

# Credit Risk Transfer

## *A Fork in the Road*

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# Abstract

The Fannie Mae and Freddie Mac credit risk transfer (CRT) programs have been a huge success. Starting in 2013, the government-sponsored enterprises (GSEs) have transferred the risk on increasing amounts of reference collateral. But rising interest rates and declining origination volumes suggest that, over the next few years, the GSEs will struggle to keep CRT volumes flat. This will require the GSEs to choose between increasing their capital markets transactions and increasing CRT at the point of acquisition. Moreover, although we believe the GSEs will continue to broaden their offerings, the growth in the market is likely to come from outside GSE space. We have already seen a notable expansion in CRT by the mortgage insurance companies and could eventually see trading in CRT indexes and the emergence of CRT issuance by banks, should they get capital relief.

One of the lessons of the crisis was that too much risk relative to required capital was concentrated in the government-sponsored enterprises (GSEs), Fannie Mae and Freddie Mac. In the years since, their regulator, the Federal Housing Finance Agency (FHFA), has focused on laying off a considerable share of the credit risk that the GSEs take into the private market through what has come to be known as the credit risk transfer (CRT) program. The groundwork for this program was laid in 2012, under acting FHFA director Ed DeMarco, with the first “Strategic Plan for Enterprise Conservatorships.” The program was seen as a way to contract the GSEs’ footprint in the market by allowing private investors to bear some or all of the credit risk (FHFA 2012). In 2014, under FHFA director Mel Watt, the emphasis was on “shift[ing] risk to private market participants and away from the enterprises in a responsible way that does not reduce liquidity or adversely impact the availability of mortgage credit” (FHFA 2014).

The CRT program has been a huge success and has grown rapidly since program inception in 2013, with the GSEs transferring the risk on an ever-larger amount of reference collateral each year. As the program has grown, the number of risk sharing structures has increased. In addition to Fannie Mae’s Connecticut Avenue Securities (CAS) program and Freddie Mac’s Structured Agency Credit Risk (STACR) program, credit risk transfer programs include reinsurance coverage done after the acquisition of the credit risk, as well as front-end transactions, in which the credit risk is transferred at collateral acquisition.

This rapid expansion of volume to date is not apt to continue because of rising interest rates and declining origination volumes,. Although the GSEs can compensate for some of this loss of volume by transferring more of the risk on loans already targeted for risk transfer or expanding the types of loans that could be considered, these steps would likely be insufficient or just barely sufficient to compensate for the decline in refinancing activity, let alone allow for continued volume growth.

Although we are confident the GSEs will continue to refine and innovate their offerings, we believe the future growth of credit risk transfer volume lies outside the GSE space. We have already seen a notable expansion in CRT by the mortgage insurance (MI) companies, and we could eventually see trading in CRT indexes and the emergence of CRT

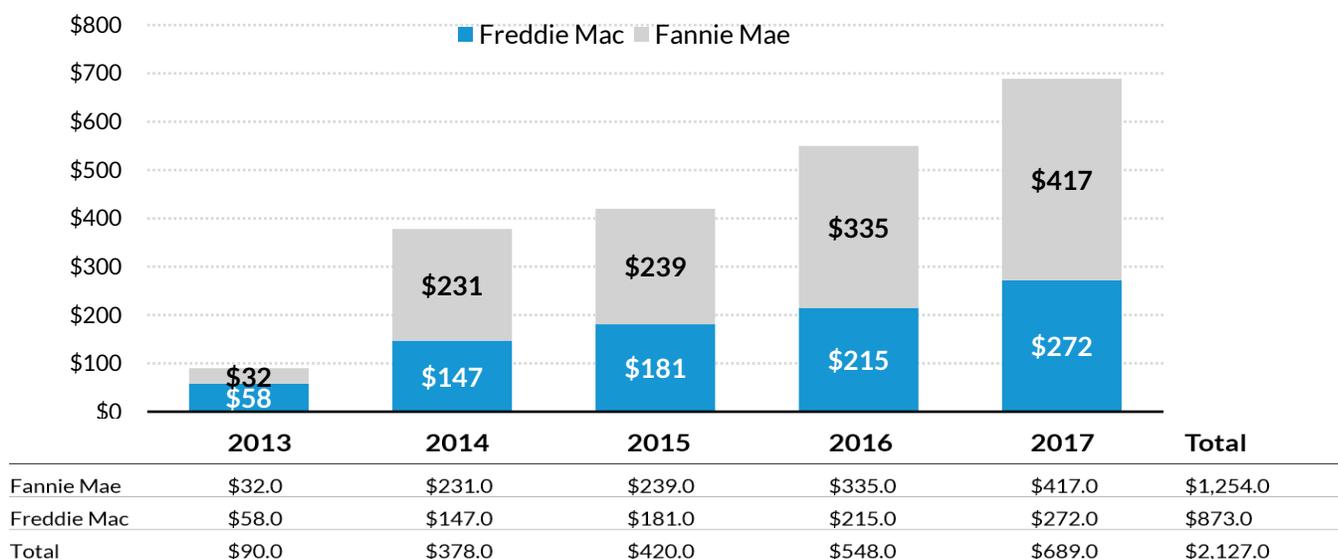
issuance by banks, should they get capital relief. The market outside the GSE channel shows more potential for expansion.

## Quantifying the Growth and Outlook for the GSE CRT Business

In 2012, the FHFA introduced the notion that Fannie Mae and Freddie Mac should reduce their overall credit risk, and reduce the risk they pose to taxpayers while they are in conservatorship, by laying off the risk from the GSEs onto the private market. Fannie Mae and Freddie Mac implemented CRT programs in 2013; exhibit 1 shows their evolution. In 2013, the GSEs transferred part of the credit risk on \$90 billion of unpaid principal balance on mortgage loans. By 2017, this had increased to \$689 billion. Cumulatively, the GSEs have transferred part of the credit risk on \$2.1 trillion of acquisitions (\$1.25 trillion from Fannie Mae and \$873 billion from Freddie Mac). As of the end of 2017, the transferred credit risk has a combined risk in force of about \$69 billion, or 3.26 percent of the unpaid principal balance. Stated differently, the GSEs have obtained coverage for up to 3.26 percent of losses on the \$2.1 trillion of covered mortgage loans. This is a significant amount of mortgage risk in a sector where Basel capital standards traditionally assigned 4 percent capital requirements.

## Exhibit 1: Credit Risk Transfer Programs 2013–17

Enterprise single-family mortgage CRT activity; reference pool UPB, \$billions



**Sources:** December 2017 Federal Housing Finance Agency single-family CRT progress report and the Urban Institute.

**Note:** CRT = credit risk transfer; UPB = unpaid principal balance.

The growth has occurred because of continuous program innovation. Initially, back-end CRT included only collateral with a loan-to-value (LTV) ratio between 60.01 and 80 percent. This was quickly expanded to loans with LTV ratios greater than 80 percent. The early transactions had a 10-year final maturity and were based on a preset severity schedule. Since 2015, transactions have had a 12.5-year final maturity and have been based on actual losses, allowing the GSEs to better offset their credit risk. Initially, the GSEs sold only the mezzanine tranches. Now, they are selling the first-loss tranches. They have experimented with the collateral buckets such as Home Affordable Refinance Program loans, 15-year collateral, and senior-subordinate structures for non-TBA (to-be-announced) collateral. The program has also grown to include CRT at origination (front-end structures), such as lender recourse, MI pool policies, forward reinsurance, and other MI alternatives. The GSEs have also shortened the lag between mortgage issuance and CRT. Finkelstein, Strzodka, and Vickery (2018) point out that for the recent CRT reference pool, loan age at origination averages only 4 to 6 months, down sharply from more than 12 months at program inception.

And the innovation continues. To obtain more favorable regulatory and tax treatment of foreign investors and for real estate investment trusts, the GSEs have announced that future deals will be done using a re-REMIC structure rather than as a structured debt issuance.<sup>1</sup> To make this change, they must make a REMIC election on the underlying mortgage loans. Fannie Mae made its election as of May 1, 2018, which should facilitate the use of the REMIC structure by late 2018 or early 2019. Freddie Mac will make the election as of July 2018.

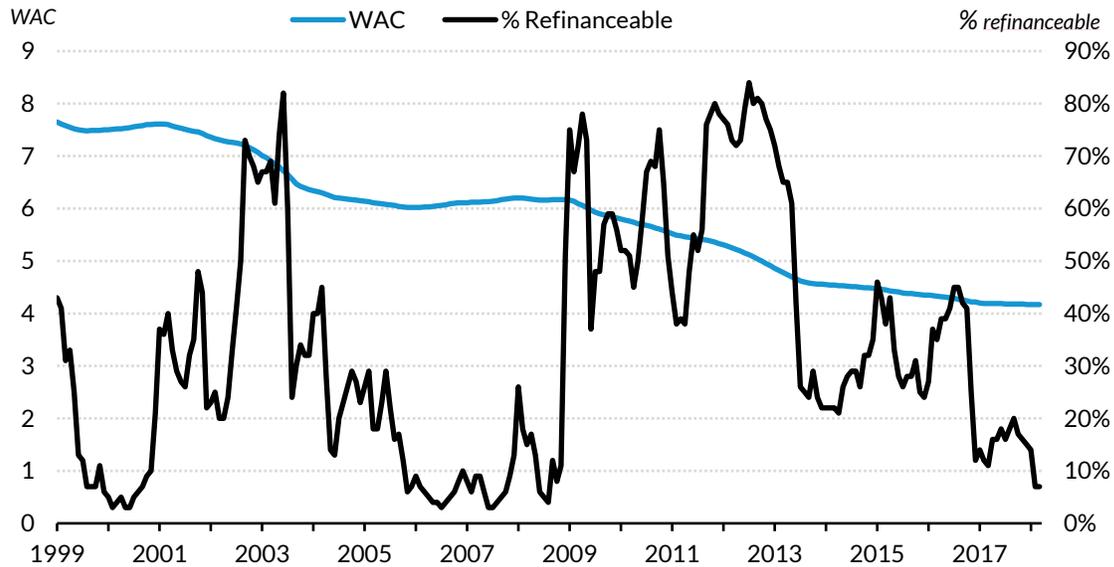
This rapid growth of the CRT market cannot continue because collateral volumes were down in 2017 and are expected to decline further in 2018. For example, if we average the annual production estimates from Fannie Mae, Freddie Mac, and the Mortgage Bankers Association, we find that production was down 11 percent from 2016 to 2017 and is expected to decline another 7 percent from 2017 to 2018. The decline in production is because of rising interest rates and the choking off of refinance activity.

The average interest rate on outstanding mortgages was 4.17 percent in the second quarter of 2018, down from 7.65 percent in 1999 (exhibit 2). That is, as a result of a 35-year secular decline in interest rates ending in late 2016, the mortgage market has experienced several large refinance waves, lowering the mortgage rate homeowners pay. Because of this dramatic market transformation, followed by a sharp rise in interest rates (the average mortgage rate has increased from 3.65 percent in 2016 to 4.61 percent in 2018), only about 8 percent of the market is refinanceable.

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<sup>1</sup> REMICs are real estate mortgage investment conduits. For foreign investors, the re-REMIC structure eliminates the tax timing mismatch between when the benefits of the investment are recognized and when the losses are realized. For real estate investment trust investors, the current debt issuances are good assets for real estate investment trust qualification, as they are issued by the GSEs, but the income is not good income, as the security is considered a derivative, not a mortgage security. A re-REMIC structure will allow the income to be treated as mortgage income.

## Exhibit 2: Interest Rates and Share of the Market That Is Refinanceable



**Sources:** eMBS, Freddie Mac Primary Mortgage Market Survey, and the Urban Institute.

**Note:** WAC = weighted average coupon.

We estimate that a borrower finds a refinance financially worthwhile only when there will be a roughly 75 basis-point savings between the rate they pay on their current mortgage and the rate on a new mortgage. According to Bankrate data, the average borrower will pay fees of \$2,084 on a \$200,000 loan, not including title search fees or title insurance.<sup>2</sup> If we add 1 percent for title search and title insurance, the required up-front cost to refinance a \$200,000 loan is 2.04 percent, or about 51 basis points in outright costs. In addition, the borrower needs to save at least 25 basis points because of the hassle factor. Thus, an average borrower would require a mortgage rate of 3.42 percent or lower to refinance. Rates were more than 100 basis points higher than that level as of May 2018.

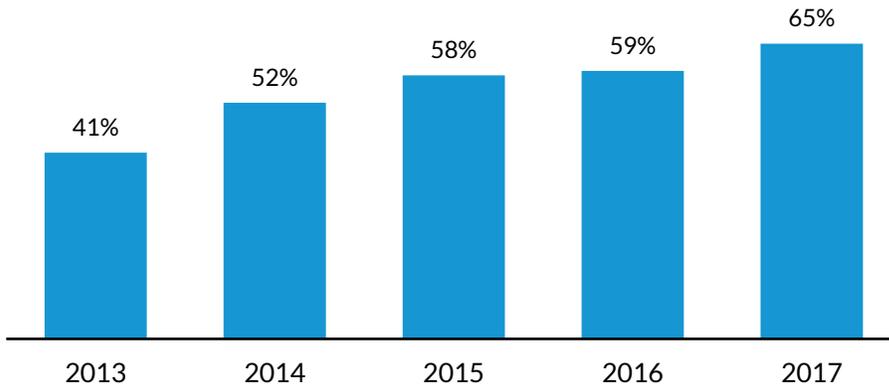
<sup>2</sup> “How Much Are Closing Costs in Your State?” Bankrate, May 12, 2017, <https://www.bankrate.com/finance/mortgages/closing-costs/closing-costs-by-state.aspx>.

## Can the GSEs Sustain Current CRT Production Levels?

Given the expected declines in collateral volume, can Fannie Mae and Freddie Mac sustain current production volumes? They can if they find a way to do more CRT on their existing book of business. There are four possible avenues through which this can occur: (1) increasing the collateral base on new business that they target for CRT, (2) raising the detachment point on the existing CRT transactions to pick up more of the “catastrophic” risk, (3) laying off more first-loss risk, or (4) targeting the legacy book of business. We make the case below that the first two alternatives make little economic sense for the GSEs, as they provide little protection.

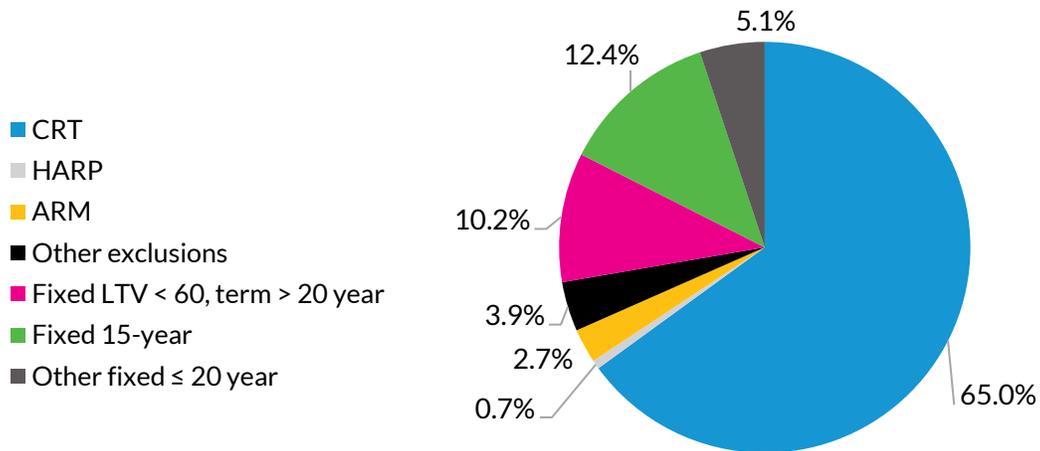
The GSEs are required to lay off the risk of 90 percent of their targeted collateral—30-year fixed-rate mortgages with LTV ratios greater than 60 percent. Exhibit 3 shows that in 2017, 65 percent of their book of business fit into the targeted category. If the GSEs were trying to keep CRT volume level in the face of declining supply, why would they not use other collateral? The answer lies in exhibit 4: most of what is not used is low-risk collateral. A close look at the 35 percent of the collateral that is not used reveals that 15-year loans compose 12.4 percent of the total, 30-year mortgages (terms of 241 months or more) with LTV ratios less than 60 percent compose another 10.2 percent, and other fixed-rate mortgages with terms of 20 years or less compose another 5.1 percent. Thus, 27.7 percent of the 35 percent that is not targeted is comprised of low-risk mortgages. Of the remaining loans, 2.7 percent are adjustable-rate mortgages, which are not homogenous and are, thus, difficult to pool, and the balance (3.4 percent) are Home Affordable Refinance Program loans and loans issued under affordable housing programs such as Home Possible and HomeReady.

**Exhibit 3: Single-Family Loans Targeted for CRT, as a Share of Total Acquisitions**



**Source:** December 2017 Federal Housing Finance Agency single-family credit risk transfer progress report.

**Exhibit 4: Breakdown of the 2017 GSE Single-Family Book of Business**



**Source:** Urban Institute calculations from eMBS data.

**Note:** ARM = adjustable-rate mortgage; CRT = credit risk transfer; GSE = government-sponsored enterprise; HARP = Home Affordable Refinance Program; LTV = loan-to-value ratio.

With the GSEs laying off the overwhelming majority of their risk on 30-year collateral with LTV ratios greater than 60 percent, most of what is not being used is low risk, either because the term is shorter than 30 years or because the LTV ratios are less than 60 percent.

In the CAS and STACR structures, the GSEs are buying protection against the first 4 percent of losses for deals with LTV ratios between 60.01 and 80 percent and the first 4.25

percent of losses for deals with LTV ratios between 80.01 to 97 percent. This is more than sufficient to protect against a scenario similar to the Great Recession. Fannie Mae estimates that if the 2017 loans with LTV ratios between 60.01 and 80 percent had gone through the same environment as the loans from 2006, the origination year with the poorest performance, they would have experienced losses of about 2.99 percent, with another 76 basis points because of modification costs (Fannie Mae 2017). The GSEs have sized the coverage adequately for this scenario: on most of its CAS deals and on the more recent STACR deals, the GSEs have covered the first 4 percent of losses. Similarly, if the 2017 loans with LTV ratios between 80.01 and 97 percent had gone through the same environment as the 2006 loans, the GSEs would have experienced net losses (after the MI proceeds) plus modification costs of 3.11 percent, well below the 4.25 percent of losses covered by the securitization.

In some of the STACR deals from 2015 and early 2016, Freddie Mac laid off the risks on as much as the first 5.85 percent of the losses on deals with LTV ratios between 60.01 to 80 percent and as much as 6.4 percent on deals with LTV ratios between 80.01 and 97 percent. Subsequent deals were done with lower attachment points. We assume the GSEs determined this was noneconomic, as the cost of raising the attachment point to cover increasingly remote risk is high. In particular, if done through CAS and STACR, the bonds must be fully funded. Thus, the investor is tying up cash for a long time and requires a return on that capital; the cost of this to the GSEs is much higher than the residual risk.

This leaves two alternatives: laying off more first-loss risk or targeting legacy assets. Both options are on the table, although it is not clear how economic they are. In the 2015–16 deals, there was one equity tranche, and a small amount of it was sold. In more recent deals, there are generally two equity tranches: the first 50 basis points of losses (B-2) and the tranche that takes losses between 50 and 100 basis points (B-1). The GSEs lay off less of the B-1 tranche than they do of the mezzanine tranches and in most recent deals have not laid off the first-loss B-2 tranche. The premiums are enough to cover the first-loss risk on these bonds. Fannie’s guarantee fees on new acquisitions for 2017 averaged 57 basis points, while Freddie’s averaged 51. With 10 basis points to the US Treasury and 7 basis points of administrative expenses, they are retaining 34 to 40 basis points of revenue. Thus, two years of revenue more than covers the maximum loss on the B-2 tranche. The GSEs have room to

sell off more of their first-loss risk; the question is whether it is economic, and it may not be. Many investors face high capital changes from holding first-loss bonds. Moreover, some losses are expected, even during normal periods. Insurance is often noneconomic for losses incurred under normal circumstances. Finally, many investors see the GSEs holding the first loss as their “skin in the game” and are more apt to invest in CRT if they see the GSEs with the first-loss exposure. It acts like a deductible in an insurance policy, a deterrent to lowering lending standards and raising default risk.

Similarly, the GSEs have not laid off the risk on their legacy book of business. They may view crisis-era loans that have long histories of on-time payments as containing less risk than is reflected in the market pricing. But they will not know until they try to lay off this risk.

## We Expect Tension in the Back-End and Front-End Decisions Going Forward

Credit risk transfer has evolved. We can, broadly speaking, think of CRT as fitting into two categories: whether the transaction is done on securities in the GSE portfolios (back-end CRT) or whether the transaction is done at the point of GSE acquisition (front-end CRT). We can also classify the holder of the risk: capital markets or institution based. The CAS and STACR transactions are absorbed by the capital markets, as are Freddie Mac’s whole loan securities transactions. The back-end institution-based transactions include Fannie Mae’s back-end Credit Insurance Risk Transfer (CIRT), Freddie Mac’s Agency Credit Insurance Structure (ACIS), and one back-end lender resource transaction. Front-end institution-based structure includes Fannie Mae’s front-end CIRT, Freddie Mac’s deep MI CRT, forward ACIS and insurance transactions, Freddie Mac’s IMAGIN (Integrated Mortgage Insurance), and lender recourse transactions from both GSEs. Lender recourse comprises transactions where lenders hold the risk in their own portfolios, as well as Fannie Mae’s L Street transactions, where the lender laid off its risk.

Exhibit 5 shows the transformation of this market. In 2013, 89.2 percent of the market was CAS and STACR. By 2017, this share had decreased to 66 percent.<sup>3</sup> Despite the decrease, there has been an increase in back-end capital markets volume from \$66.9 billion in 2013 to \$454.7 billion in 2017. Meanwhile, the other categories of CRT have grown rapidly. The share of back-end institution-based transactions has grown from 10.8 percent to 24.1 percent. The share of front-end institution-based transactions has grown from 0 percent to 9.7 percent. Thus, the growth of this program has allowed the GSEs to both increase CAS and STACR volume and diversify their book with other types of CRT.

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<sup>3</sup>For these calculations, where reference collateral is shared between STACR and ACIS deals, we prorate the reference collateral by risk in force.

## Exhibit 5: CRT Has Evolved: Transaction Types by Year

Reference pool unpaid principal balance, \$billions

	Front End (CRT at GSE Acquisition)				Back End (CRT on Loans Already in Portfolio)			
	Fannie Mae	Freddie Mac	Total	% of CRT	Fannie Mae	Freddie Mac	Total	% of CRT
<b>Capital markets</b>					Includes: Fannie Mae CAS, Freddie Mac STACR, and Freddie Mac Whole Loan Securities			
<b>2013</b>					25.0	41.9	66.9	89.2%
<b>2014</b>					209.6	105.6	315.2	91.1%
<b>2015</b>					174.1	132.9	307.0	74.8%
<b>2016</b>					239.6	132.2	371.8	67.8%
<b>2017</b>					264.8	189.9	454.7	66.0%
<b>Institution based</b>	Includes: Fannie Mae Front-End CIRT, Freddie Mac's forward transactions (insurance and re-insurance), as well as lender recourse transactions from both GSEs. The latter is comprised of transactions where lenders hold the risk in portfolio as well as Fannie's L Street transactions.				Includes: Fannie Mae Back-End CIRT and Freddie Mac ACIS and back-end lender risk sharing			
<b>2013</b>	0.0	0.0	0.0	0.0%	5.2	2.9	8.1	10.8%
<b>2014</b>	2.3	0.0	2.3	0.7%	7.9	20.5	28.4	8.2%
<b>2015</b>	10.5	11.6	10.5	2.5%	40.3	54.3	94.6	22.7%
<b>2016</b>	19.6	4.1	23.7	4.3%	73.8	78.7	152.5	27.8%
<b>2017</b>	61.5	5.6	67.1	9.7%	90.9	76.1	166.1	24.1%

**Sources:** December 2016 and 2017 Federal Housing Finance Agency single-family CRT progress reports and Urban Institute calculations.

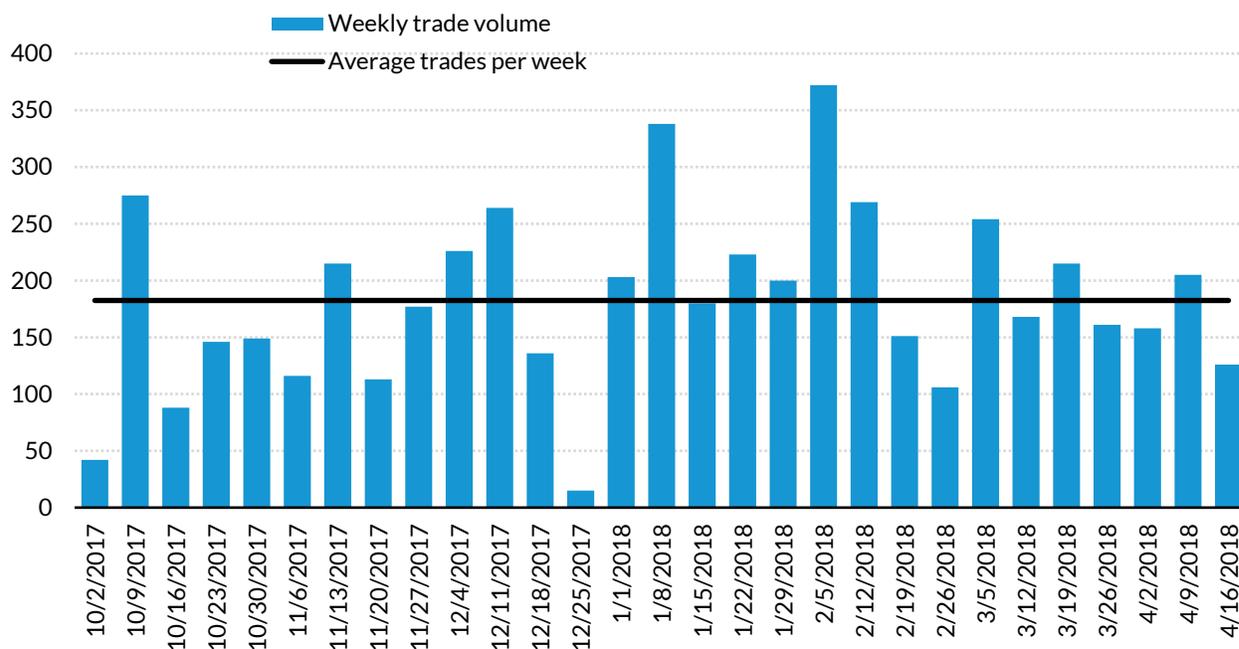
**Note:** ACIS = Agency Credit Insurance Structure; CAS = Connecticut Avenue Securities; CIRT = Credit Insurance Risk Transfer; CRT = credit risk transfer; GSE = government-sponsored enterprise; MI = mortgage insurance.

As volumes taper off, we expect tension between market participants and the GSEs as to what the composition of the issuance should be. Front-end and back-end CRT each have certain strengths and weaknesses, as do capital markets transactions versus those that are institution based. For example, back-end capital markets transactions have no counterparty risk, as they are fully funded up front, and the pricing is transparent. But that funding can be more fleeting, with costs spiking up or investors unwilling to buy these securities during periods of home price declines. Front-end institution-based transactions do pose modest counterparty risk, and some of the front-end transactions are less transparent, but the capital is likely more committed to the business, and it provides the GSEs real-time information on

GSE pricing. It also reduces aggregation and pipeline risk, providing protection against the unexpected. For example, if the GSEs had front-end CRTs in place before the three major hurricanes in 2017, neither would have removed loans in the hurricane-affected areas for the transactions executed soon after the hurricanes.

CAS and STACR investors will argue that with limited CRT supply, the program should be tilted toward back-end capital markets issuance, as it is important to maintain liquidity. Exhibit 6 shows that the liquidity of this market is not robust. From October 2017 to April 2018, 85 mezzanine bonds traded 185 times per week, averaging about twice a week per bond. The average weekly trading volume was \$750 million, for an average trade size of 4.17 million. Thus, CAS and STACR investors would argue that volumes should not be cut in this product.

**Exhibit 6: Weekly Trading Volume: Number of CRT Bonds Traded**



**Source:** Trade Reporting and Compliance Engine data compiled by Vista Data Services.

Front-end investors will argue that it is important to have a pipeline of front-end transactions, as the GSEs need to keep the interest of these investors, many of whom have invested in the infrastructure to accommodate transactions. If the investors do not see

transactions, they will look elsewhere and may not be available when the capital markets investors pull out.

There is no easy solution for this. We predict tension will be inherent in the program once the growth of CRT collateral stops, as it will require hard choices as to the trade-offs the GSEs are willing to make.

With CRT from the GSEs unlikely to grow, we believe there will be growth in CRT from other sources. In particular, we have seen interest in using CRT from mortgage insurers. Bank CRT is a possibility if capital relief can be provided. Finally, we could see trading in the CRT indexes. We explore each of these below.

### **CRT Done by Mortgage Insurers**

We believe mortgage insurers are the most promising area for CRT expansion. This expansion is valuable for the mortgage insurers and for the GSEs. The GSEs have considerable exposure to the mortgage insurers, and both the GSEs and the mortgage insurers are exposed to the risk of home price declines. If the mortgage insurers can transfer a portion of their risk, it reduces the GSE and taxpayer risk.

Exhibit 7 shows that there was one CRT transaction done by a mortgage insurer in 2015, one in 2016, two in 2017, and two thus far in 2018. In addition, we understand there are several others in the queue. Before 2017, the only participant in the market was United Guaranty, which was subsequently acquired by Arch MI. In 2017, transactions were done by National Mortgage Insurance Corporation and Arch MI. In 2018, Essent Guaranty entered the market. Thus, three of the six active mortgage insurers are now participating.

## Exhibit 7: Credit Risk Transfer by Mortgage Insurers

### Deals

Transaction	Sponsor	Size of offering	Date of Issue	Rating	Notes
Bellemeade Re Ltd 2015-1	United Guaranty (AIG)	\$298.9 million	Jul-15	NR	
Bellemeade Re II Ltd 2016-1	United Guaranty (AIG)	\$298.6 million	May-16	NR	Legacy portfolio
Oaktown Re Ltd. 2017-1	National Mortgage Insurance Corp (NMIC)	\$211.32 million	May-17	NR	2013-16 policies
Bellemeade Re 2017-1	United Guaranty/Arch MI	\$368.11 million	Oct-17	Morningstar, M1=BBB, M2=BB-, B1=B+	
Radnor Re 2018-1	Essent Guaranty	\$360.75 million	Mar-18	Morningstar, M1=BBB, M2=BB-, B1=B+	
Bellemeade Re 2018-1	United Guaranty/Arch MI	\$374.46 million	Apr-18	Morningstar, M1=BBB, M2=BB-, B1=BB-	

### Representative Transaction

#### Radnor Re 2018-1

Tranche	Credit support	Thickness	Pricing	Rating
A-H	6.5	93.5	N/a	NR
M-1	4.6	1.9	L+140	BBB
M-2	2.5	2.1	L+270	BB-
B-1	2.25	0.25	L+380	B+
B-2	0	2.25	N/a	NR

**Source:** Various Morningstar preliminary reports. See “Catastrophe Bond and Insurance-Linked Securities Deal Directory,” Artemis, accessed June 1, 2018, [www.artemis.bm/deal\\_directory](http://www.artemis.bm/deal_directory).

**Note:** NR = no rating.

We expect some of the other mortgage insurers to join, as the transactions make a great deal of sense. In particular, the transactions offer capital relief. The cash is put into a trust to pay claims or repay the bonds. The GSEs deduct the trust assets against the Private Mortgage Insurance Eligibility Requirements, required asset amounts. In addition, regulatory capital relief is offered at the state level, as these are considered to be reinsurance transactions.

These transactions also reduce the volatility of earnings, providing greater resiliency for the mortgage insurers under adverse market conditions. Equity markets should reward this lower volatility of earnings with a lower discount rate and a higher stock price.

Moreover, there is a rating benefit for doing these transactions. In particular, the nationally

recognized statistical rating organizations give credit for these transactions, which can raise the rating of the company, resulting in lower funding costs.

In addition, CRTs make good economic sense. Presumably, the mortgage insurers can pay less to lay off the risk than they are paid to take it. Finally, these transactions give the mortgage insurers information that is valuable for pricing the MI, through both the deal pricing and through discussions with investors.

Given these advantages, we would expect to see more credit risk transfer from these organizations. And relatively little has been done to date. The mortgage insurers together have \$246 billion in exposure to the GSEs. Less than 12 percent of the aggregate exposure has been laid off so far. That is, if we assume each deal lays off the bottom 6.5 percent, as in the representative transaction shown in exhibit 7 (Radnor Re 2018-1, sponsored by Essent Guaranty), it suggests \$29.4 billion in exposure has been covered. . This leaves considerable room for growth in this sector.

### **Credit Risk Transfer by Banks**

Theoretically, we would assume commercial banks could also benefit from transferring the credit risk on some of their portfolio loans under certain circumstances. It would reduce the volatility of earnings and allow banks to hold larger mortgage positions in portfolio. One well-publicized deal was done—Chase 2016-1, a \$1.88 billion CRT deal that contained more than 6,000 mortgages, all loans held by Chase in portfolio with approximately 75 percent qualifying under the GSE underwriting standards. Chase retained the servicing and the AAA assets and sold most of the lower-rated securities.

Why would they do this as a CRT transaction rather than as a private-label security? Conceptually, they could do a senior-subordinate structure, retaining the AAA tranche and the servicing. If they did it as a senior-subordinate transaction, they would likely have to consolidate the entire transaction on the balance sheet. In addition, they would retain the mortgage servicing rights asset, which carries a heavy capital charge—250 percent capital if less than 10 percent of current assets and dollar-for-dollar capital charge if above that.

There were two regulatory hurdles that banks must satisfy to do CRT transactions.

- The mortgages cannot be consolidated on the balance sheet if the bank becomes insolvent. That is, the investors need to have access to the collateral. The JPMorgan Chase transaction was the first to rely on the Federal Deposit Insurance Corporation safe harbor.
- The bank must receive capital relief for laying off the risk on the mortgages in portfolio. This was never granted, as there was no “true sale” on the mortgages, a condition for getting the regulators to recognize and approve the capital relief.

This discussion is distinct from what bank capital standards should be. It is merely asking if, in a capital framework, transferring the economic risk on a mortgage portfolio should allow for some capital relief.

The FHFA actions could cause bank regulators to reassess their view of the capital relief issue. The FHFA is working on a capital framework of the GSEs. This framework will likely include capital relief for the GSE CRT transactions. The FHFA has long discussed how these transactions serve to derisk the GSEs, by transferring this credit risk to the private markets. Assuming the FHFA capital framework includes capital relief for the GSEs, we believe it will put pressure on the bank regulators to revisit the capital relief issue for banks. And if the capital relief were granted, we could see substantial activity in bank CRT, as a CRT structure offers these institutions numerous advantages over the senior-subordinate structure.

## **CRT Index Trading**

Several entities have developed CRT indexes. These include Vista Data Services, Andrew Davidson & Co., and Mark Fontanilla & Co. Although these indexes are useful for benchmarking, trading in the public market requires that the indexes be compliant with the International Organization of Securities Commissions (IOSCO), the association of organizations that regulates the world’s securities and commodities exchanges. The organization outlined its principles related to benchmarks in July 2013. The hierarchy of data inputs in principle 8 recognizes that price quotes from market participants are preferable to other forms of price estimates (IOSCO 2013). Separately, market participants prefer that any benchmark contain at least five primary sources. A benchmark administrator is tasked with

determining compliance with the IOSCO principles. At least one of the CRT indexes mentioned above (Vista Data Services) will meet these criteria, as the data are gathered directly from five primary market participants. The others are based on pricing service data, and it is not clear that would qualify.

Trading in CRT indexes could expand the use of CRT in several ways. First, it could bring in market participants that do not want to trade in the underlying, fully funded bonds. Second, it would allow active institutions to take larger positions. In particular, we saw that trading volumes were limited. If an institutional investor wants to sell the securities, the liquidity might not be there. Thus, these investors might be reluctant to take large positions going in. If there was a mechanism to hedge these bonds, via trading in the indexes, these entities would be willing to take larger initial positions.

Trading in CRT indexes would bring better liquidity to the cash market as well, decreasing the cost to the GSEs of CRT. There are, however, some potential risks that will need to be monitored as a market emerges. If “speculators” swamp the market with shorts, volatility could increase and demand for the cash security diminish. This issue can be addressed through trading rules and regulatory oversight. But these concerns should not stop the orderly development of a futures or options market that is typically beneficial and complementary to cash markets.

## Conclusion

With the increase in interest rates over the past 18 months, we have seen a sharp decrease in refinance activity, and we expect it will decline more. This decline will, all other factors constant, result in a drop in GSE CRT activity. The GSEs might be able to compensate for this by laying off more of the first-loss risk and more of the risk on the legacy book of business, but they are unlikely to be able to grow their volume.

Since the inception of the CRT program, the GSEs have increased the CAS and STACR volume and increasingly diversified their CRT options. With no increase in volume,

the GSEs will be forced to decide whether they want to maintain CAS and STACR levels or send some of that volume into structures more reliant on institution-based capital.

Finally, we believe the expansion in CRT volume in the years ahead will come from sources other than the GSEs. The mortgage insurers are poised to issue more of this product because it is economic, it provides capital relief, and it reduces earnings volatility. The banks could also issue CRT if they were offered capital relief on the loans. The potential for trading in CRT indexes could also increase the interest in the basic product, both by reaching new investors and allowing existing investors to hedge their position if they cannot exit the product.

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