

VIEWPOINT

Credit Risk Transfer

PHILLIP A. DOMINGUEZ, CFA | APRIL 24, 2018

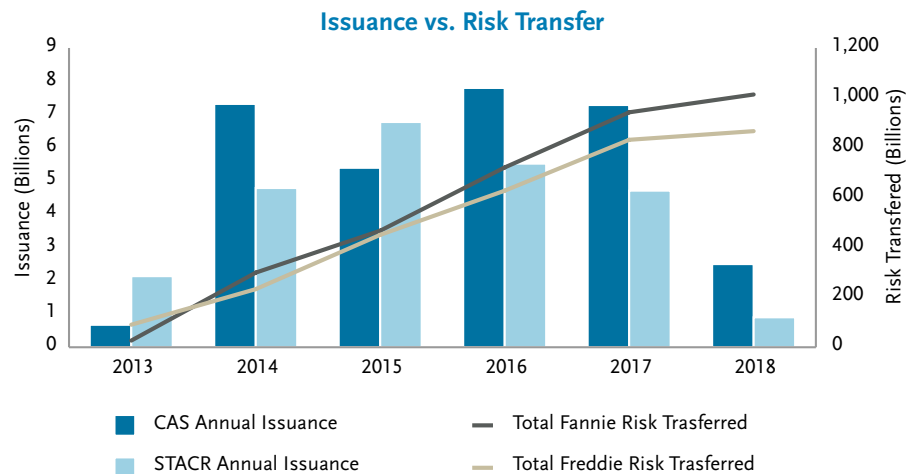
In 2013, the Federal Housing Finance Agency (FHFA) began its initiative to minimize the market footprint of Government Sponsored Enterprises (GSEs), Fannie Mae and Freddie Mac. With the goal to reduce the U.S. taxpayers’ exposure to defaults by transferring a portion of their mortgage credit risk to private investors, Fannie Mae and Freddie Mac introduced their Credit Risk Transfer (CRT) programs to the capital markets. While both Fannie Mae and Freddie Mac now have various programs to transfer risk, this paper is focused solely on their primary method for risk sharing. For Fannie Mae, that would be utilizing Connecticut Avenue Securities (CAS) and for Freddie Mac, Structured Agency Credit Risk (STACR).

The CRT asset class has grown steadily even as it has continued to evolve. Thus far, the GSEs have transferred credit risk on original mortgage balances of \$1.9 trillion and as a result the CAS and STACR asset class has grown to a market value of approximately \$42 billion. Why have Fannie Mae and Freddie Mac been so successful? First, since inception, both GSEs did an excellent job of educating investors about the CRT program and its objective. Along the way there have been program and structural changes, but these have always been announced with ample time for investors to get comfortable with the proposed changes. Second, the timing of the introduction was favorable. Since CAS and STACR were introduced in 2013, the economic backdrop of rising home prices, declining unemployment, and low mortgage rates has been supportive of the growing asset class.

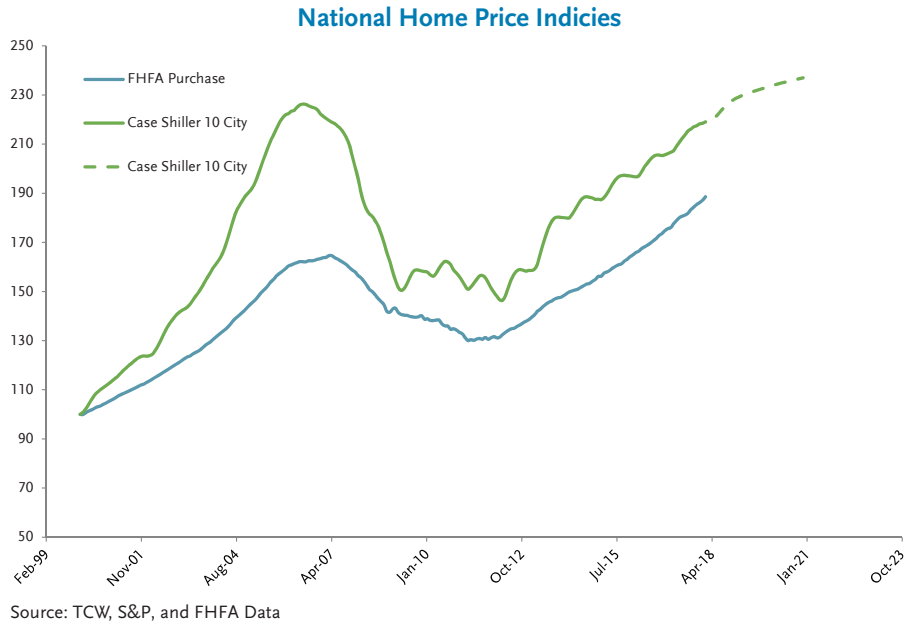


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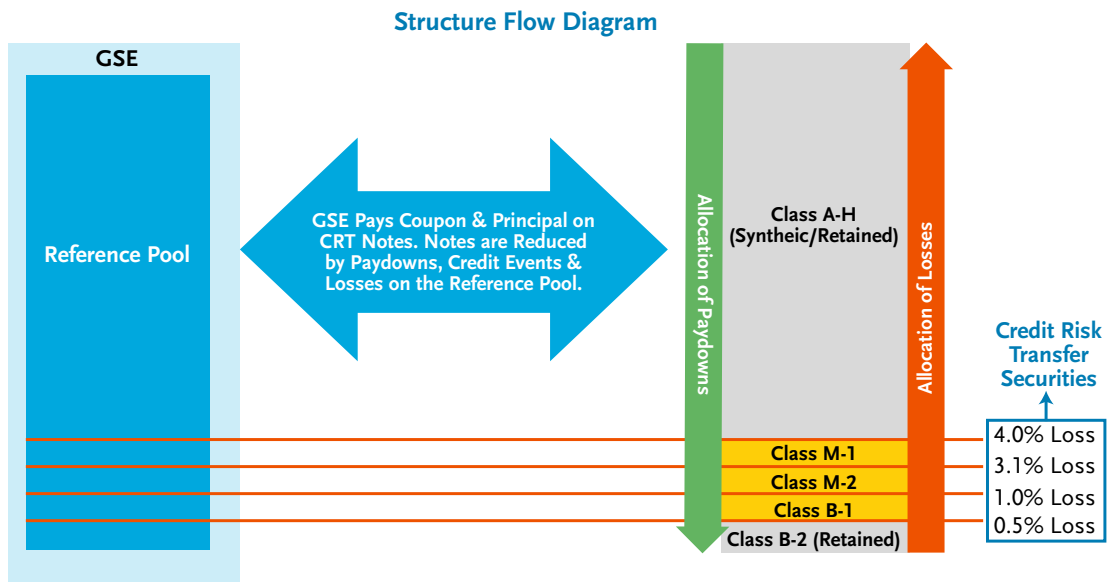


Source: Bloomberg and Citi



Structure

In their current form, CAS and STACR securities are considered debt obligations of Fannie Mae and Freddie MAC, with performance based off the pool of mortgages they reference. The GSEs pay the interest and principal on the CRT securities in exchange for the credit/loss protection they receive from investors. CRT has been a developing asset class over the last five years as the GSEs have made structural and program changes. However, two things have remained constant about the securities they sell to the private markets – low attachment points and thin tranches. For example, in the most recent Freddie low LTV deal, \$900mm STACR 2018-DNA1, the M1s attached at 3.1% and detached at 4%, the M2s attached at 1% and detached at 3.1% and the B1s attached at 0.5% and detached at 1% (0.5% credit enhancement and 50 bps of credit thickness). The M1s, M2s, and B1s priced at a spread or discount margin (dm) of 45dm, 180dm, and 315dm, respectively. The GSEs currently retain the first loss B2 tranche and the unfunded seniors but sell the other mezzanine tranches (M1s, M2s, B1s).



Source: TCW, Intex, and Freddie Mac

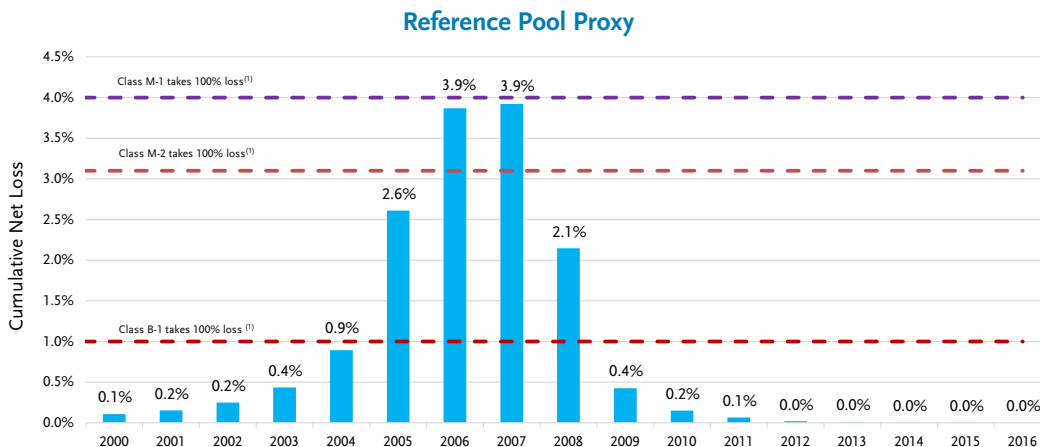
In the case of the M2 securities, investors are guaranteeing protection to the GSEs starting at 1% of losses on the mortgage pool for 180 bps of spread compensation and starting at 3.1% of losses for a mere 45 bps on the M1. On a blended basis this is only about 100 bps more than the spread in Agency MBS, which are considered “riskless” securities. Furthermore, the Agency MBS market is one of the most liquid and easily traded asset classes in all of U.S. fixed income, next to U.S. Treasuries. Not only is the market complacent in its required additional compensation to take on the first 4% credit risk in these pools but the 100 bps of premium to the Agency MBS market suggests very little to almost zero give in liquidity. Lastly, while one can make strong arguments that the credit risk within the CRT market is minimal because of the strong underwriting standards and strength of the housing market, it is critical to realize that investors are still highly exposed to the performance of the weakest “tail” of borrowers in the pool. Irrespective of the tight underwriting standards, during times of economic weakness and rising unemployment rates, payments do get missed and borrowers do default. This is part of the normal course of economic expansion and contraction. However, at these attachment points, the risk adjusted compensation paid to take on a significant amount of credit risk and illiquidity within the CRT market is not only very low on an absolute basis, but extremely low relative to assets with little to no credit risk and a much better liquidity profile. It is worth noting that the uncapped floating rate coupons of the CRT market offer a much better convexity profile relative to Agency MBS. Nonetheless, we view this as a small positive relative to the significantly larger credit and liquidity risks that come with investing in CRT.

In the mortgage credit sector, CRT offers structurally levered exposure to the housing market. But the thin tranches with low attachments create a risk-versus-return profile that is potentially binary. With this type of tranche structure, the margin for forecasting error is small and a slight fundamental scenario shift can drastically impact pricing. We saw a glimpse of this in September 2017, when Hurricanes Harvey and Irma hit parts of the Southern United States. Initial uncertainty about the resulting levels of delinquencies and losses reminded investors of the idiosyncratic risk in the asset class and adversely affected spreads and dealer sponsorship. While there had been periods of significant CRT spread widening in the past, this was the first time CRT fundamentals came into question. The re-pricing was most evident in CAS 2017-C06, the last deal to price at par prior to the hurricanes. As the storms approached and then began to inflict damage along the coast, the 1B1s and 2B1s traded wider and were quoted to spreads that equated to a price decline of 12-13% from par.

Deal: CAS 2017-C06					Deal Pricing		Hurricane Scenario Shift		Quarter End	
Tranche	Support (%)	Attachment Point	Detachment Point	Credit Thickness	8/15 Price	8/15 Spread	9/7 Price	9/7 Spread	9/29 Price	9/29 Spread
1M1	2.80	2.80	3.80	1.00	100	75	99	85	100	71
1M2	1.00	1.00	2.80	1.80	100	265	98	305	100	250
1B1	0.50	0.50	1.00	0.50	100	415	88	550	94	480
2M1	3.45	3.45	4.25	0.80	100	75	99	85	100	81
2M2	1.00	1.00	3.45	2.45	100	280	98	317	101	259
2B1	0.50	0.50	1.00	0.50	100	445	87	600	94	510

Source: TCW, Intex, and Bank of America

Ultimately, spreads recovered as the hurricanes brought less damage than expected and the GSEs enacted temporary modification programs for borrowers in FEMA disaster areas. However, witnessing this type of reaction, investors should ask what if the economy starts to weaken, borrowers start to miss payments and a real shift in fundamental assumptions occurs? How would the collateral perform and what kind of re-pricing could we expect? The market would not only quickly “connect the dots” of rising roll rates and delinquency trends, but it would also extrapolate from those dots a forecast for fundamental deterioration that extends well into the future. At the depth of the housing crisis, for instance, the market applied at least a two-times-loss multiple in base case pricing assumptions. For example, when delinquencies in subprime pools reached their peak of 45% to 50% in 2009, the market’s base case assumption was a cumulative liquidation of at least 90%-95%. We wouldn’t expect delinquencies to ever get close to that magnitude in CRT pools, given the underwriting, but we would expect to see similar market psychology and extrapolation. With this type of structural leverage, extrapolating merely from 2% to 4% would be significant in terms of a re-pricing. With every new deal, the GSEs provide an estimate of how different vintages of the same cohort of mortgages would have performed. Freddie Mac provided the proxy below for their first low LTV deal of the year, STACR 2018-DNA1.



Source: Freddie Mac

1 Assuming no principal payments. Net Losses are calculated as noted on the "Actual Loss Calculation" slide: Collateral Deficiency + Delinquent Interest + Expenses – MI Recoveries. Non MI Recoveries Freddie Mac data does not include bulk settlements. Assumes 35bps g-fee to calculate delinquent interest. Collateral Deficiency: Defaulted UPB – Net Sales Proceeds. Loans with Repurchase flag = Y have been set to zero loss. Data included in tables were derived from Freddie Mac's Single Family Loan Level Dataset (SF LLD) as of December 2017 refresh: Originations 1999-December 31, 2016. Performance data: 1999- June 30, 2017 losses reported for loans liquidated as of 1Q2017. Cumulative Losses do not include modification losses. Data is weighted in proportion to 2018-DNA1 FICO and LTV cohorts.

In the illustration below, similar cumulative loss estimates were used to back into prices for each of those years to recreate how the market would have priced these securities. For simplicity, the discount margin was kept constant across all years, even though the market expected a much wider credit risk and liquidity premium in some of those years. An example of the impact of extrapolation can be seen in the M2s off the 2004 collateral pool. While the M2s ended up being a 0% write down "money good" bond, in the midst of the financial crisis we estimate the base case market expectations would have priced in a 39% write down, equating to a \$71 price.

Actual Cumulative Losses

Class	Given	Solve For	Pricing	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
M1	45 dm	Price	100.00	100.00	100.00	100.00	100.00	100.00	100.00	51.01	51.01	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
		WAL	1.97	2.02	2.06	2.08	2.19	3.80	7.96	6.84	6.84	7.45	2.19	2.08	2.02	1.97	1.97	1.97	1.97	1.97
		Principal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	64.60	64.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Writedown (%)																		
M2	180 dm	Price	100.00	100.00	100.00	100.00	100.00	41.10	15.73	15.73	61.25	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
		WAL	6.62	6.93	7.16	7.31	7.82	10.29	7.76	4.03	4.03	9.62	7.82	7.31	6.93	6.62	6.62	6.62	6.62	6.62
		Principal	0.00	0.00	0.00	0.00	0.00	0.00	77.74	100.00	100.00	52.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Writedown (%)																		
B1	315 dm	Price	100.00	100.00	100.00	100.00	45.71	9.72	5.94	5.94	12.81	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
		WAL	12.37	12.48	12.48	12.48	12.48	8.43	1.91	1.18	1.18	2.51	12.48	12.48	12.48	12.37	12.37	12.37	12.37	12.37
		Principal	0.00	0.00	0.00	0.00	0.00	84.31	100.00	100.00	100.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Writedown (%)																		

Market Pricing

M1	45dm	Price	100.00	100.00	100.00	100.00	100.00	100.00	32.54	17.93	17.93	44.84	100.00	100.00	100.00	100.00	100.00	100.00	100.00
		WAL	1.97	2.08	2.17	2.23	2.73	7.17	4.47	2.54	2.54	6.06	2.73	2.23	2.08	1.97	1.97	1.97	1.97
		Principal	0.00	0.00	0.00	0.00	0.00	0.00	78.75	88.56	88.56	69.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Writedown (%)																	
M2	180dm	Price	100.00	100.00	100.00	100.00	100.00	71.87	10.13	5.53	5.53	13.90	100.00	100.00	100.00	100.00	100.00	100.00	100.00
		WAL	6.62	7.26	7.73	8.00	9.02	10.56	2.59	1.46	1.46	3.55	9.02	8.00	7.26	6.62	6.62	6.62	6.62
		Principal	0.00	0.00	0.00	0.00	0.00	39.37	100.00	100.00	100.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Writedown (%)																	
B1	315dm	Price	100.00	100.00	100.00	100.00	62.74	15.34	4.10	2.42	2.42	5.36	62.74	100.00	100.00	100.00	100.00	100.00	100.00
		WAL	12.37	12.48	12.48	12.48	9.96	3.01	0.83	0.50	0.50	1.07	9.96	12.48	12.48	12.37	12.37	12.37	12.37
		Principal	0.00	0.00	0.00	0.00	60.26	100.00	100.00	100.00	100.00	100.00	60.26	0.00	0.00	0.00	0.00	0.00	0.00
		Writedown (%)																	

Source: TCW, Intex, Freddie Mac

The non-green prices are the very tail scenarios for which CRT investors are providing protection to the GSEs. Given the binary re-pricing exhibited above in those years, it is difficult to see compelling value in underwriting the first 1%-4% of losses for that additional 100 bps of spread. It appears that investors are giving CRT a free pass today because it didn't exist during the great financial crisis but looking at the above scenario analysis one can easily see that its performance would have been no better than that of the legacy RMBS market.

Liquidity

Overall liquidity in the CRT market is a concern. The ability to transact in meaningful size continues to be challenging. For example, dealers' position sizes haven't increased since CRT's inception as dealers continue to actively make markets only in odd-lot sizes. The punitive capital requirements and the inherent spread volatility of the asset class make it costly and difficult for dealers to balance sheet sizable risk. Also, since CRT is TRACE eligible, every transaction is reported immediately to all market participants. While this increases transparency, it also handcuffs dealers' market making ability by making it difficult to build positions, trade out of positions and provide liquidity in volatile markets. In a market where a single TRACE print can move the market, dealers have been less willing to transact during volatile markets. Instead, they widen out bid/offer spreads. This stands in contrast to the legacy RMBS market where dealers are still willing to transact and provide market contextual bids during these same periods of volatility. This is because the absence of TRACE reporting gives them cover to opportunistically position and move risk.

The aggregate available balance sheet across the 12 dealers that trade CRT is estimated at approximately \$600mm. In comparison, the eight primary dealers that trade legacy RMBS each have at least \$1bn of available balance sheet. All of this makes trading in size in CRT (> \$30mm) difficult. Even in normal functioning markets, trading sizable pieces requires paying a premium for liquidity or a dealer having to syndicate out the risk. Currently, liquidity provided by dealers is more market share focused than P&L driven. Fannie Mae and Freddie Mac, who have been programmatic issuers, factor in market share for awarding dealers new issue mandates and underwriting fees. However, both GSEs have communicated that if their CAS or STACR issuance windows are accompanied by heightened market volatility and spread widening, they would consider utilizing one of their other avenues for risk sharing. What if that occurred for an extended period, putting the future stream of new issue underwriting fees into question? In this scenario, dealers would be less willing than they are today to be the liquidity providers. Given this framework, we are cautious about the ability to find liquidity in a market landscape that includes either risk aversion or uncertainty in housing fundamentals, or both.

Conclusion

With a programmatic new issue market, CRT is one of the easiest ways to gain levered exposure to the housing market; however, the reward relative to the risk is highly unfavorable, especially at this late point in the economic cycle. Housing and economic fundamentals have remained solid since the inception of the asset class, contributing to the performance and growth of CAS and STACR; however, it is important to remember that while the housing market has benefited from the post crisis re-leveraging stage of the cycle, it will not be immune to the end of cycle de-leveraging that always ensues. In fact, there are growing uncertainties fundamentally as interest rates rise while wage growth has thus far been anemic. Affordability metrics such as price-to-income ratios in certain parts of the country are starting to suggest that home prices could potentially be at risk of either a slowdown or in some cases a correction to the downside. Meanwhile, we are now 10 years removed from the great financial crisis, one of the longest post-recessionary recoveries on record. Asset prices have appreciated significantly over those 10 years and to comfortably invest in the CRT market, one must assume that the current landscape would continue for another five to 10 years. At current spreads, investors should re-evaluate if they are truly getting compensated enough to own a potentially binary risk profile that is levered to the performance of the weakest "tail" of borrowers. They say that the doorway in a crowded hallway always feels too small, but in this case if fundamentals turn, there may not be a doorway at all. ■

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