 2013-1	2013	143	2943	503
Finn Square CLO	2012	142	2837	498
OCP CLO 2014-5	2014	140	3015	390
GoldenTree Loan Opportunities X	2015	123	2972	681

*CCC % is defined as the greater of trustee-reported Caa/CCC-or-less %

Source: Intex, Nomura

Appendix A-1

Analyst Certification

Each research analyst identified herein certifies that all of the views expressed in this report by such analyst accurately reflect his or her personal views about the subject securities and issuers. In addition, each research analyst identified on the cover page hereof hereby certifies that no part of his or her compensation was, is, or will be, directly or indirectly related to the specific recommendations or views that he or she has expressed in this research report, nor is it tied to any specific investment banking transactions performed by Nomura Securities International, Inc., Nomura International plc or any other Nomura Group company.

Important Disclosures

Online availability of research and conflict-of-interest disclosures

Nomura research is available on www.nomuranow.com/research, Bloomberg, Capital IQ, Factset, MarkitHub, Reuters and ThomsonOne. Important disclosures may be read at http://go.nomuranow.com/research/globalresearchportal/pages/disclosures/disclosures.aspx or requested from Nomura Securities International, Inc., on 1-877-865-5752. If you have any difficulties with the website, please email grpsupport@nomura.com for help.

The analysts responsible for preparing this report have received compensation based upon various factors including the firm's total revenues, a portion of which is generated by Investment Banking activities. Unless otherwise noted, the non-US analysts listed at the front of this report are not registered/qualified as research analysts under FINRA rules, may not be associated persons of NSI, and may not be subject to FINRA Rule 2241 restrictions on communications with covered companies, public appearances, and trading securities held by a research analyst account.

Nomura Global Financial Products Inc. (“NGFP”) Nomura Derivative Products Inc. (“NDPI”) and Nomura International plc. (“NIplc”) are registered with the Commodities Futures Trading Commission and the National Futures Association (NFA) as swap dealers. NGFP, NDPI, and NIplc are generally engaged in the trading of swaps and other derivative products, any of which may be the subject of this report.

ADDITIONAL DISCLOSURES REQUIRED IN THE U.S.

Principal Trading: Nomura Securities International, Inc and its affiliates will usually trade as principal in the fixed income securities (or in related derivatives) that are the subject of this research report. Analyst Interactions with other Nomura Securities International, Inc. Personnel: The fixed income research analysts of Nomura Securities International, Inc and its affiliates regularly interact with sales and trading desk personnel in connection with obtaining liquidity and pricing information for their respective coverage universe**.**

Valuation methodology - Fixed Income

Nomura’s Fixed Income Strategists express views on the price of securities and financial markets by providing trade recommendations. These can be relative value recommendations, directional trade recommendations, asset allocation recommendations, or a mixture of all three.
The analysis which is embedded in a trade recommendation would include, but not be limited to:
• Fundamental analysis regarding whether a security’s price deviates from its underlying macro- or micro-economic fundamentals.
• Quantitative analysis of price variations.
• Technical factors such as regulatory changes, changes to risk appetite in the market, unexpected rating actions, primary market activity and supply/ demand considerations.
The timeframe for a trade recommendation is variable. Tactical ideas have a short timeframe, typically less than three months. Strategic trade ideas have a longer timeframe of typically more than three months.

Disclaimers

This document contains material that has been prepared by the Nomura entity identified on page 1 and/or with the sole or joint contributions of one or more Nomura entities whose employees and their respective affiliations are also specified on page 1 or identified elsewhere in the document. The term "Nomura Group" used herein refers to Nomura Holdings, Inc. or any of its affiliates or subsidiaries and may refer to one or more Nomura Group companies including: Nomura Securities Co., Ltd. ('NSC') Tokyo, Japan; Nomura International plc ('NIplc'), UK; Nomura Securities International, Inc. ('NSI'), New York, US; Nomura International (Hong Kong) Ltd. (‘NIHK’), Hong Kong; Nomura Financial Investment (Korea) Co., Ltd. (‘NFIK’), Korea (Information on Nomura analysts registered with the Korea Financial Investment Association ('KOFIA') can be found on the KOFIA Intranet at http://dis.kofia.or.kr); Nomura Singapore Ltd. (‘NSL’), Singapore (Registration number 197201440E, regulated by the Monetary Authority of Singapore); Nomura Australia Ltd. (‘NAL’), Australia (ABN 48 003 032 513), regulated by the Australian Securities and Investment Commission ('ASIC') and holder of an Australian financial services licence number 246412; P.T. Nomura Indonesia (‘PTNI’), Indonesia; Nomura Securities Malaysia Sdn. Bhd. (‘NSM’), Malaysia; NIHK, Taipei Branch (‘NITB’), Taiwan; Nomura Financial Advisory and Securities (India) Private Limited (‘NFASL’), Mumbai, India (Registered Address: Ceejay House, Level 11, Plot F, Shivsagar Estate, Dr. Annie Besant Road, Worli, Mumbai- 400 018, India; Tel: +91 22 4037 4037, Fax: +91 22 4037 4111; CIN No: U74140MH2007PTC169116, SEBI Registration No. for Stock Broking activities : BSE INB011299030, NSE INB231299034, INF231299034, INE 231299034, MCX: INE261299034; SEBI Registration No. for Merchant Banking : INM000011419; SEBI Registration No. for Research: INH000001014 and NIplc, Madrid Branch (‘NIplc, Madrid’). ‘CNS Thailand’ next to an analyst’s name on the front page of a research report indicates that the analyst is employed by Capital Nomura Securities Public Company Limited (‘CNS’) to provide research assistance services to NSL under a Research Assistance Agreement. ‘NSFSPL’ next to an employee’s name on the front page of a research report indicates that the individual is employed by Nomura Structured Finance Services Private Limited to provide assistance to certain Nomura entities under inter-company agreements.
THIS MATERIAL IS: (I) FOR YOUR PRIVATE INFORMATION, AND WE ARE NOT SOLICITING ANY ACTION BASED UPON IT; (II) NOT TO BE CONSTRUED AS AN OFFER TO SELL OR A SOLICITATION OF AN OFFER TO BUY ANY SECURITY IN ANY JURISDICTION WHERE SUCH OFFER OR SOLICITATION WOULD BE ILLEGAL; AND (III) BASED UPON INFORMATION FROM SOURCES THAT WE CONSIDER RELIABLE, BUT HAS NOT BEEN INDEPENDENTLY VERIFIED BY NOMURA GROUP.
Nomura Group does not warrant or represent that the document is accurate, complete, reliable, fit for any particular purpose or merchantable and does not accept liability for any act (or decision not to act) resulting from use of this document and related data. To the maximum extent

permissible all warranties and other assurances by Nomura group are hereby excluded and Nomura Group shall have no liability for the use, misuse, or distribution of this information.
Opinions or estimates expressed are current opinions as of the original publication date appearing on this material and the information, including the opinions and estimates contained herein, are subject to change without notice. Nomura Group is under no duty to update this document. Any comments or statements made herein are those of the author(s) and may differ from views held by other parties within Nomura Group. Clients should consider whether any advice or recommendation in this report is suitable for their particular circumstances and, if appropriate, seek professional advice, including tax advice. Nomura Group does not provide tax advice.
Nomura Group, and/or its officers, directors and employees, may, to the extent permitted by applicable law and/or regulation, deal as principal, agent, or otherwise, or have long or short positions in, or buy or sell, the securities, commodities or instruments, or options or other derivative instruments based thereon, of issuers or securities mentioned herein. Nomura Group companies may also act as market maker or liquidity provider (within the meaning of applicable regulations in the UK) in the financial instruments of the issuer. Where the activity of market maker is carried out in accordance with the definition given to it by specific laws and regulations of the US or other jurisdictions, this will be separately disclosed within the specific issuer disclosures.
This document may contain information obtained from third parties, including ratings from credit ratings agencies such as Standard & Poor's. Reproduction and distribution of third-party content in any form is prohibited except with the prior written permission of the related third-party. Third-party content providers do not guarantee the accuracy, completeness, timeliness or availability of any information, including ratings, and are not responsible for any errors or omissions (negligent or otherwise), regardless of the cause, or for the results obtained from the use of such content. Third-party content providers give no express or implied warranties, including, but not limited to, any warranties of merchantability or fitness for a particular purpose or use. Third-party content providers shall not be liable for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including lost income or profits and opportunity costs) in connection with any use of their content, including ratings. Credit ratings are statements of opinions and are not statements of fact or recommendations to purchase hold or sell securities. They do not address the suitability of securities or the suitability of securities for investment purposes, and should not be relied on as investment advice.
Any MSCI sourced information in this document is the exclusive property of MSCI Inc. ('MSCI'). Without prior written permission of MSCI, this information and any other MSCI intellectual property may not be reproduced, re-disseminated or used to create any financial products, including any indices. This information is provided on an "as is" basis. The user assumes the entire risk of any use made of this information. MSCI, its affiliates and any third party involved in, or related to, computing or compiling the information hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of this information. Without limiting any of the foregoing, in no event shall MSCI, any of its affiliates or any third party involved in, or related to, computing or compiling the information have any liability for any damages of any kind. MSCI and the MSCI indexes are services marks of MSCI and its affiliates.
The intellectual property right and any other rights, in Russell/Nomura Japan Equity Index belong to Nomura Securities Co., Ltd. ("Nomura") and Frank Russell Company ("Russell"). Nomura and Russell do not guarantee accuracy, completeness, reliability, usefulness, marketability, merchantability or fitness of the Index, and do not account for business activities or services that any index user and/or its affiliates undertakes with the use of the Index.
Investors should consider this document as only a single factor in making their investment decision and, as such, the report should not be viewed as identifying or suggesting all risks, direct or indirect, that may be associated with any investment decision. Nomura Group produces a number of different types of research product including, among others, fundamental analysis and quantitative analysis; recommendations contained in one type of research product may differ from recommendations contained in other types of research product, whether as a result of differing time horizons, methodologies or otherwise. Nomura Group publishes research product in a number of different ways including the posting of product on Nomura Group portals and/or distribution directly to clients. Different groups of clients may receive different products and services from the research department depending on their individual requirements.
Figures presented herein may refer to past performance or simulations based on past performance which are not reliable indicators of future performance. Where the information contains an indication of future performance, such forecasts may not be a reliable indicator of future performance. Moreover, simulations are based on models and simplifying assumptions which may oversimplify and not reflect the future distribution of returns.
Certain securities are subject to fluctuations in exchange rates that could have an adverse effect on the value or price of, or income derived from, the investment.
The securities described herein may not have been registered under the US Securities Act of 1933 (the '1933 Act'), and, in such case, may not be offered or sold in the US or to US persons unless they have been registered under the 1933 Act, or except in compliance with an exemption from the registration requirements of the 1933 Act. Unless governing law permits otherwise, any transaction should be executed via a Nomura entity in your home jurisdiction.
This document has been approved for distribution in the UK and European Economic Area as investment research by NIplc. NIplc is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. NIplc is a member of the London Stock Exchange. This document does not constitute a personal recommendation within the meaning of applicable regulations in the UK, or take into account the particular investment objectives, financial situations, or needs of individual investors. This document is intended only for investors who are 'eligible counterparties' or 'professional clients' for the purposes of applicable regulations in the UK, and may not, therefore, be redistributed to persons who are 'retail clients' for such purposes. This document has been approved by NIHK, which is regulated by the Hong Kong Securities and Futures Commission, for distribution in Hong Kong by NIHK. This document has been approved for distribution in Australia by NAL, which is authorized and regulated in Australia by the ASIC. This document has also been approved for distribution in Malaysia by NSM. In Singapore, this document has been distributed by NSL. NSL accepts legal responsibility for the content of this document, where it concerns securities, futures and foreign exchange, issued by their foreign affiliates in respect of recipients who are not accredited, expert or institutional investors as defined by the Securities and Futures Act (Chapter 289). Recipients of this document in Singapore should contact NSL in respect of matters arising from, or in connection with, this document. Unless prohibited by the provisions of Regulation S of the 1933 Act, this material is distributed in the US, by NSI, a US-registered broker-dealer, which accepts responsibility for its contents in accordance with the provisions of Rule 15a-6, under the US Securities Exchange Act of 1934. The entity that prepared this document permits its separately operated affiliates within the Nomura Group to make copies of such documents available to their clients.
This document has not been approved for distribution to persons other than 'Authorised Persons', 'Exempt Persons' or 'Institutions' (as defined by the Capital Markets Authority) in the Kingdom of Saudi Arabia ('Saudi Arabia') or 'professional clients' (as defined by the Dubai Financial Services Authority) in the United Arab Emirates ('UAE') or a 'Market Counterparty' or 'Business Customers' (as defined by the Qatar Financial Centre Regulatory Authority) in the State of Qatar ('Qatar') by Nomura Saudi Arabia, NIplc or any other member of Nomura Group, as the case may be. Neither this document nor any copy thereof may be taken or transmitted or distributed, directly or indirectly, by any person other than those authorised to do so into Saudi Arabia or in the UAE or in Qatar or to any person other than 'Authorised Persons', 'Exempt Persons' or 'Institutions' located in Saudi Arabia or 'professional clients' in the UAE or a 'Market Counterparty' or 'Business Customers' in Qatar . By accepting to receive this document, you represent that you are not located in Saudi Arabia or that you are an 'Authorised Person', an 'Exempt Person' or an 'Institution' in Saudi Arabia or that you are a 'professional client' in the UAE or a 'Market Counterparty' or 'Business Customers' in Qatar and agree to comply with these restrictions. Any failure to comply with these restrictions may constitute a violation of the laws of the UAE or Saudi Arabia or Qatar.