SINGLE-FAMILY CREDIT RISK TRANSFER PROGRESS REPORT

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Division of Housing Mission and Goals

Table of Contents

Table of Contents i

Introduction 1

Enterprise Efforts to Share Credit Risk with the Private Sector 1

I. The Role of Primary Mortgage Insurance in Sharing Credit Risk 2

II. Enterprise Credit Risk Transfer Programs and 2015 Activity 5

Cost of Credit Risk Transfer Transactions 17

Introduction

Since 2012, the Federal Housing Finance Agency (FHFA) has set as a strategic objective that Fannie Mae and Freddie Mac share credit risk with private investors.[1] While the Enterprises have a longstanding practice of sharing credit risk on certain loans with primary mortgage insurers and other counterparties, the credit risk transfer transactions have taken further steps to share credit risk with private market participants. Since the Enterprises were placed in conservatorship in 2008, they have received financial support from the U.S. Department of the Treasury under the Senior Preferred Stock Purchase Agreements (PSPAs). The Enterprises' credit risk transfer programs reduce the overall risk to taxpayers under these agreements.

These programs have made significant progress since they were launched in 2012 and credit risk transfer transactions are now a regular part of the Enterprises' businesses. This progress is reflected in FHFA's *2016 Scorecard for Fannie Mae, Freddie Mac, and Common Securitization Solutions* (2016 Scorecard), which sets the expectation that the Enterprises will transfer risk on 90 percent of targeted single-family, 30-year, fixed-rate mortgages. FHFA works with the Enterprises to ensure that credit risk transfer transactions are conducted in an economically sensible way that effectively transfers risk to private investors.

This Progress Report provides an overview of how the Enterprises share credit risk with the private sector, including through primary mortgage insurance and the Enterprises' credit risk transfer programs. The discussion includes year-end 2015 data, a discussion of which Enterprise loan acquisitions are targeted for the credit risk transfer programs, and an overview of investor participation information. The second section of the Progress Report provides information on scenario-based estimates for the cost of certain credit risk transfer transactions.

Enterprise Efforts to Share Credit Risk with the Private Sector

The Enterprises' public purposes include providing broad national secondary market liquidity for residential mortgage financing, both for single-family and multifamily mortgages.

On the single-family side, the Enterprises accomplish this objective by acquiring single-family mortgage loans from lenders and creating securities backed by those mortgages for sale to

[1] Although the credit risk transfer effort was initiated in 2012, the first transactions were not completed until 2013. Additional background information on the Enterprises' credit risk transfer programs can be found in FHFA's report *Overview of Fannie Mae and Freddie Mac Credit Risk Transfer Transactions*, available at http://www.fhfa.gov/AboutUs/Reports/Pages/Overview-of-Fannie-Mae-and-Freddie-Mac-Credit-Risk-Transfer-Transactions-8212015.aspx.

investors. Through the securitization process, the Enterprises transfer the interest rate and liquidity risk associated with holding mortgage loans. The securitization process does not, however, transfer credit risk on these loans. Each Enterprise manages the credit risk of their mortgage acquisitions and guarantees the timely payment of principal and interest to mortgage-backed securities investors. The Enterprises charge a guarantee fee in exchange for providing this guarantee, which covers administrative costs, projected credit losses from borrower defaults over the life of the loans, and the cost of holding capital to protect against projected credit losses that could occur during stressful macroeconomic conditions.[2]

The Enterprises currently share credit risk with the private sector through two different programmatic approaches. First, the Enterprises are required under their charters to share credit risk on higher loan-to-value (LTV) mortgage acquisitions. Acceptable forms of this required risk sharing include lender participation of at least 10 percent, lender recourse, and primary mortgage insurance. To date, primary mortgage insurance has been the dominant method used to meet this charter requirement. Second, FHFA, as conservator, has also required the Enterprises to develop and implement credit risk transfer programs which cover transactions that go beyond the Enterprise charter requirements for risk sharing. This section describes the Enterprises' activities to share credit risk under both of these approaches.

I. The Role of Primary Mortgage Insurance in Sharing Credit Risk

Under their charters, loans acquired by Fannie Mae and Freddie Mac that have LTV ratios above 80 percent are required to have loan-level credit enhancement either in the form of mortgage insurance, a recourse agreement, or seller retained participation in the loan. This is a long standing statutory requirement that predates the Enterprises' development of additional credit risk transfer programs.

Primary mortgage insurance is the form of charter-eligible credit enhancement used most often. Primary mortgage insurance, which can be paid by the borrower, the lender, or the Enterprise, is obtained at the front-end of the mortgage transaction prior to acquisition by the Enterprises.

The Enterprises establish primary mortgage insurance coverage requirements that specify the insurance coverage needed on individual loans, and these coverage requirements vary depending on the type of loan and the LTV of the loan. Loan-level mortgage insurance is structured to cover a percentage of the loan's unpaid principal balance (UPB) in the event of a default by the

[2] Currently, the guarantee fee also includes a 10 basis point charge as required by Section 401 of the Temporary Payroll Tax Cut Continuation Act of 2011, codified at 12 USC 4547.

borrower, and it represents the maximum claim value for each loan. The current coverage requirements published in the Enterprises' guides range from either 12 to 35 percent or 6 to 18 percent depending on the mortgage product type.[3] The majority of over-80 LTV loans that are delivered to the Enterprises have primary mortgage insurance coverage of 12 to 35 percent.

The amount of insurance coverage is referred to as risk-in-force (RIF). The RIF for each insured loan is calculated by multiplying the percentage of insurance coverage times the UPB of the mortgage. The total RIF for all primary mortgage insurers represents the maximum level of coverage for all loans with mortgage insurance and is equivalent to the Enterprises' total risk exposure to primary mortgage insurer counterparties.

Table 1 shows the total risk in force, measured at the time of Enterprise acquisition for each loan with primary mortgage insurance acquired by the Enterprises for each year between 2013 and 2015. At the time of acquisition, loans purchased during these three years had approximately $126 billion of RIF on a total UPB of $500 billion.[4]

[3] For loan products with mortgage insurance coverage ranging from 6 to 18 percent, the Enterprises also require an incremental payment of a loan level price adjustment or delivery fee. Loan products with mortgage insurance coverage ranging from 12 to 35 percent do not require this additional, incremental payment.

[4] While the figures in Table 1 represent total primary mortgage insurance coverage at the time each loan was acquired by the Enterprises, it does not reflect a point-in-time level of mortgage insurance exposure since some loans either prepay or default over time. The Enterprises' total mortgage insurance exposure as of December 31, 2015 is $184.5 billion, which represents a combination of loan-level (~$183 billion) and pool-level (~$1.5 billion) RIF on $724.5 billion of UPB.

Table 1: Primary Mortgage Insurance Coverage for New Acquisitions by Acquisition Year

Year	Enterprise	RIF[1]	UPB[1]
2013	**Fannie Mae**	27.3	108.9
	Freddie Mac	12.5	49.2
	TOTAL	39.8	158.1
2014	**Fannie Mae**	23.2	92.1
	Freddie Mac	14.5	56.7
	TOTAL	37.6	148.8
2015	**Fannie Mae**	30.2	120.3
	Freddie Mac	18.5	72.7
	TOTAL	48.7	193.0
TOTAL	**Fannie Mae**	**80.6**	**321.4**
	Freddie Mac	**45.5**	**178.6**
	TOTAL	**126.1**	**500.0**

[1]In billions of dollars.

Source: FHFA

While the total RIF associated with primary mortgage insurance is large, the actual level of credit risk sharing provided through paid insurance claims depends on the number of insured loans that default and the severity of losses on those loans. As recent experience shows, not all loans with primary mortgage insurance are likely to default, even during periods of economic stress. For example, Enterprise loans with LTV ratios above 80 percent that were originated in 2006 and 2007 have average cumulative default rates of between 12.6 and 14.4 percent.[5]

In addition, loss severities can vary across the housing cycle. During stress events such as the recent financial crisis, for example, loan-level losses can exceed mortgage insurance coverage, leaving the Enterprises with the remaining credit risk. For example, Enterprise loans with LTV ratios above 80 percent that were originated in 2006 and 2007 experienced average loss severities ranging from 29.4 to 33.2 percent after giving credit to any mortgage insurance benefit

[5] These default rates are based upon publicly available Fannie Mae historical loan performance data. The published historical data reflects only loans that generally meet current Enterprise eligibility standards. Results based upon Freddie Mac data are qualitatively similar.

or lender indemnification.[6] For many of these loans, loss severities exceeded the applicable mortgage insurance coverage level, which caused the Enterprises to absorb additional losses.[7]

The loan-level coverage structure of primary mortgage insurance differs from the pool-level coverage that is used in other kinds of credit risk sharing transactions. For example, instead of sharing credit risk on individual loans, pool-level insurance/reinsurance transactions cover a specified amount of aggregated credit risk for an entire pool of hundreds or thousands of loans. The difference between the loan-level coverage of primary mortgage insurance and the pool-level coverage of recent credit risk transfer transactions means that the RIF figures for these two categories are not strictly comparable.

Further, the credit risk transfer program is supplemental to the coverage provided by charter-eligible primary mortgage insurance. In fact, credit risk transfer transactions include loans that have primary mortgage insurance coverage, which provides additional credit risk protection for the Enterprises that is beyond the Enterprises' charter requirements.

II. Enterprise Credit Risk Transfer Programs and 2015 Activity

The Enterprises have made significant progress over the last three years toward fully integrating a credit risk transfer program into their business models. They have increased the amount of credit risk transferred year-over-year, and they are now transferring credit risk on most loans for which credit risk transfer is economically reasonable.

The Enterprises have also worked to develop a portfolio of different transaction structures,[8] which include:

- Credit risk debt issuances;
- Insurance/reinsurance transactions;
- Senior-subordinate securities; and
- Collateralized lender recourse transactions.

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[6] These loss severities are based upon Fannie Mae historical loan performance data. The published historical data reflects only loans that generally meet current Enterprise eligibility standards. Results based upon Freddie Mac data are qualitatively similar.
[7] The Enterprises also absorbed additional losses through the crisis due to mortgage insurance cancellation prior to loan default, as well as rescission and curtailment of mortgage insurance claims.
[8] Additional information about each of the various credit risk transfer products is available in FHFA's report entitled *Overview of Fannie Mae and Freddie Mac Credit Risk Transfer Transactions*, available at http://www.fhfa.gov/AboutUs/Reports/Pages/Overview-of-Fannie-Mae-and-Freddie-Mac-Credit-Risk-Transfer-Transactions-8212015.aspx.

As with primary mortgage insurance, the amount of credit risk transferred is referred to as RIF for the insurance products. For the Enterprises' debt issuances, Connecticut Avenue Securities (CAS) for Fannie Mae and Structured Agency Credit Risk (STACR) for Freddie Mac, and other products where securities are created, the amount of credit risk transferred is referred to as note size. For purposes of simplifying the discussion, this Progress Report refers to the amount of credit risk transferred on all credit risk transfer transactions as RIF.

As shown in Table 2, the Enterprises have transferred credit risk on mortgages with a UPB of about $838 billion from 2013 through the end of 2015. The corresponding amount of credit risk transferred on these loans – note size or RIF – reached $30.6 billion. This represents, on average, about 360 basis points (or 3.6 percent of the UPB of loans covered) of credit loss protection, which is referred to as notional coverage in Table 2. This coverage is in addition to any credit enhancement provided by primary mortgage insurance as well as the borrowers' equity in the property. For those loans covered by credit risk transfer transactions, cumulative credit loss coverage (based upon borrower equity, primary mortgage insurance, and credit risk transferred) is generally considered to be more than sufficient to cover the credit losses experienced during the recent housing crisis.

Table 2: Credit Risk Transfer Volumes

		TOTAL				Debt issuances				Insurance and Other			
Year	Enterprise	Note Size or RIF[1]	UPB[1]	Notional Coverage[2]	Number of Transactions	Note Size[1]	UPB[1]	Notional Coverage[2]	Number of Transactions	RIF[1]	UPB[1]	Notional Coverage[2]	Number of Transactions
2013	Fannie Mae	0.8	**30.2**	2.5%	2	0.7	25.0	2.7%	1	0.1	5.2	1.8%	1
	Freddie Mac	1.2	**44.8**	2.7%	3	1.1	41.9	2.7%	2	0.1	2.9	2.7%	1
	TOTAL	2.0	**75.0**	2.6%	5	1.8	66.9	2.7%	3	0.2	8.1	2.1%	2
2014	Fannie Mae	6.1	**219.8**	2.8%	12	5.8	209.6	2.8%	7	0.3	10.2	2.8%	5
	Freddie Mac	5.6	**126.1**	4.5%	10	4.9	105.6	4.7%	7	0.7	20.5	3.5%	3
	TOTAL	11.8	**345.8**	3.4%	22	10.8	315.2	3.4%	14	1.0	30.7	3.2%	8
2015	Fannie Mae	7.3	**228.8**	3.2%	21	5.9	179.1	3.3%	8	1.4	49.7	2.8%	13
	Freddie Mac	9.5	**188.3**	5.0%	22	6.7	132.0	5.0%	8	2.9	56.3	5.1%	14
	TOTAL	16.8	**417.1**	4.0%	43	12.6	311.2	4.0%	16	4.3	106.0	4.0%	27
ALL	Fannie Mae	14.2	**478.8**	3.0%	35	12.4	413.7	3.0%	16	1.8	65.1	2.8%	19
	Freddie Mac	16.3	**359.2**	4.6%	35	12.7	279.5	4.5%	17	3.6	79.7	4.6%	18
	TOTAL	30.6	**837.9**	3.6%	70	25.1	693.2	3.6%	33	5.4	144.8	3.8%	37

[1]Note Size, RIF, and UPB are in billions of dollars. Risk retained by the Enterprises is not included in the reference pool UPB.

[2]Notional coverage is calculated as Note Size or RIF divided by UPB. For example, in 2013 Fannie Mae issued 700 million dollars of Notes (CAS bonds) to cover losses on 25 billion dollars of UPB, which yielded notional coverage of 2.7 percent. Note, these yearly totals represent an average level of coverage across multiple transactions. As such, each individual transaction may be characterized by more or less notional coverage than what is reflected in the yearly average.

Source: FHFA

The following subsections provide information about different credit risk transfer structures, the loans targeted for credit risk transfer transactions, and investor participation in these transactions.

A. Credit Risk Transfer Transaction Structures

STACR/CAS Transactions: To date, the STACR and CAS debt issuances have been the dominant transaction structure used under the Enterprises' credit risk transfer programs. STACR and CAS securities are issued as Enterprise debt and do not constitute the sale of mortgage loans. Instead, STACR and CAS are considered to be synthetic securitizations because their cash flows track to the credit risk performance of a notional reference pool of mortgage loans.

The STACR/CAS structure has several key benefits. The liquidity of the to-be-announced (TBA) market is not affected by this structure because the loans referenced were previously pooled into guaranteed mortgage-backed securities and sold in the TBA market. The STACR and CAS transactions are also effectively fully collateralized by cash that investors pay to purchase the debt securities. This means that the Enterprises essentially have no counterparty or reimbursement risk with this structure. Investors pay for STACR and CAS notes in full at the time of purchase and absorb applicable credit losses through a reduction in principal on the underlying notes.

As previously shown in Table 2, the Enterprises have sold approximately $25 billion in STACR and CAS notes that correspond to underlying mortgages totaling $693 billion in UPB. These debt issuances represent approximately 83 percent of the volume of all credit risk transfers to date.

Tables 3a and 3b provide information on all completed CAS and STACR transactions through 2015. Listed for each transaction is the UPB of the underlying reference pool, the attachment and detachment points, and note size. Each transaction's attachment point reflects the point at which private investors begin to absorb losses. Similarly, the detachment point reflects the point at which private capital is fully exhausted and the Enterprises become responsible for any remaining losses.

For example, for the CAS 2013-1 transaction in Table 3a, the attachment point at 30 basis points and the detachment point at 300 basis points results in a credit risk transfer amount of 270 basis points (2.7 percent) of the UPB. The attachment point at 30 basis points indicates that the Enterprise is responsible for losses up to 30 basis points of the UPB, or the first 0.3 percent of losses. The detachment point at 300 basis points means that the Enterprise is also responsible for all losses in excess of 300 basis points (or 3 percent) of the UPB.

As part of its STACR issuances in 2015, Freddie Mac began to transfer to investors a portion of the first losses on mortgage reference pools, which is reflected in Table 3b as an attachment point at zero. Both Enterprises had previously retained the first losses on loans referenced in earlier debt issuances. Freddie Mac implemented this change for all of its 2015 STACR transactions, and Fannie Mae has done so for its first CAS transaction in 2016. The Enterprises will continue to evaluate the economics of transferring a first loss position and may adjust this practice as market conditions and the economics of credit risk transfer change.

Freddie Mac also changed the structure of the STACR securities issued in 2015 to transfer credit risk based on actual credit loss amounts, rather than based on defined credit losses calculated by a formula as it had done in prior STACR transactions. That change was made possible by Freddie Mac's release in late 2014 of approximately 15 years of historical loan-level data on single-family mortgage credit actual losses. Fannie Mae released actual loss data in mid-2015 and later in the year also converted the structure of its CAS notes to transfer risk based on actual losses.

Table 3a: Fannie Mae CAS Transactions

Transaction[1]	Date	Reference Pool UPB[2] (in millions of $)	Risk transfer attach/detach points (in basis points)	Note size[3] (in millions of $)
2013-1	10/24/13	25,000	30/300	675
2014-1	1/27/14	27,778	30/300	750
2014-2 (Group 1)	5/26/14	44,446	30/300	1,200
2014-2 (Group 2)	5/26/14	12,904	65/375	400
2014-3 (Group 1)	7/25/14	55,556	30/300	1,500
2014-3 (Group 2)	7/25/14	17,742	65/375	550
2014-4 (Group 1)	11/25/14	34,037	30/300	919
2014-4 (Group 2)	11/25/14	17,097	65/375	530
2015-1 (Group 1)	2/26/15	29,806	40/350	924
2015-1 (Group 2)	2/26/15	17,852	70/375	545
2015-2 (Group 1)	5/19/15	26,600	40/375	891
2015-2 (Group 2)	5/19/15	16,157	80/425	557
2015-3 (Group 1)	7/22/15	26,840	40/375	899
2015-3 (Group 2)	7/22/15	19,070	80/425	658
2015-4 (Group 1)	10/27/15	25,532	50/400	894
2015-4 (Group 2)	10/27/15	17,260	80/400	552
Total CAS Transactions		**413,677**		**12,444**

[1]Risk retained by the Enterprises is not included in the reference pool UPB.

[2]Note size represents the dollar value of notes sold and is equivalent to RIF.

Source: FHFA

Table 3b: Freddie Mac STACR Transactions

Transaction[1]	Date	Reference Pool UPB[2] (in millions of $)	Risk transfer attach/detach points (in basis points)	Note size[3] (in millions of $)
2013-DN1	7/26/13	18,519	30/300	500
2013-DN2	11/12/13	23,333	30/300	630
2014-DN1	2/12/14	24,000	30/450	1,008
2014-DN2	4/9/14	23,000	30/450	966
2014-DN3	8/11/14	16,000	40/460	672
2014-HQ1	8/11/14	8,000	75/650	460
2014-HQ2	9/15/14	14,000	60/610	770
2014-DN4	10/28/14	13,000	50/520	611
2014-HQ3	10/28/14	7,600	85/650	429
2015-DN1	2/3/15	21,679	0/450	880
2015-HQ1	3/31/15	14,208	0/650	860
2015-DNA1	4/28/15	26,218	0/425	1,010
2015-HQ2	6/9/15	7,600	0/560	426
2015-DNA2	6/29/15	18,421	0/550	950
2015-HQA1	9/28/15	15,266	0/595	872
2015-DNA3	11/9/15	19,065	0/585	1,070
2015-HQA2	12/8/15	9,576	0/640	590
Total STACR Transactions		**279,484**		**12,704**

[1]Risk retained by the Enterprises is not included in the reference pool UPB.

[2]Note size represents the dollar value of notes sold and is equivalent to RIF.

Source: FHFA

Additional Credit Risk Transfer Structures: As is shown in Table 4, the Enterprises use other credit risk transfer structures in addition to the STACR/CAS model. These additional credit risk transfer structures, described in greater detail in the paragraphs following Table 4, have produced nearly $5.4 billion of RIF on a collective UPB of about $145 billion.[9] While modest in comparison to the total size of the STACR and CAS transactions, these additional transaction types continue to grow. Pursuing a broad portfolio of credit risk transfer transaction structures furthers FHFA's objective of having the Enterprises' diversify their investor base for credit risk transfers and be able to compare execution across different structures and market environments.

[9] The total RIF associated with additional credit risk transfer structures (~$5.4 billion) is calculated as the sum of the insurance/reinsurance RIF, front-end collateralized recourse RIF, and Senior/Subordinate RIF. The collective UPB associated with alternate credit risk transfer structures (~$145 billion) is calculated in a similar manner.

Table 4: Non-Debt Credit Risk Transfer Volumes

		Insurance/Reinsurance Transactions				Front End Collateralized Recourse Transactions				Senior/Subordinate Transactions			
Year	Enterprise	RIF[1]	UPB[1]	Notional Coverage[2]	Number of Transactions	RIF[1]	UPB[1]	Notional Coverage[2]	Number of Transactions	RIF[1]	UPB[1]	Notional Coverage[2]	Number of Transactions
2013	Fannie Mae	$0.1	$5.2	1.8%	1	-	-	-	0	-	-	-	0
	Freddie Mac	$0.1	$2.9	2.7%	1	-	-	-	0	-	-	-	0
	TOTAL	$0.2	$8.1	2.1%	2	-	-	-	0	-	-	-	0
2014	Fannie Mae	$0.2	$7.9	2.8%	2	$0.06	$2.28	2.8%	3	-	-	-	0
	Freddie Mac	$0.7	$20.5	3.5%	3	-	-	-	0	-	-	-	0
	TOTAL	$0.9	$28.4	3.3%	5	$0.06	$2.28	2.8%	3	-	-	-	0
2015	Fannie Mae	$1.0	$40.3	2.5%	6	$0.40	$9.38	4.3%	7	-	-	-	0
	Freddie Mac	$2.8	$54.3	5.1%	10	$0.01	$1.02	1.1%	2	$0.06	$0.93	6.8%	2
	TOTAL	$3.8	$94.7	4.0%	16	$0.41	$10.40	4.0%	9	$0.06	$0.93	6.8%	2
ALL	Fannie Mae	$1.3	$53.4	2.5%	9	$0.47	$11.66	4.0%	10	-	-	-	0
	Freddie Mac	$3.6	$77.7	4.6%	14	$0.01	$1.02	1.1%	2	$0.06	$0.93	6.8%	2
	TOTAL	$4.9	$131.14	3.7%	23	$0.48	$12.68	3.8%	12	$0.06	$0.93	6.8%	2

UPB.

[2]Notional coverage is calculated as RIF divided by UPB.

Source: FHFA

The Enterprises are currently pursuing the following additional transaction types:

- **Insurance/Reinsurance Transactions:** Insurance or reinsurance transactions are considered part of the credit risk transfer program and separate from the Enterprises' charter requirements for loans with LTVs greater than 80 percent. To date, the Enterprises have focused on two pool-level products —Agency Credit Insurance Structure (ACIS) for Freddie Mac and Credit Insurance Risk Transfer (CIRT) for Fannie Mae. Instead of providing coverage on individual loans, as occurs with loan-level primary mortgage insurance, these pool-level policies cover a specified percentage of aggregate credit risk for a pool of hundreds or thousands of loans. ACIS and CIRT grew significantly both in the volume and the number of transactions in 2015, accounting for about 23 percent of total credit risk transfers during the year. Through the CIRT and ACIS structures, the Enterprises are purchasing insurance primarily from diversified reinsurers. These transactions are partially collateralized and distributed among a variety of highly-rated reinsurers and insurers, which reduces counterparty, reimbursement, and correlation risk.[10]

- **Senior/Subordinate Transactions:** In a senior-subordinate securitization, an Enterprise sells a pool of mortgages to a trust which securitizes the cash flows into several tranches of bonds. The subordinated bonds (mezzanine and first-loss) are structured to absorb expected and unexpected credit losses, protecting the senior bond. In 2015, Freddie Mac conducted its first two Whole Loan Securities transactions, which used a senior-subordinate structure.[11]

  These transactions transferred the credit risk on pools of super-conforming mortgage loans, which are originated in designated high-cost areas and have balances between the national conforming loan limit and higher limits applicable in high-cost areas. To date, these senior-subordinate securitizations have only included mortgages that are not eligible or have limited eligibility for to-be-announced mortgage-backed securities.

- **Front-End Collateralized Lender Recourse Transactions:** Front-end lender risk transfer transactions include various methods of credit risk transfer where an originating lender retains a portion of the credit risk associated with the loans they sell to the Enterprise. In exchange, the lender receives a reduced guarantee fee charge on the loans from the Enterprise or a premium payment from the Enterprise. These transactions are structured so that risk is transferred prior to, or simultaneous with, Enterprise loan acquisition. To date, all front-end lender recourse transactions have been fully collateralized. These transactions may take a securities format, which allows the originating lender to either hold the credit risk by retaining the securities or sell the credit risk by selling the securities to credit risk investors. Both Enterprises have conducted front-end collateralized recourse transactions. Fannie Mae, under its L Street Securities label, has completed several front-end collateralized lender recourse transactions through the issuance of securities in 2015.

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[10] Reinsurers are often characterized by diversified lines of business, which helps mitigate the risk that the Enterprises' counterparties are correlated to the housing market stress and have increased claims at exactly the same time the Enterprise themselves are under stress.
[11] In order to ensure aligned incentives, Freddie Mac retains at least five percent of the mezzanine and first-loss bonds in Whole Loan Security transactions.

B. Enterprise Loans Targeted for Credit Risk Transfer Programs

The Enterprises target certain categories of single-family loans for their credit risk transfer programs. Currently, they primarily target single-family, 30-year, fixed-rate mortgages with original LTV ratios of 60 percent or greater and 95 percent or less for Freddie Mac and 97 percent or less for Fannie Mae.[12] Further, these loans may be originated as purchase, rate and term refinance, or cash-out refinance transactions.[13] Targeted loans represent over 50 percent of the Enterprises' recent loan acquisitions and a substantial amount of the credit risk associated with all new loan acquisitions.

Figure 1 shows by quarter the percentage of single-family loan acquisitions targeted by the Enterprises for credit risk transfer and the percentage included in credit risk transfer transactions through year-end 2015.[14] The difference between these two numbers is impacted by the holding period between Enterprise loan acquisition and the completion of credit risk transfer transactions. Under the Enterprises' current operations, there can be up to a one-year holding period between the date of Enterprise loan acquisition and the date that a loan is included in a credit risk transfer transaction.[15] During this period, a fraction of targeted loans may either prepay or default. Because of this holding period, many loans acquired in or after Q4 2014 will likely be included in future credit risk transfer transactions. As a result, the proportion of targeted loans acquired from late 2014 through 2015 that will ultimately be included in credit risk transfer transactions will almost certainly increase over time.

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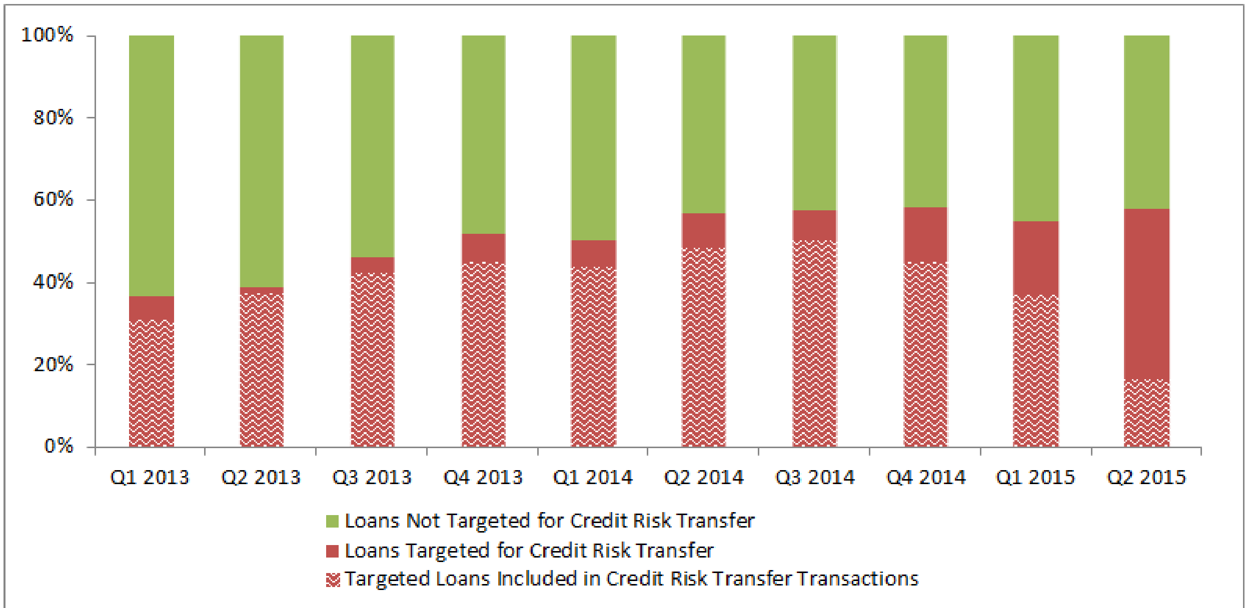
[12] Both Enterprises initially targeted loans with LTVs greater than 60 percent and less than or equal to 80 percent. Beginning in 2014, both Enterprises began issuing additional securities backed by loans with LTVs greater than 80 percent.

[13] Loans originated under HARP, Freddie Mac's Relief Refinance Program and Fannie Mae's Refi Plus Program are currently excluded from credit risk transfer.

[14] The 2016 Scorecard establishes the expectation that the Enterprises transfer credit risk on no less than 90 percent of targeted loan acquisitions. In future reports, FHFA will provide additional information about Enterprise performance on this Scorecard objective for 2016.

[15] The Enterprises are working toward narrowing this time gap as they continue to refine their credit risk transfer programs.

Figure 1: Proportion of Quarterly Loan Acquisitions Targeted and Covered by Credit Risk Transfer



[1] Between acquisition and risk transfer, some proportion of targeted loans either prepay or become delinquent, which eliminates them from future reference pools. Hence, not all loans targeted for credit risk transfer are ultimately covered.

[2] Recent acquisitions, from Q4 2014 to the present, will likely be subject to additional credit risk transfer transactions throughout 2016. As a result, the proportion of targeted Q4 2014-Q2 2015 acquisitions covered by credit risk transfer is likely to increase over time.

Source: FHFA

As Figure 1 also indicates, some loans have not been targeted for credit risk transfer. There are a variety of reasons for this, including low amounts of credit risk, small volumes, and legacy underwriting. Table 5 shows the loan categories not targeted by the Enterprises for credit risk transfer transactions as a percentage of overall single-family loan acquisitions.

The Enterprises have not targeted refinance of legacy loans made under the Relief Refinance Program (Freddie Mac) and Refi Plus Program (Fannie Mae), which include, but are not limited to, loans refinanced under HARP. These loans have not been targeted to date because they were initially underwritten to legacy standards and are unlikely to result in an economically sensible credit risk transfer.

Table 5: Coverage of Credit Risk Transfer Transactions

Enterprise Quarterly Loan Acquisitions Not Targeted for Credit Risk Transfer Transactions (as a percent of quarterly acquisition volumes)

	2013				2014				2015	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
(a) HARP/Relief Refinance/Refi Plus	25	25	21	19	19	13	9	8	7	7
(b) 30-Year Fixed and LTV less than 60	11	9	8	7	7	7	7	8	10	10
(c) 15/20-Year Fixed	22	21	19	16	16	16	16	17	18	19
(d) ARMs	2	3	4	3	5	6	5	5	3	2
(e) Other Exclusions	3	4	2	3	3	3	6	4	7	4
(f) Total Loans Not Targeted[1]	**63**	**61**	**54**	**48**	**50**	**43**	**43**	**42**	**45**	**42**

[1]Rows (a) through (e) sum to row (f), which represents the percentage of quarterly acquisition volumes not targeted for credit risk transfer. In any given quarter, the percentage of loans targeted for credit risk transfer is calculated as 100 minus row (f). For instance, in Q1 2013, 37 percent (100 percent - 63 percent) of acquisitions were targeted for credit risk transfer.

Source: FHFA

The Enterprises also do not currently target for credit risk transfer mortgages with LTVs of less than 60 percent, 20-year or 15-year term mortgages, or adjustable rate mortgages (ARMs). Loans with 15-year terms and/or LTVs of less than 60 percent carry comparatively low credit risk. Hence, it is generally less economically sensible to transfer credit risk on these loans. In the case of ARMs, the relatively low volume of such loans currently acquired by the Enterprises makes it more difficult to conduct credit risk transfer transactions efficiently.

While these categories of loans are currently not targeted, FHFA expects the Enterprises to explore credit risk transfer opportunities on some of these non-targeted loan categories as part of the 2016 Scorecard, and the Enterprises have already made progress on this front. For example, Fannie Mae completed an initial transaction involving ARMs in 2015, and Freddie Mac completed its first credit risk transfer transaction with 15-year term loans in 2016.

C. Investor Participation in Enterprise Credit Risk Transfer Programs

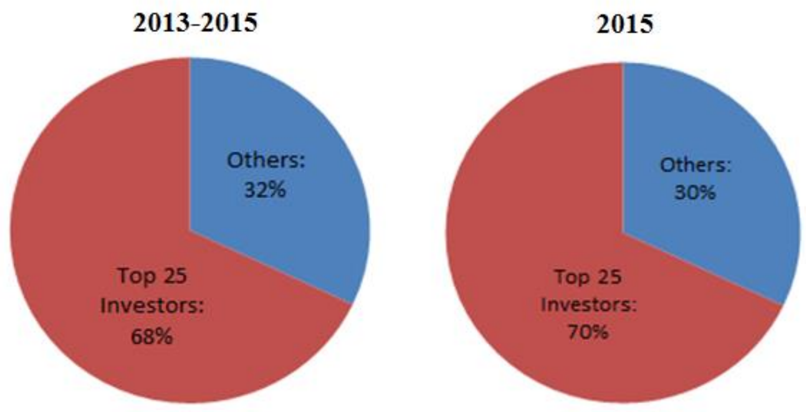
Developing broad investor participation in the Enterprises' credit risk transfer programs is a high FHFA priority. Having a broad investor base will help enable the Enterprises to maintain their programs in different market conditions (such as times when some investors reduce their risk appetite or seek higher risk adjusted returns in other markets) or changing economic conditions (including a future economic or housing downturn).

While the Enterprises have had good investor interest in their credit risk transfer programs thus far, efforts continue to expand investor participation in this market, which could have a beneficial impact on credit risk transfer pricing. Building a deeper investor base will require, in addition to concerted outreach to potential investors by the Enterprises, addressing some other perceived or real barriers to participation, including tax law interpretations, investor and dealer capital requirements, and regulatory or business rule constraints with regard to the security structure. For instance, CAS and STACR transactions do not meet all of the current Internal Revenue Service income and asset tests for regulated investment company status, which significantly limits participation by real estate investment trusts (REIT). In addition, the current capital treatment of securitized assets limits bank investment and secondary market liquidity. FHFA and the Enterprises are working with both the investor and regulatory community to address such hurdles where feasible and appropriate.

Since 2013, the Enterprises have transferred credit risk to a wide variety of institutional investors, including asset managers, hedge funds, insurance and reinsurance companies, banks, sovereign funds, REITs, and lenders. To date, more than 100 unique investors have participated in both the CAS and STACR programs, while several dozen more have focused on issuances from a single Enterprise. In 2015, each CAS and STACR transaction averaged over 50 investors and the Enterprises attracted more than 40 new investors. Figure 2 shows that the top 25 investors (ranked by the total amount invested) have purchased approximately 68 percent of all CAS and STACR issuances to date.

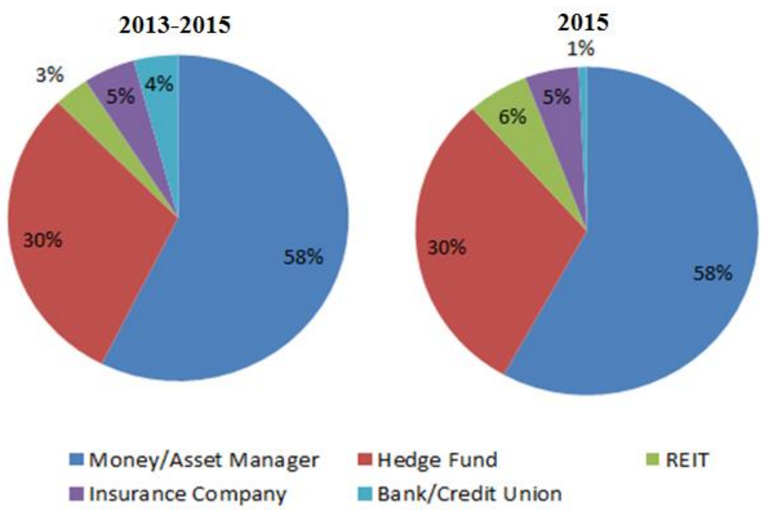
Figure 3 shows the distribution of investor type for all STACR and CAS issuances in 2015 and from 2013 to 2015. Money/asset managers and hedge funds comprised approximately 88 percent of this investor group, with money/asset managers representing the largest buyers of rated CAS and STACR notes and hedge funds focusing on higher yielding, but unrated, credit risk transfer notes. Other investor types such as REITs, insurance companies, and banks/credit unions have limited their participation because of tax law constraints, capital requirements, or for other reasons.

Figure 2: Investor Concentration for CAS and STACR Issuances



Source: FHFA

Figure 3: Investor Composition for CAS and STACR Issuances



Source: FHFA

Cost of Credit Risk Transfer Transactions

The Enterprises incur a cost to transfer credit risk, and FHFA works with the Enterprises to monitor these costs and assess whether transactions are cost effective. The cost of credit risk transfer transactions differs depending on the product used. The cost of each credit risk transfer, however, depends on a variety of factors, including the amount of credit risk being transferred, investor assessment of the risk being transferred, and market demand for such investments.

To provide illustrative information about the costs of credit risk transfer transactions, Table 6 details a range of cost estimates for STACR/CAS transactions based on an FHFA analysis using publically available data.[16] While these ranges are not intended to provide precise cost figures, Table 6 reflects the type of scenario analysis that the Enterprises and investors use to develop cost estimates. For purposes of this discussion, the cost estimates are presented as an annualized guarantee fee concession, and the calculations assume that 100 percent of the different STACR/CAS tranches were sold.[17]

The range of estimated guarantee fee concessions is calculated by using three hypothetical baseline scenarios that reflect different assumptions about mortgage prepayment speeds and default rates. The prepayment and default assumptions are used to calculate the weighted average life of the STACR/CAS notes, which is then multiplied by the premium (interest rate) on the STACR/CAS notes sold to investors to determine an annualized cost to the Enterprises.

An increase in prepayments can shorten the weighted average life of the STACR and CAS notes, which reduces the actual amount of credit risk protection provided. The possibility of declining credit risk protection is partially mitigated through incorporating deal triggers into the transactions. These triggers can be structured to halt the flow of prepayments to the mezzanine and first loss tranches if either cumulative default or credit enhancement tests are not met, indicating an insufficient level of credit protection.

As illustrated, there is significant variation in estimated guarantee fee concessions across issuances. Part of this variation is a result of changes in both the amount and type of credit risk being sold. For instance, Freddie Mac's estimated guarantee fee concessions increased

[16] It is important to note that the Enterprises, as well as outside analysts, may calculate different guarantee fee concession estimates due to alternate methodologies and varying prepayment and default assumptions.
[17] In practice, the Enterprises retain at least five percent of the UPB of mortgages included in STACR/CAS reference pools. If a first loss or B tranche is issued, the Enterprises generally retain a large portion (e.g., 50 percent) of the risk. Because the scenario analysis assumes that 100 percent of all STACR/CAS tranches were sold, the guarantee fee concession estimates overstate the costs that Fannie Mae and Freddie Mac actually incurred on these transactions.

significantly in 2015 because Freddie Mac began selling STACR notes that transferred first losses, the B tranche that begins with an attachment point of zero. This results in a higher estimated guarantee fee concession. Transferring the first credit loss tranches to investors is more expensive than transferring intermediate credit losses because of the greater certainty of actual loss, which results in higher premium costs.

Table 6: Estimated Guarantee Fee Concessions for CAS and STACR Transactions

Transaction[1]	Date of Issuance	Attach/Detach Points	Range of Concession Estimates[2]	Average Guarantee Fee[3]	Note Size (in millions of $)	Notional Coverage
STACR Issuances						
2013-DN1	7/26/13	30, 300	15 – 18	57	500	2.7%
2013-DN2	11/12/13	30, 300	9 – 11	57	630	2.7%
2014-DN1	2/12/14	30, 450	16 – 16.5	63	1,008	4.2%
2014-DN2	4/9/14	30, 450	12.5 – 13	63	966	4.2%
2014-DN3	8/11/14	40, 460	15 – 17	63	672	4.2%
2014-DN4	10/28/14	50, 520	18 – 21	63	611	4.7%
2015-DN1	2/3/15	0, 450	30 – 37	66	880	4.5%
2015-DNA1	4/28/15	0, 425	24 – 29	66	1,010	4.3%
2015-DNA2	6/29/15	0, 550	30 – 35	66	950	5.5%
2015-DNA3	11/9/15	0, 585	34 – 40	66	1,070	5.9%
CAS Issuances						
2013-1	10/24/13	30, 300	11 – 12	57	675	2.7%
2014-1	1/27/14	30, 300	9 – 10	63	750	2.7%
2014-2 (Group 1)	5/26/14	30, 300	5 – 6	63	1,200	2.7%
2014-3 (Group 1)	7/25/14	30, 300	6 – 8	63	1,500	2.7%
2014-4 (Group 1)	11/25/14	30, 300	11 – 13	63	919	2.7%
2015-1 (Group 1)	2/26/15	40, 350	10 – 12	66	924	3.1%
2015-2 (Group 1)	5/19/15	40, 375	12 – 14	66	891	3.4%
2015-3 (Group 1)	7/22/15	40, 375	15 – 18	66	899	3.4%
2015-4 (Group 1)	10/23/15	50, 400	18 – 23	66	894	3.5%

[1]Analysis is focused on STACR DN and Group 1 CAS transactions which are linked to reference pools containing 60-80% original LTV loans.

[2]Annualized guarantee fee concession estimates are calculated as of the date of bond issuance. They are computed using weighted average life estimates from Bloomberg based upon three hypothetical baseline scenarios. Scenario # 1: Constant Prepayment Rate (CPR) = 5%, Constant Default Rate (CDR) = 0.4%, Loss Given Default (LGD) = 25%; Scenario #2: CPR = 10%, CDR = 0.2%, LGD = 25%; Scenario #3: CPR = 20%, CDR = 0.1%, LGD = 25%. To simplify the analysis, the calculations assume that 100% of the STACR/CAS notes are sold (nothing is retained).

[3]Average guarantee fees are calculated based upon Fannie Mae and Freddie Mac single-family, 30-year, fixed rate, 60-80% LTV loan acquisitions for a given calendar year. These numbers do not necessarily reflect the average guarantee fee associated with a particular reference pool.

Source: FHFA

Guarantee fee concessions can also vary over time due to changes in investor sentiment stemming from the prevailing macroeconomic outlook as well as investor assessment of the inherent credit risk in STACR and CAS reference pools. Thus far, investor sentiment has likely been more influenced by economic conditions than by any significant evolution in the inherent credit risk of the reference pools.

To put these guarantee fee concession estimates into context, Table 7 provides an approximation of the various cost components underlying a guarantee fee. The values listed in Table 7 are estimates based upon a number of simplifying assumptions and are only intended to provide a general indication of the cost components of an average guarantee fee.

Table 7: Estimated Cost Components of the Average 2015 Enterprise Guarantee Fee (loans with LTVs between 60 and 80 percent)

Average Guarantee Fee[1]	**66 bps**
(a) Allocated to the U.S. Department of Treasury[2]	10 bps
(b) General and administration expenses and securitization costs	8 bps - 10 bps
(c) Residual risks not transferred through STACR and CAS[3]	5 bps - 10 bps
(d) Market implied cost of transferring expected and unexpected credit losses[4]	30 bps - 40 bps
(e) Sum of cost components	**53 bps - 70 bps**

[1]Based on the average Freddie Mac and Fannie Mae guarantee fees on 30-year fixed rate loans with original LTVs between 60 and 80 percent.

[2]Required under the Temporary Payroll Tax Cut Continuation Act of 2011.

[3]Residual risks include operational risk, legal risk, counterparty risk, term risk, and catastrophic risk.

[4]Estimated based upon range of guarantee fee concessions associated with 2015 STACR issuances, which involve the transfer of both expected and unexpected losses. The 2015 STACR-DNA1 reference pool is excluded from this analysis because it consisted of seasoned loans that were originated in 2012 and subject to three years of positive house price appreciation. The range of guarantee fee concessions associated with this seasoned collateral is not reflective of the market implied cost of transferring risk on more recent acquisitions.

Source: FHFA

In 2015, Fannie Mae and Freddie Mac charged an average guarantee fee of 66 basis points on single-family, 30-year fixed-rate loans with original LTVs between 60 and 80 percent. As illustrated in line (a), 10 basis points of this guarantee fee are allocated to the U.S. Department of the Treasury as required by the Temporary Payroll Tax Cut Continuation Act of 2011.[18] Of the remaining guarantee fee, line (b) reflects 8 to 10 basis points allocated for general and administrative expenses and securitization costs; line (c) reflects 5 to 10 basis points allocated for other sources of risk not transferred through the STACR and CAS issuances such as operational risk, legal risk, counterparty risk, term risk, and catastrophic risk;[19] and line (d) reflects an estimate for the market implied cost of transferring expected and unexpected credit losses.

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[18] See section 401, codified at 12 USC sec. 4547.

[19] Because our guarantee fee concession estimates assume 100 percent of all STACR/CAS tranches are sold, the residual risks detailed in row (c) do not include the five percent of the reference pool UPB which the Enterprises generally retain.

Table 7 draws from the guarantee fee concession estimates used for three STACR transactions in 2015 (2015 STACR-DN1, 2015 STACR-DNA2 and 2015 STACR-DNA3) that are reflected in Table 6.[20,21] These three transactions are useful to highlight as examples for several reasons. As mentioned earlier, these transactions transferred credit losses that include first losses, with by an attachment point of zero. As a result, these three transactions transfer a larger amount of credit risk than other STACR/CAS transactions. This combination of factors simplifies the illustration of how the costs of credit risk transfer transactions relate to the guarantee fees charged by the Enterprises. Additionally, the loans in these transactions had LTVs between 60 and 80 percent, which aligns with the LTVs of the loans used to calculate the average guarantee fee amount included in Table 7.

FHFA will continue to work with the Enterprises to oversee the effectiveness of their credit risk transfer programs. An important component of these efforts will be to build on the information included in this Progress Report by providing ongoing information about the cost of credit risk transfer transactions and the amount of credit risk transferred to private market participants.

[20] The average guarantee fee of 66 basis points used in Table 7 does not reflect the average guarantee fee for the loans included in 2015 STACR-DNA2 and 2015 STACR-DNA3, which collectively include loans purchased in both 2014 and 2015. As has been stated earlier, the figures included in Table 7 are intended to provide estimates of the cost components of the Enterprises' guarantee fees, not actual costs.

[21] In calculating this range, the premiums associated with the 2015 STACR-DNA1issuance are not included because the associated reference pool consists of seasoned loans, originated in 2012 and subject to three years of positive house price appreciation.