Ginnie Mae Project Loan CMBS Guide

November 14th, 2018

Securitized Strategy
Darrell Wheeler
212-610-2371
darrell.wheeler@cantor.com

Agency CMBS Trading
Yahli Becker
212-829-5259
yahli.becker@cantor.com

Neil Wickens
212-829-5259
neil.wickens@cantor.com

Agency CMBS Banking
Timothy Groves
212-915-1908
timothy.groves@cantor.com

Ginnie Mae CMBS guarantees a variety of multi-family loans that are placed into Agency CMBS pools. This guide describes the guarantee process, and how investors can evaluate the prepayment risk contained in the guaranteed bond classes.

Ginnie Mae Project CMBS Guide

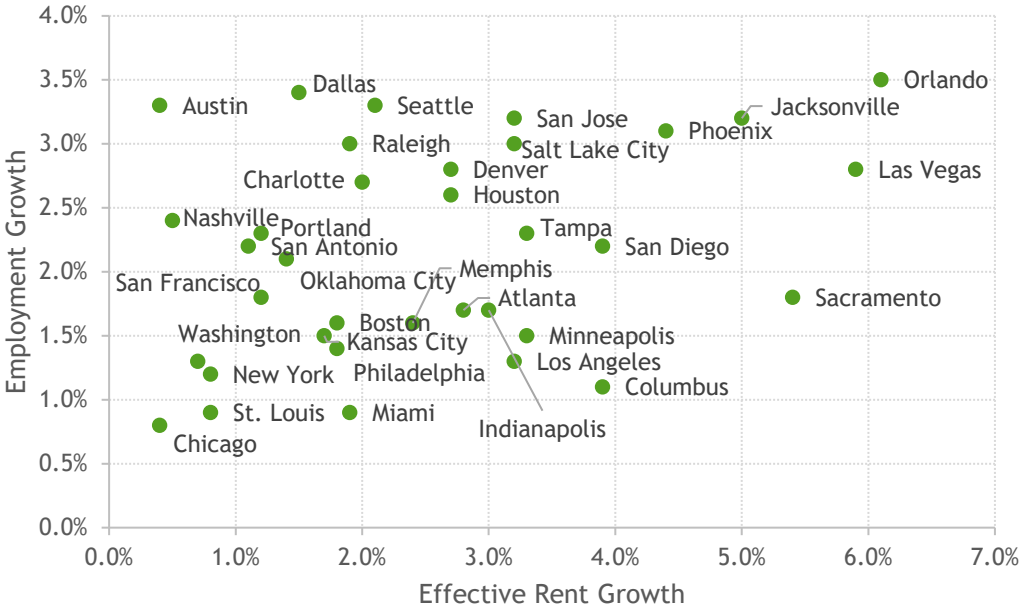
- Since 2007 there's been steady household demand in the U.S. domestic market for rental accommodation, but new supply only started to increase in 2012. Vacancy rates steadied over the past 24 months in most markets, but we expect ongoing demand to keep expanding multi-family revenues.
- To help fund multi-family development Ginnie Mae guarantees both construction and investment mortgages that are originated under the Federal Housing Administration or Agricultural Department housing programs. In this primer we describe how Ginnie Mae guarantees the loans to facilitate issuers creating low cost government guaranteed bond pools.
- Having a Ginnie Mae guarantee on 35 and 40 year FHA mortgages requires a prepayment/default analysis to estimate each bond class' expected weighted average life. The underlying multi-family loans all have some form of initial prepayment protection that is not guaranteed, but collected fees are allocated in bond structure. Historical prepayment performance shows prepayments usually exceed 20% speeds as the penalty decreases or as borrowers tap equity, but this could slow as rates rise, and so this primer focuses on Ginnie Mae Project prepayment sensitivity.
- Ginnie Mae project bonds price with an initial 15% CPJ speed; which has recently created spreads 50bp wider than Fannie Mae and Freddie Macs' Agency CMBS which have shorter loans and more certain repayment windows. Our concluding WAL/yield sensitivity suggests Ginnie project loans are currently being priced to "worst" case prepayment speeds and represent potential relative value for investors who can take the additional repayment window uncertainty.

Employment Growth Continues To Feed Multi-Family Fundamentals

Employment growth continues to feed rental demand at higher than expected levels.

In our last primer on Freddie K CMBS[1], we highlighted how strong growth in GDP, employment and household formation had been driving multi-family demand and how the residential rental market had failed to keep pace. Since then the October nonfarm payroll number came in with 250,000 new jobs, which should further drive household formation and rental housing demand. In Exhibit 1 we display the city annual employment change versus multi-family rental growth to demonstrate the strong correlation.

Exhibit 1. U.S. Multi-family Unit Supply, Absorption & Supply Growth



Source: NKF Research, US Bureau of Labor Statistics 2nd quarter 2018.

The correlation in Exhibit 1 is hardly one for one, as each market has a difference lag and can be adding inventory ahead of its growth or trailing depending upon municipal planning restrictions and other factors. In some markets supply has been meeting or exceeding demand, but many markets supply is still restricted by a building site supply and ongoing shortage of construction supplies and workers. In our Freddie K primer we showed how these restrictions have kept overall U.S. multi-family supply well below 2% since 2000. At this supply pace multi-family vacancy rates have decrease from 8% in 2009 to recently touch 5%. October's additional 250,000 jobs suggests that the pace of vacancy tightening should continue at least through the end of 2018. If one considers a potential recession downside the resulting job loss could

[1] Freddie K CMBS Guide, Darrell Wheeler Cantor Fitzgerald, November 1st, 2018.

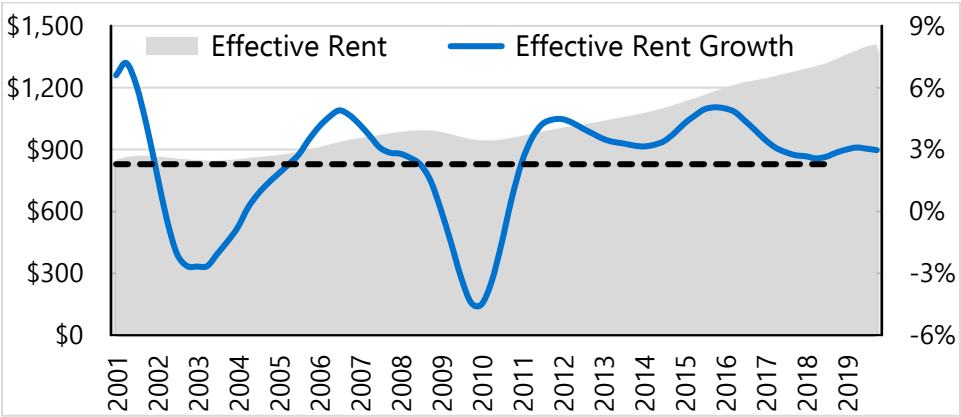
increase these vacancy rates, but it would have to be a very significant reversal before multi-family vacancy levels exceeded 6 or 7%.

Families may be more inclined to select rental accommodation for flexibility.

Beyond employment growth there are several factors supporting demand including high levels of student debt and a household inclination post 2007 to maintain career flexibility by renting. Rental demand is likely further enhanced by 2018 tax reform which reduced the tax deduction for mortgage interest on principal balances above $500,000 and limited property tax deductions to $10,000. Combine the tax reform change with the recent run-up in mortgages rates and there is a strong case that rental demand is receiving a new push relative to demand that may have traditionally been added by employment gains.

These fundamentals have increased multi-family rental rates by more than 3% since 2013 which is greater than the 2.3% long-term growth rate. In Exhibit 2 we use Newmark's latest multi-family forecast showing that revenue should continue to growth at 3%.

Exhibit 2. U.S. Multi-family Rental Rate ($/month) & Growth



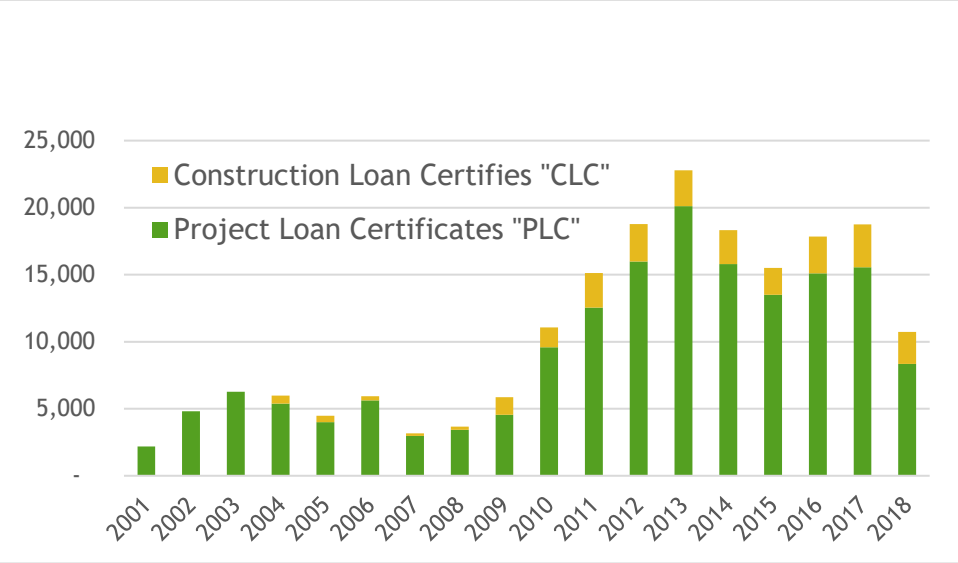
Source: NKF Research, Axiometrics

The multi-family effective rent growth rate during the 2001 and 2008 recessions decreased by only 3 to 5% for a period less than 2 years. To envision the next potential recession we could combine one of these brief 3 to 5% rental deceases with the last recession's 3% vacancy increase and conclude multi-family has 15% of revenue downside which relative to many other property types is fairly strong stability. ***In fact major tenancy loss events rarely happen to stabilized multi-family properties which is why there has been only limited multi-family collateral defaults, which provides an ideal collateral type for late cycle investment.*** To help investors evaluate exposure to multi-family this primer describes how this stable collateral is combined with Ginnie Mae's guarantee to create collateralized government guarantee bonds.

Agency CMBS Support Multi-family Financing and Create Stable Bond Cash Flows

The previous multi-family fundamentals section outlined how supply has been challenged to meet supply creating rental inflation. To maintain a growing and strong economy a primary government goal is creating a balanced and affordable housing market in all regions of country. To assist in this effort Ginnie Mae's mission includes "ensuring decent rental units remain accessible". Ginnie Mae supports housing efforts by guaranteeing 35 and 40 year housing loans created from government programs for both multi-family development and investment. Exhibit 3 shows Ginnie Mae' significant involvement guaranteeing construction loans (CLC) and stabilized property loans (PLC).

Exhibit 3. Ginnie Mae Project Loan Activity ($MM)



Source: Intex Data Solutions

Applying Ginnie Mae's guarantee lowers the long-term funding costs for many new developments and ensures a variety of government policy housing loans are funded. For investors the resulting bonds benefit from a Ginnie Mae guarantee on each loan's interest and principal stream along with providing an initial period of prepayment loan lockout while paying out any non guaranteed prepayment fees that are collected. In this primer we describe the various features of Ginnie Mae guaranteed mortgages and the various key features investors should understand to anticipate the repayment of related bonds. As concerns arise over the length of the economic cycle we expect Ginnie Project bond investors will benefit from having multi-family mortgage collateral supported by Ginnie's Federal loan guarantee. In fact all three Agency sponsored CMBS types have different value features that investors should consider in building a diversified fixed-income portfolio (which we summarize in Appendix A).

Ginnie Mae Converts FHA Originated Multi-family Loans to REMICs

The Government National Mortgage Association (Ginnie Mae) is part of the Department of Housing and Urban Development (HUD), which means their program is the most direct U.S. Government guarantee for multi-family bond issuance. Ginnie Mae has been supporting multi-family lenders since 1972, and over the ensuing years has guaranteed >$290 billion of multi-family loans. Ginnie-Mae's participation is simple as they reinsure already federally guarantee loans created by Federal Housing Administration by (FHA) approved mortgage originators. ***Thus the FHA underwrites and guarantees the loan under one of its housing policy driven programs and Ginnie Mae is just a second insurer with no direct involvement as an originator or as an issuer***. A small number of these loans are also rural rental housing loans guaranteed by RD under Title V of the 1949 Housing Act to facilitate Rural Development Housing and Community Facilities Programs. The resulting loans support the full range of multi-family: low and moderate income multi-family, nursing homes, assisted living, condominiums, cooperatives, rural development, and even hospital and health care centers.

FHA loans provide very long funding terms and Ginnie Mae's guarantee removes investment credit concerns.

Each loan is underwritten based upon the relevant section of the National Housing Act and then sized in line with the limitations of the specific referenced program section. These loan sections have been created to serve a variety of social and housing needs in urban renewal (section 220), new development (section 207, 221(d)(4)), serve the elderly (section 231), or just provide low cost funding for rentals (section 207, 223 (a)(7)). To provide the most benefit via long term funding the loans usually have 35 or 40 year terms with full amortization. Initially the loans have some form of prepayment protection; recent issuance mostly starts with a 10% prepayment fee that declines 1%/year. Loans may also have a steady 10% fixed fee for several years before beginning the 1%/year decline, but could also start at 5% and decline to 1% by end of Year 5. ***These prepayment terms are meant to discourage initial repayment, but as the fees decline below 5% there can be significant prepayments after just a few years of seasoning.***

In order to be included in a Ginnie-guaranteed security each mortgage note must have been endorsed by either the FHA or Rural Development using their Form RD 3565-4 note guarantee. These guaranteed loans are certificated into single mortgage pass-through Project Loan Certificates (PLC) or Construction Loan Certificate (CLC). Pools generally contain up to 30% CLC loan certificates, as the FHA is financing a significant amount of new construction. After their respective construction period is complete, these CLC certificates convert to PLC loan certificates with the same term and rate within the REMIC. The underlying loans benefit from Federal government guarantee, but in a default the FHA guarantee

would not cover an assignment fee and only guarantees interest at the FHA debenture rate. Similarly, the rural loans are only guaranteed by the Agricultural department for 90% of interest and principal. These initial guarantees will limit losses as it gives the servicer of a defaulted mortgage the option of assigning the mortgage to FHA or RF, forbear or foreclose and convey the mortgage. ***These limitations are why it is important to have the Ginnie Mae guarantee effectively cover the assignment fee that may have been lost, cover other default costs, and backstop the timely payment of the full mortgage interest and principal***. In other words no matter what decision the servicer makes on a defaulted loan the Ginnie Guarantee is meant to ensure that mortgage interest is paid the following month or that full principal is paid out. **This limits the required bond analysis to how prepayments and defaults (now effectively involuntary prepayments) may affect a bond class's weighted average life.**

Before the launch of the Ginnie Mae REMIC in 2001, Ginnie Mae guaranteed loans were securitized using Fannie Mae's REMIC shelf. But since 2001 Issuers have formed project loan pool securities under Ginnie Mae I MBS Program using the GNR shelf. Pools typically contain both PLC and CLC guarantee certificates creating diversified multi-loan pools with as many as 100 loans in a pool. The Issuer receives the difference between the mortgage pool interest rate and securities interest rate as a servicing fee. The Issuer uses this fee to pay servicing costs, costs of managing the pool, and to pay Ginnie Mae's Guarantee fee which is usually 13bp. No other fee is to be charged by the issuer to the mortgagor. This Issuer servicing strip is supposed to be at least 25bp but not more than 50bp (without Ginnie Mae permission).

Pools generally may contain as many as 30% CLC loan certificates, as the FHA is financing a significant amount of new construction. These CLC certificates convert to PLC loan certificates with the same rate and term as the original CLC. The resulting pooled loans are sequentially time tranched, with targeted planned payment classes, an IO, and even a Z interest accrual class. The accrual Z class helps create shorter term classes from 35 and 40 year fully amortizing mortgage loans. In Exhibit 4 we show a typical pool and how it is structured into sequential pay and *pro rata* bond classes.

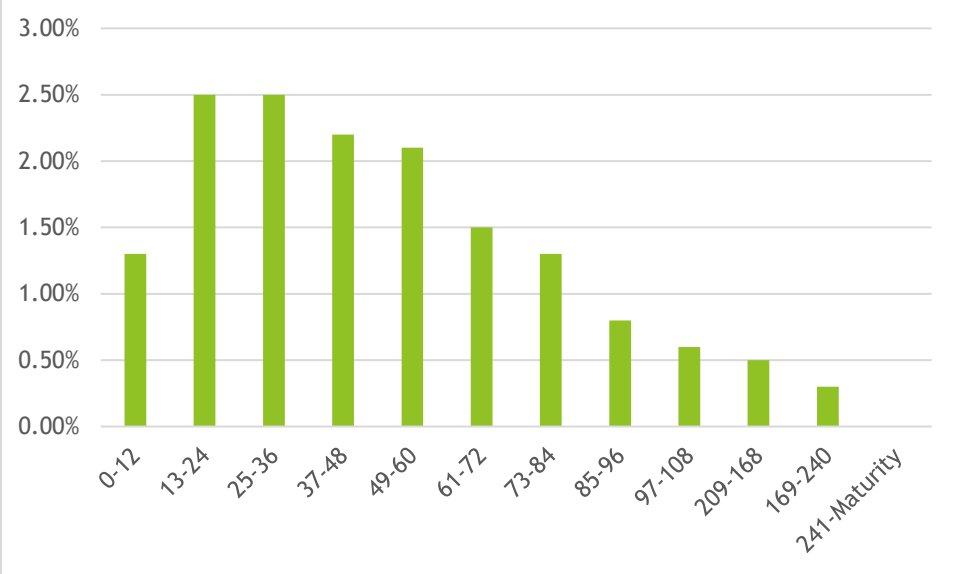
Exhibit 4. GNR 2018-119 REMIC Bond Structure

Class	Original Balance	Guarantee*	Rate (%)	WAL (Years)	Original Maturity	Principal Type
A	25,500,000	Y	2.90	2.90	6/16/51	SEQ
AB	5,000,000	Y	3.10	3.10	4/16/52	SEQ
AC	100,000,000	Y	3.15	3.10	4/16/52	W, SEQ
AE	10,000,000	Y	3.25	3.99	3/16/59	W, SEQ
AG	35,884,000	Y	3.25	3.00	11/16/51	W, SEQ
BA	6,337,000	Y	3.15	10.10	5/16/59	W, SEQ
BC	20,537,000	Y	3.15	10.64	5/16/59	W, SEQ
BD	7,929,000	Y	3.15	10.36	6/16/59	W, SEQ
B	35,184,000	Y	3.15	10.51	5/16/59	EX, W, SEQ
CA	381,000	Y	3.15	13.32	5/16/59	W, SEQ
VA	4,764,000	Y	2.50	8.91	9/16/35	SEQ
Z	9,012,347	Y	2.50	19.54	5/16/60	Z
IO	225,344,347	N	0.76	5.05	5/16/60	NTL(PT)

Source: Bloomberg, *Loan guarantee for interest and principal, but repayment timing is dependent of voluntary and involuntary prepayments.

In reviewing multiple transactions we can generalize that while every bond structure is different they tend to create sequential pay bond classes by allocating principal *pari passu* to bond class groupings, each of which have a sequential priority. This usually creates a bond grouping less than 5 years (the A classes above), just inside of 10 years (the B classes above), and then longer than ten years as we see above with the 13.3 year CA class. Note that not every GNR issue uses this A, B, C class time sequencing convention. After the prorated pay waterfall is complete class VA and then class Z receive principal. Any prepayment fees collected are allocated to the IO class in the following month. At issuance this *pari passu* sequential structure can be customized to match investor demand with each class pricing at small discount to par based upon a "15% CPJ" speed which is a prepayment vector that combines a front loaded default vector with a 15% post lockout prepayment assumption. In Exhibit 5 we show the project loan default curve component of the CPJ calculation.

Exhibit 5. Project Loan Default Vector



Source: Bloomberg and Cantor Fitzgerald

15% CPJ embeds immediate defaults, just in case we are entering a recession…

The annual default rates in Exhibit 5 are very front end loaded as though the pool immediately entered a recession and reached levels exceeding the 2007-2010 recession. But this 15% CPJ convention has been used for decades for pricing project loans and is reportedly based upon the study of project loans from 1988 to 1993. Combining that heavy default rate with a 15% post lockout rate creates a prepayment pricing speed that participants view as hitting the initial period for credit risks, while allowing for prepayments that happen after that initial period default risk transitions as the pool becomes a seasoned loan pool. Market participants would also suggest some of this seasoning multi-family prepayment activity simply just happens after a few years as borrowers refinance to take out funds or just to fund necessary property maintenance. ***But no matter the reason the market starts from this 15% CPJ pricing assumption, and then generally considers how project bond classes will respond to a variety of CPJ speeds***. In Exhibit 6 we summarize absolute speeds for various project loan vintages and do see that after just a few years of seasoning many vintages have a recent 12 month CPR greater than 14% and lifetime rates that effectively exceed 22%.

Exhibit 6. Ginnie Mae Project Loan Speeds

	Balance ($MM)		WAC %		CLC %		Historic Prepay Speeds (%CPR)	
Year	Orig	Curr	Orig	Curr	Orig	Curr	12 Mnth	Lifetime
2001	2,187	14	7.461	7.394	0.0	0.0	**14.7**	**25.1**
2002	4,819	29	7.165	7.291	0.0	0.0	**12.3**	**24.7**
2003	6,257	160	6.146	5.646	0.0	0.0	**6.8**	**21.4**
2004	5,974	176	5.911	5.692	9.8	0.0	**21.8**	**22.2**
2005	4,482	194	5.673	5.501	10.6	0.0	**14.4**	**21.0**
2006	5,942	242	5.848	5.808	5.6	0.0	**14.9**	**22.6**
2007	3,166	180	5.912	5.974	6.0	0.0	**21.5**	**23.0**
2008	3,674	232	6.055	6.706	6.8	0.0	**18.7**	**23.9**
2009	5,858	291	5.808	5.678	22.5	0.0	**13.7**	**29.0**
2010	11,057	1,185	4.893	4.443	13.4	0.0	**15.0**	**24.4**
2011	15,118	4,217	4.429	4.077	17.0	0.2	**15.6**	**15.5**
2012	18,776	10,213	3.625	3.245	14.9	0.1	**9.3**	**8.1**
2013	22,796	16,007	3.275	3.112	11.8	0.0	**4.8**	**4.9**
2014	18,329	11,231	4.030	3.852	13.8	0.1	**7.5**	**9.7**
2015	15,496	11,911	3.803	3.693	12.9	0.2	**5.3**	**6.2**
2016	17,852	16,261	3.638	3.609	15.5	2.5	**2.2**	**2.5**
2017	18,742	18,315	3.543	3.540	17.1	10.2	**0.2**	**0.3**
2018	10,738	10,672	3.638	3.639	22.4	21.5	**0.0**	**0.1**

Source: Intex Data Solutions

Historical prepayments reach and exceed 14% for many vintages.

As one would expect recent vintage prepayment speeds are slower as borrowers have just undertaken the time and expense of obtaining a new loan. ***But the table shows how seasoning is the largest determinant of prepayments; vintages as recent as 2014 (which have similar coupons to today's mortgages) are already close to 10% lifetime CPR, while the 2015 vintage is already experiencing a 6% lifetime CPR after only 3 years***. These historical numbers suggest near term high single digit speeds and longer life time term speeds of 14 to 29%, yet the current expectations of a higher rate environment has the market assuming CPJ speeds slower than these historical speeds for worst case extension scenarios. To implement this worst case speed approach project bond investors vary their speed assumptions with an eye to vintage mortgage coupon and bond tenure.

For instance on recent 2018 issuance investors are frequently considering bonds that have WALs in the next five years at speeds as slow as 5 to 10% CPJ, while longer term bond buyers are prepared to assume worst case speeds that exceeds 10% CPJ. *The speed analysis can affect any bond as even short bonds that start with a 3yr WAL will have only paid out a little over 50% of its principal balance by year 3, and will continue to have a significant portion of its*

principal paid out after year 3. ***Therefore, even for short duration bonds, it's still important to consider the impact of prepayment speeds beyond its original WAL.***

These slower prepayment speeds cause Ginnie project bond classes to extend, which decreases the bond yields as they price at a discount. To illustrate the impact of this type of speed analysis in Exhibit 7 we select the GNR 2018-140 transaction in Bloomberg and use bond values at a base 15% CPJ to establish a starting yield and WAL. Then in the right side of the table we use the SYT function to calculate yield and weighted average life at a 5%, 8%, 10%, 12% and 20% CPJ speed. ***We suggest looking at a band of varying speeds for bonds based on WAL, with the slowest speed in each band representing a worst case extension scenario.*** Investors should consider slower speeds for shorter bonds as those bonds have less time to realize prepayments early on in deal life and faster speeds for longer bonds as there is more time for the loans to season and reach CPJs closer to the historical lifetime data. For bond classes structured to be less than 3 years we would suggest investors use the 5-10% CPJ speed shown in the light green box in the top section of the table (with 5 CPJ representing a worst case). For longer term bonds we would focus on scenarios in the 10 to 20% CPJ red box in bottom right section of the table (with 10 CPJ representing a worst case). For bonds that have an intermediate 3.5 to 5 year expected WAL, we would suggest investors focus on an 8 to 12% CPJ results shown in the blue box (with 8 CPJ representing a worst case).

Exhibit 7. Yield and Weighted Average Life Sensitivity Using GNR 2018-140

GNR 2018-140			Blmbg Val/15% CPJ			5% CPJ		8% CPJ		10% CPJ		12% CPJ		20% CPJ	
Class	Balance ($MM)	Coupon	$Price	Yield (%)	WAL (yrs)	Yield (%)	WAL (yrs)	Yield (%)	WAL (yrs)	Yield (%)	WAL (yrs)	Yield (%)	WAL (yrs)	Yield (%)	WAL (yrs)
A	97.57	3.25	98.32	**3.841**	**2.99**	**3.548**	6.73	**3.635**	4.91	**3.694**	4.15	3.753	3.59	3.991	2.33
AB	5.00	3.15	97.26	**4.075**	**3.22**	**3.611**	7.26	**3.747**	5.30	**3.840**	4.48	3.934	3.88	4.315	2.51
AC	50.00	3.00	96.49	**4.139**	**3.50**	3.564	7.66	**3.732**	5.61	**3.847**	4.74	**3.963**	4.10	4.437	2.64
AE	10.00	3.25	97.09	**4.071**	**3.99**	3.674	8.87	**3.788**	6.58	**3.867**	5.57	**3.948**	4.82	4.282	3.09
B	29.92	3.20	90.14	**4.392**	**10.62**	3.886	22.22	4.015	17.36	**4.114**	14.88	**4.221**	12.89	**4.694**	8.12
BA	22.07	3.20	90.24	**4.409**	**10.31**	3.888	21.76	4.022	16.91	**4.124**	14.47	**4.234**	12.52	**4.716**	7.88
BC	6.61	3.20	89.34	**4.414**	**11.45**	3.917	23.47	4.040	18.59	**4.137**	16.00	**4.243**	13.89	**4.719**	8.75
CA	0.39	3.20	87.50	**4.475**	**13.29**	4.000	25.78	4.114	20.96	**4.203**	18.33	**4.303**	16.07	**4.783**	10.16
CB	0.85	3.20	89.73	**4.413**	**10.94**	3.905	22.73	4.032	17.85	**4.132**	15.31	**4.240**	13.27	**4.719**	8.36
VA	4.33	2.50	90.29	**3.857**	**8.91**	3.836	9.10	3.836	9.10	3.836	9.10	3.836	9.10	3.974	8.02
Z	8.20	2.50	65.42	**4.789**	**19.51**	3.892	31.54	4.102	27.64	4.275	25.05	4.469	22.65	5.381	15.50
IO	205.02	0.65	6.86	**5.971**	**5.25**	4.839	11.01	4.766	8.45	4.919	7.24	5.231	6.31	7.787	4.07

Source: Bloomberg. Bloomberg-value as of 11/13 to demonstrate sensitivity. Value is not intended to reflect current market conditions.

Ginnie bond classes price with significant spread to account for the WAL volatility that comes with the longer loans.

These are not hard and fast rules and investors should consider the collateral and the likelihood that loans may extend or immediately default. But the sensitivity shows that the shorter A bond classes could extend just over a year at 10% CPJ and as much as 4 years of the very slow 5% CPJ speed. While the longer structured B and C bond classes could see their average life increase by 4 to 5 years. These moves could decrease yields on the shorter A classes by 15 to 46bp at a worst case 5% CPJ, while longer term classes lose up to 29bp of yield at 10% CPJ. ***The VA class shows only limited sensitivity as it only loses 2bp, while the IO and Z class show significant variability between the 10 and 20% CPJ speeds***. Each Ginnie deal is different and can have many more classes than the simple bond we used in our example. Yet ***if investors consider a variety of prepayment speeds the change in yield and WAL usually tells the bond story***.

Beyond our analysis the data suggests it is important to contemplate underlying mortgage coupons, seasoning, and potential loan performance in any project pool, and remain open to a full range of prepayment expectations to evaluate how any speed changes may affect returns for a specific bond class. We highlight this as most market participants seem to have accepted that higher rates will drive CPJ speed to the 5 to 10% range, yet ongoing economic growth could push speeds above 20%, a scenario few are pricing into their current bond analysis. So while many will focus on the slower speeds in Exhibit 7, we would stress that investors should be looking at the full spectrum or they may miss the upside that seems to especially exist in window uncertainty contained in the longer term Ginnie bond classes.

Ginnie Mae Relative Value – The Widest Guaranteed Spreads Available

Short and long Ginnie spreads are now more than 50bp back of other Agency CMBS.

In Exhibit 8 we look at a variety of guaranteed multi-family bond spreads and see that Ginnie Mae spreads are significantly wider than Fannie or Freddie's spreads (to compensate for the bond's prepayment window risk). At swaps plus 95bp the Ginnie 4 year spreads offer 54bp more than 7 year Fannie DUS, but would also compare to the short Freddie K A1 bond which recently was swaps plus 46bp (49bp of excess spread). Looking at the 10 year Ginnie spread of 116bp there appears to be 53bp of pickup on 10 year Freddie K bonds to allow for potential WAL changes. ***Given the potential prepayment sensitivity we saw in our earlier sensitivity analysis 53bp of spread is likely overcompensating for the 46bp of spread loss risk at a worst case we saw in the shorter bonds or the 29bp of spread risk that we saw in the longer bonds. If speeds are higher than that 10% CPJ rate this could be excess relative value, but only for investors that can take WAL risk.***

Exhibit 8. Agency CMBS Spreads (January 2015 - present)

Fannie Mae	1/2/15	1/8/16	2/12/16	7/1/16	1/6/17	4/7/17	7/7/17	9/29/17	1/5/18	6/29/18	11/13/18	2018 Change
7 Yr FNMA GeMS A2	41	70	83	66	53	42	45	47	40	34	41	1
7/6.5 DUS	48	75	87	68	53	44	48	43	40	34	41	1
10yr FNMA GeMS A2	47	88	100	85	70	62	68	65	52	54	63	11
10/9.5 DUS	58	93	115	94	76	67	68	64	55	55	64	9
Fannie SARM (DM)		75	72	56	53	39	42	39	35	27	43	8
Freddie Mac K												
10 Yr K A1	39	68	79	61	52	44	46	50	39	38	46	7
10 Yr K A2	44	84	97	77	68	62	63	63	50	52	63	13
10 Yr K AM				NA	75	70	71	71	60	59	69	9
10 Yr K B	165	355	485	325	250	235	175	170	155	155	170	15
10 Yr K C	245	485	735	540	425	350	275	280	230	200	210	-20
K X1 IO	155	230	275	260	200	155	145	125	100	90	105	5
K X3 IO	290	600	750	675	465	375	315	330	270	270	270	0
K10 Floater (DM)	NA	76	70	54	48	36	37	38	32	23	41	9
Ginnie Mae												
4 Yr GNR	120	110	115	105	80	80	85	85	85	90	95	10
7 Yr GNR	103	123	133	118	108	108	108	108	108	106	109	1
10 Yr GNR	113	126	138	123	113	113	110	110	110	110	116	6
Other Reference Spreads												
CMBS LCF 10 Year	100	129	**149**	104	78	89	88	83	85	91	90	5
CMBS LCF – 10 Yr GNR	-13	3	**11**	-19	-35	-24	-22	-27	-25	-19	-26	-1
10 Yr Treasury	2.12%	2.13%	1.75%	1.46%	2.42%	2.37%	2.39%	2.33%	2.48%	2.86%	3.16%	0.68%

Source: Bloomberg, Cantor Fitzgerald

Beyond the comparison with other Agency bonds, Ginnie investors should also consider a comparison with CMBS last cash flow bonds and other sectors. In Exhibit 8 we see that recent the four year Ginnie Mae class is now 5bp wider than the 10 year last cash flow CMBS super-senior bond spread. Looking back in the series, we see that Ginnie Mae 4 year spreads never moved more than 20bp and were significantly inside of the CMBS cash flow bond in early 2016 when investors were last worried about higher rates. Similarly during that period the 10 year Ginnie spread traded from swaps plus 113 to 138bp, while the last cash flow CMBS bond bumped out to swaps plus 149bp. ***That crisis result shows the stability benefit of buying Ginnie CMBS paper, yet the second last row of the table suggests Ginnies have now been 22 to 35 bp wider than CMBS since mid-2017.***

The market prices Ginnie bonds at a slow repayment rates and yet economic growth or a recession could drive up prepayments.

Overall Ginnie Mae bonds currently offer wider spreads to CMBS and if there is an economic crisis will benefit from any resulting defaults which Ginnie Mae's guarantee would convert to prepayments. Historically that guarantee has caused these bond to trade inside of CMBS, but offer extra spread relative to Freddie and Fannie multi-family bonds that have a more certain repayment window. Given the current 50bp plus differential with similar weighted average Freddie and Fannie bonds the market appears to be over-anticipating how much slowing prepayments could erode the Ginnie bonds' yield advantage. ***Beyond the recessionary protection provided by Ginnie's guarantee, we should also mention that if the economy keeps growing then multi-family property will appreciate which could also increase prepayments towards the historical rates in Exhibit 6.***

Appendix A. Summary - CMBS Multi-Family Bond Exposures

Product	GNR	Fannie Mae DUS GeMS	Freddie Mac K	Conduit CMBS
2017 Issuance/ Outstanding	**$8.6B/$105.8 billion**	**$65.4B / $274.5B**	**$73.2B/ $286B**	**$6.52B/45.56B (Multi-family only)**
Collateral Description	Multi-family or senior housing loans originated by a Fair Housing Act "FHA" approved lender that are insured by FHA or the Department of Agriculture Rural Housing Service. Loans have 35 or 40 year terms with full amortization and are on either stabilized multi-family properties (Project loan Commitments "PLC") or Construction Loan Commitments (CLC).	30 approved Delegated Underwriters & Servicers create individual property loan pass through certificates that settle after 30 to 45 days (DUS MBS). DUS lenders originate the loans without Fannie Mae preapproval as they service the loan and share in its first loss. Loans are prepayable usually with a yield maintenance penalty.	22 Seller/Servicers create $5-100 million nonrecourse loans that are subject to Freddie credit approval. Loans usually have initial 2 year lockout followed by defeasance period ending 3 months prior to the maturity date. Loans can incur future subordinate debt subject to DSCR and LTV tests. Floating-rate loans usually have 1 year lockout and 1% prepayment penalty.	Fixed-rate Multi-loan CMBS pools usually contain 10 - 30% multi-family exposure, which diversifies the pool's property type specific risk. Most loans are 10 year fixed-rate loans with a 9.75 year prepayment protection from defeasance or yield maintenance.
Bond Structure	Ginnie Mae approved sponsors buy and pool FHA insured loans from originator/ issuers. Ginnie Mae guarantees timely payment of principal and interest. While collateral is locked out and has prepayment fees, there is no prepayment guarantee. Bond Classes are typically time tranched, have an IO and many other planned classes or even a Z interest accrual class.	GeMS deals are assembled from pooling the various pass through certificates and usually have a shorter and a longer class. Fannie guarantees full and timely payment of interest and principal. No guarantee on prepayment penalties, and loan yield maintenance may differ from required bond yield maintenance due to coupon basis and a final six month loan open period.	Freddie Mac guarantee on two senior time tranched classes, an AM and some IO classes. Guarantee covers timely interest payment, payment of principal at the maturity date of each loan, reimbursement of any realized losses and certain trust expenses and ultimate payment of principal by the assumed final distribution date. The non-guaranteed junior classes usually have credit enhancements of 10%, 7.5% and 0% and take losses sequentially.	All properties types are pooled, which dilutes multi-family property exposure. With no guarantee, losses are applied sequentially starting with the lowest credit class, while prepayments are applied to the senior shortest WAL *pari passu* triple-A rated classes and then sequentially down into the bond structure.
Loan Recovery Process	If a borrower misses a payment the issuer undertakes foreclosure and appropriate action which includes the collection of insurance and guaranty benefits. If this is insufficient to make the mortgage P&I payments then Ginnie Mae is responsible for the shortfall.	Fannie Mae guarantee of timely interest and principal causes them to remove loans from the pool for workout recovery while continuing to make the scheduled interest and principal payments until loan was scheduled to be open to prepayment. Originator shares loss with Fannie Mae.	Defaulted loan worked out within the trust subject to pooling and servicing agreement. Originators do not share in loss. If a defaulted loan reaches its maturity the principal guarantee pays principal to the guaranteed classes.	Loans are worked out within the trust by the special servicer subject to the pooling and servicing agreement.
Rating Agency Assessment	No rating required.	Given full guarantee of timely interest and principal, no rating required.	Senior guarantee levels are rated AAA and junior AM guarantee class can also receive a non-guarantee rating. Nonguaranteed classes are rated based on collateral and credit enhancement.	Levels justified by collateral leverage and credit enhancement.
Typical Ticker & Series Naming Convention	GNR-20yy-xx	FNA 20yy-Mxx	FREMF 20yy with - K5xx: 5 yr Loans K7xx: 7 yr Loans K0xx: 10 yr Loans K15xx: 12-15 yr Loans KFxx: Floating-Rate Loans	Program 20yy-Series
Information Sources	*Ginniemae.gov* or *Structuredginniemaes.ginnienet.com/multifam/*	*Fanniemae.com/port/funding-the-market/multi-family*	*https://fm-msia.com/*	
Risk Based Capital	0% RBC	20% RBC	20% RBC on guarantee Classes.	20% on AAA Super Senior Classes.

Source: Fannie Mae, Freddie Mac, and Ginnie Mae websites; CCRE.

DISCLAIMER

THIS IS NOT A RESEARCH REPORT. THE MATERIAL CONTAINTED HEREIN SHOULD BE CONSIDERED SALES AND TRADING COMMENTARY PREPARED FOR INSTITUTIONAL INVESTORS.

This material is intended for institutional investors only, and as such may not be disseminated, distributed, forwarded or otherwise disclosed to any other party that is not an institutional investor, as defined under the Financial Industry Regulatory Authority ("FINRA") Rule 2210(a)(4).

Cantor Fitzgerald & Co. is a member of FINRA and SIPC. While care has been taken in the preparation of the material presented herein, Cantor Fitzgerald & Co. and its affiliates (collectively, "Cantor") does not make any representations or warranties, express or implied, as to the accuracy, completeness, or appropriateness of the information contained herein. This document may contain forward-looking statements, which give current expectations of future activities and performance. Any or all forward-looking statements in this material may prove to be incorrect and such statements may be affected by inaccurate assumptions or by known or unknown risks and uncertainties. Cantor does not undertake any obligation to revise such forward-looking statements to reflect the occurrence of unanticipated events or changed circumstances.

Any commentary contained herein may or may not have been prepared by trading desk personnel, who receive compensation based upon various factors, including the overall profitability of Cantor. Cantor and its partners, officers, directors, or employees may sell to or purchase from customers securities, commodity futures, derivatives, or other financial instruments on a principal basis or as agent for another person, and may have interests different or adverse to the interests of the recipient of this communication. Cantor's representatives, other than the author of this communication, may provide oral or written market commentary or trading strategies to Cantor's clients that reflect opinions that are contrary to the opinions expressed in this communication. You are cautioned that there is no universally accepted method for analyzing financial instruments. Past performance is not indicative of future results. Further, Cantor does not guarantee any results and there is no guarantee as to the liquidity of the instruments described in this communication. As a matter of policy, Cantor does not give tax, accounting, regulatory or legal advice to clients, and the information contained herein should not be considered to constitute such advice. Cantor strongly urges that the recipient seek independent legal, regulatory, accounting and tax advice regarding the contents of this communication and make an independent determination regarding the suitability of any strategy or instrument identified herein. This document is not for distribution in the United Kingdom to persons who would be defined as private customers under the rules of the Financial Conduct Authority.

Cantor disclaims any and all liability for any loss that may arise from use of the information contained herein.