Executive Message

Freddie Mac is dedicated to improving the U.S. housing finance system. Our single-family credit risk transfer (CRT) program, established in 2013, is designed to reduce credit risk exposure to U.S. taxpayers while providing unique opportunities for the private sector to participate in the U.S. single-family residential credit market.

The goal of this handbook is to familiarize the private sector with Freddie Mac's complementary capital markets and (re)insurance CRT executions, STACR and ACIS, and our exclusive insured-placed mortgage insurance, IMAGIN. It also provides a close up of Freddie Mac’s risk management framework and quarterly U.S. housing statistics.

--Mike Reynolds, Vice President, Single-Family Credit Risk Transfer
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Development of an Asset Class
Freddie Mac was chartered by the federal government in 1970 to provide liquidity, stability, and affordability to the housing market.

1. **Lenders originate loans.** Lenders include banks, credit unions, mortgage brokers and others. They originate loans per the Single-Family Seller/Servicer Guide and sell loans to Freddie Mac.

2. **Freddie Mac overlays its credit risk management framework on purchased loans, ensuring loan quality.** Underwriting and Quality Control processes take advantage of proprietary data models and intelligent automation to ensure all loans meet Freddie Mac underwriting standards.

3. **Interest rate risk is passed through to investors by guaranteed Uniform Mortgage Backed Securities (UMBS).** Investors include Federal Reserve, money managers, hedge funds, banks, credit unions and more.

4. **Credit investors gain exposure to the U.S. mortgage market through innovative risk-sharing offerings.** Investors include money managers, hedge funds, (re)insurers, REITs, insurance companies and other investors.
Sustainable Business Model

Buy and Hold Credit Risk

Old Model

Mortgage
Lenders

Credit Risk
Interest Rate Risk
Freddie Mac

Credit Risk
Freddie Mac

Interest Rate Risk
Investors

Buy and Transfer Credit Risk

New Model

Mortgage
Lenders

Credit Risk
Interest Rate Risk
Freddie Mac

Mortgage
Freddie Mac

Credit Risk
Interest Rate Risk
Investors

Interest Rate Risk Transfer
Uniform Mortgage Backed Securities (UMBS): pass-through securities representing an undivided interest in a pool of residential mortgages which transfer interest rate risk to investors. Freddie Mac guarantees the timely payment of interest and scheduled principal on all UMBS’ issued by Freddie Mac.

Credit Risk Transfer
Structured Agency Credit Risk (STACR®) Trust: Freddie Mac’s flagship securitization credit risk sharing vehicle. STACR transactions transfer risk to the private capital markets through the issuance of unsecured and non-guaranteed notes. The bankruptcy-remote trust makes periodic payments of principal and interest on the notes to investors.

Agency Credit Insurance Structure (ACIS®): Freddie Mac’s flagship insurance-based credit risk sharing vehicle. ACIS transactions are insurance policies issued by or ceded to global (re)insurance companies to cover a portion of credit risk on the STACR or standalone reference pools. Freddie Mac pays monthly premiums to (re)insurers, based on their tranche participation, in exchange for claim coverage on their portion of the reference pool.
Development of an Asset Class

Timeline

Developed Concept
• Freddie Mac Single-Family CRT team established

2012

Established Market
• Issued first STACR and ACIS fixed-severity transactions (60-80% LTV fixed-rate collateral)

2013

Generated Momentum
• Introduced HQ series (>80% LTV)

2014

Created Scale and Depth
• Began transferring actual loss in lieu of fixed severity

2015

Expanded Opportunity
• Issued first ACIS 15-year standalone transaction

2016

Strengthened Structure
• Issued first STACR Trust transaction
• Issued Class B-2 notes and extended STACR term to 30 years
• Launched IMAGIN, (Integrated Mortgage Insurance)

2017

Broadened Focus
• Issued first STACR HARP transaction

2018

Leveraged Success
• Issued first FTR transaction (seasoned B-2 notes)
• Released Clarity data intelligence portal
• Issued first STACR REMIC transaction

2019

Driving to Exit Conservatorship while Adapting to Market Environment

2020

Driving to Exit Conservatorship while Adapting to Market Environment
## Development of an Asset Class

### Single-Family CRT by the Numbers

<table>
<thead>
<tr>
<th>7</th>
<th>130+</th>
<th>260+</th>
<th>$2.8 Billion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years Since First Transaction</td>
<td>Transactions Issued Across Single-Family CRT Offerings</td>
<td>Unique Investors in Single-Family CRT Offerings</td>
<td>Average Trading per Month in Secondary Market for 2020</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>$58 Billion</th>
<th>$1.6 Trillion</th>
<th>52%</th>
<th>77%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Transferred to Private Capital on Single-Family Mortgages</td>
<td>Single-Family Mortgages with Credit Risk Protection</td>
<td>Portion of Single-Family Portfolio with Credit Risk Protection</td>
<td>Reduction in Conservatorship Capital Needed For Credit Risk</td>
</tr>
</tbody>
</table>

**Source:** Freddie Mac, as of Q2 2020.

**Note:** Includes STACR, ACIS, certain senior subordination securitization structures, and certain lender risk-sharing transactions Average trading per month in secondary market for 2020.
Development of an Asset Class

**STACR/ACIS CRT Growth**

<table>
<thead>
<tr>
<th>Year</th>
<th>Outstanding reference pool UPB as a percentage of total single-family portfolio</th>
<th>Reference pool UPB at issuance</th>
<th>Reference pool UPB outstanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>26%</td>
<td>$598</td>
<td>$457</td>
</tr>
<tr>
<td>2017</td>
<td>35%</td>
<td>$858</td>
<td>$648</td>
</tr>
<tr>
<td>2018</td>
<td>44%</td>
<td>$1,144</td>
<td>$1,144</td>
</tr>
<tr>
<td>2019</td>
<td>45%</td>
<td>$1,376</td>
<td>$906</td>
</tr>
<tr>
<td>YTD 2020*</td>
<td>43%</td>
<td>$1,526</td>
<td>$896</td>
</tr>
</tbody>
</table>

Source: Freddie Mac, as of 6/30/2020.
Note: Slide reflects STACR and ACIS CRT transactions only. It excludes senior subordinate securitization structures and lender risk-sharing transactions.

**Cumulative Single-Family Transferred Credit Risk Based on Outstanding Balance at Period End ($Billions)**

- First loss positions: Retained by Freddie Mac
- Mezzanine loss positions: Retained by Freddie Mac
- First loss positions: Transferred to third parties
- Mezzanine loss positions: Transferred to third parties
Key Offerings

**SEcurities**

**STACR®**
Structured Agency Credit Risk
Freddie Mac Single-Family’s flagship CRT offering, where non-guaranteed notes are issued across multiple tranches, and reference pool performance determines payments.

**Series**
- **DNA**: On-the-run, original LTV of 61-80%
- **HQA**: On-the-run, original LTV of 81-97%
- **HRP**: HARP and Relief Refi collateral
- **FTR**: Off-the-run, seasoned B collateral
- **SPI**: Fully collateralized non-synthetic transactions

**RE)Insurance Contracts**

**ACIS®**
Agency Credit Insurance Structure
Freddie Mac’s flagship (re)insurance offering provides (re)insurers the opportunity to gain broad exposure to the U.S. housing market alongside STACR investors.

**Series**
- **DNA**: On-the-run, original LTV of 61-80%
- **HQA**: On-the-run, original LTV of 81-97%
- **SAP**: 15-year collateral
- **ARMR**: HARP and Relief Refi collateral
- **FTR**: Off-the-run, seasoned B collateral
- **AFRM**: Forward transactions

**Mortgage Insurance**

**IMAGIN**
Integrated Mortgage Insurance
An enhanced form of mortgage insurance negotiated by Freddie Mac, allowing global (re)insurers to participate in the low-downpayment market on a loan-level, flow basis.
Development of an Asset Class

Clarity

Freddie Mac's data intelligence portal for the CRT community.

**New Clarity Features Now Available**
- Borrower Assistance, ACE and Disaster filters within Origination Dashboards
- Delinquency Matrix dashboard
- Disaster-related performance dashboard
- Dashboards to slice the Single Family historical dataset

**Advanced Filters for Quick Performance Analysis**
Clarity’s preset configurations offer quick, clear views into Freddie Mac CRT data and make it easy for any user to get valuable insights quickly. Easily export and download charts to your desktop – it’s that simple.

**Data Visualizations Bring Raw Numbers to Life**
Clarity’s data visualizations enhance understanding with crisp, clear information design that makes it easy to spot trends and zero in on key figures.

Clarity.FreddieMac.com
STACR and ACIS
1. Transaction Overview
## CRT Business Process

<table>
<thead>
<tr>
<th>Borrower</th>
<th>UMBS</th>
<th>CRT Eligibility</th>
<th>Transaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutions make loans to homeowners; Freddie Mac purchases or guarantees those loans</td>
<td>Loans purchased are grouped and sold to Uniform Mortgage Backed Securities (UMBS) investors, reducing interest rate risk held by Freddie Mac</td>
<td>Loans sold in UMBS securities that meet CRT eligibility criteria are included in a CRT reference pool</td>
<td>Once the reference pool is finalized, credit risk is transferred to investors through STACR &amp; ACIS transactions</td>
</tr>
</tbody>
</table>
Total Loans Securitized in UMBS Q1
$81 billion

Reference Pool Eligibility Criteria

- 100% fully amortizing
- Fixed-rate
- 1-to-4 unit
- First lien mortgage loans
- Original terms of 241-360 months
- No loans originated under Relief Refinance programs
- Meets transaction specific LTV criteria (61-80 LTV for DNA; 81-97 LTV for HQA)
- REMIC election made

Initial Cohort
$28 billion

Loan Performance Removals

- Incomplete data reconciliation
- Corrected data
- Repurchased
- Removed by QC process
- Paid in full
- Failed delinquency criteria
- Bankruptcy

Reference Pool
$26 billion

STACR & ACIS Transaction
STACR and ACIS Capital Structure

STACR and ACIS are complementary programs issued from the same reference pool for On-the-Run transactions.

Hypothetical Allocation of Principal Payments

Specified Credit and Modification Events

Class B-3H (Reference Tranche Only)

STACR Notes
- STACR M-1
- STACR M-2
- STACR B-1
- STACR B-2

ACIS Insurance Contracts
- ACIS M-1
- ACIS M-2
- ACIS B-1
- ACIS B-2

Retained Credit Risk
- Class M-1H
- Class M-2H
- Class B-1H
- Class B-2H

Reference Pool
The Class M-2A and Class M-2B Notes and corresponding Reference Tranches relate to the Class M-2 Notes. The Class M-2A and Class M-2B Notes are exchangeable for the Class M-2 Notes, and vice versa, as further described in the Term Sheet and Preliminary PPM. In addition, certain Classes of MAC Notes can be further exchanged for other Classes of MAC Notes, and vice versa, as further described in the Term Sheet and Preliminary PPM.

The Class B-1A and Class B-1B Notes and corresponding Reference Tranches relate to the Class B-1 Notes. The Class B-1A and Class B-1B Notes are exchangeable for the Class B-1 Notes, and vice versa, as further described in the Term Sheet and Preliminary PPM. In addition, certain Classes of MAC Notes can be further exchanged for other Classes of MAC Notes, and vice versa, as further described in the Term Sheet and Preliminary PPM.

The Class B-2A and Class B-2B Notes and corresponding Reference Tranches relate to the Class B-2 Notes. The Class B-2A and Class B-2B Notes are exchangeable for the Class B-2 Notes, and vice versa, as further described in the Term Sheet and Preliminary PPM. In addition, certain Classes of MAC Notes can be further exchanged for other Classes of MAC Notes, and vice versa, as further described in the Term Sheet and Preliminary PPM.
ACIS Structure

**Direct Policy**

Freddie Mac enters into/executes a primary insurance policy directly with Insurers.

- Insurer #1
- Insurer #2
- Insurer #3
- Insurer #4

- Collateral Trust

**Indirect Policy**

Freddie Mac enters into/executes a primary insurance policy with cell company.

- Cell Company
  - Net amount of claims and premiums flow through cell
  - Cell issues quota share reinsurance contract to the reinsurers

- Reinsurer #1
- Reinsurer #2
- Reinsurer #3
- Reinsurer #4

- Collateral Trust

Reinsurers, based on their license, have option to contract directly or indirectly (via cell company) with Freddie Mac.
# Transaction Example and Program Comparisons

## Transaction Overview

### Early Redemption

<table>
<thead>
<tr>
<th>Tranche</th>
<th>Loss Coverage</th>
<th>Expected Ratings</th>
<th>Balance</th>
<th>WAL</th>
<th>Principal Window</th>
<th>WAL</th>
<th>Principal Window</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attach</td>
<td>Detach</td>
<td></td>
<td>STACR</td>
<td>ACIS</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>M-1</td>
<td>3.50%</td>
<td>Investment Grade</td>
<td>$110m</td>
<td>$36m</td>
<td>1.2</td>
<td>6–25</td>
<td>1.2</td>
</tr>
<tr>
<td>M-2</td>
<td>1.10%</td>
<td>Rated</td>
<td>$352m</td>
<td>$115m</td>
<td>5.7</td>
<td>25–120</td>
<td>5.8</td>
</tr>
<tr>
<td>B-1</td>
<td>0.60%</td>
<td>Rated/Not Rated</td>
<td>$73m</td>
<td>$24m</td>
<td>10.0</td>
<td>120–120</td>
<td>12.9</td>
</tr>
<tr>
<td>B-2</td>
<td>0.10%</td>
<td>Not Rated</td>
<td>$73m</td>
<td>$24m</td>
<td>10.0</td>
<td>120–20</td>
<td>18.8</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>$608m</td>
<td>$199m</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Assume stated CPR & 0 CDR; WAL in years, principal window in months

### Maturity

<table>
<thead>
<tr>
<th>STACR</th>
<th>ACIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-year loan term</td>
<td>12.5 year</td>
</tr>
</tbody>
</table>

### Early Termination

<table>
<thead>
<tr>
<th>STACR</th>
<th>ACIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earlier of: (a) 10% or less pool factor or (b) on or after 120&lt;sup&gt;th&lt;/sup&gt; payment date (10 years)</td>
<td>5 year; If not called at year 5 reverts to STACR language</td>
</tr>
</tbody>
</table>

### Qualified Buyer

<table>
<thead>
<tr>
<th>STACR</th>
<th>ACIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualified Institutional Buyer “QIB”</td>
<td>Approved Counterparty</td>
</tr>
</tbody>
</table>

### Coupon

<table>
<thead>
<tr>
<th>STACR</th>
<th>ACIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Month Libor plus spread</td>
<td>Fixed rate</td>
</tr>
</tbody>
</table>

### Liquidity

<table>
<thead>
<tr>
<th>STACR</th>
<th>ACIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-10 broker/dealers make active markets daily</td>
<td>Investor posts collateral for a portion of risk insured; buy and hold position with the ability to seek further reinsurance from a third party; interest paid based on notional amount</td>
</tr>
</tbody>
</table>

### Triggers

<table>
<thead>
<tr>
<th>STACR</th>
<th>ACIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Minimum Credit Enhancement Test</td>
<td>Same as STACR</td>
</tr>
<tr>
<td>• Delinquency Test</td>
<td></td>
</tr>
<tr>
<td>• Cumulative Net Loss Test</td>
<td></td>
</tr>
</tbody>
</table>

### Other

<table>
<thead>
<tr>
<th>STACR</th>
<th>ACIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 144A Compliant</td>
<td>N/A</td>
</tr>
<tr>
<td>• Minimum Denomination $10,000</td>
<td></td>
</tr>
<tr>
<td>• Minimum Increment $1</td>
<td></td>
</tr>
</tbody>
</table>
### Disposition Loss

#### Allocation of Disposition Loss

<table>
<thead>
<tr>
<th></th>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Class B-3 Principal</td>
<td>UPB at time of removal from the Reference Pool (including prior principal forgiveness)</td>
</tr>
<tr>
<td>2</td>
<td>Class B-2 Principal</td>
<td>Net Sales Proceeds</td>
</tr>
<tr>
<td>3</td>
<td>Class B-1 Principal</td>
<td>Delinquent Accrued Interest (Non-Capitalized)</td>
</tr>
<tr>
<td>4</td>
<td>Class M-2 Principal</td>
<td>Interest Bearing UPB * min(Note Rate – 35bps, Accounting Net Yield) * (# of Months Delinquent/12)</td>
</tr>
<tr>
<td>5</td>
<td>Class M-1 Principal</td>
<td>Taxes and Insurance</td>
</tr>
<tr>
<td>6</td>
<td>Class A Principal</td>
<td>Legal Costs</td>
</tr>
<tr>
<td>7</td>
<td>Maintenance and Preservation Costs</td>
<td>(e.g. Property Inspection, HOA, Utilities, Rental Receipts, REO Management, etc.)</td>
</tr>
<tr>
<td>8</td>
<td>MI Proceeds</td>
<td>(Total Claim Amount * Coverage %)</td>
</tr>
<tr>
<td>9</td>
<td>Miscellaneous Expenses</td>
<td>(e.g. BPO, other sales expenses not included in item 2 above)</td>
</tr>
<tr>
<td></td>
<td>Miscellaneous Credits</td>
<td>(e.g. Positive Escrow, Insurance Refunds, Hazard Claim Proceeds, Make Whole Events, etc.)</td>
</tr>
</tbody>
</table>

**Disposition Loss =**

**Note:** For illustrative purposes only.
### Modification Loss

#### Allocation of Modification Loss

<table>
<thead>
<tr>
<th>Modification Hierarchy</th>
<th>Investor Impact</th>
<th>Borrower Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term Extension</td>
<td>No Impact</td>
<td>Loan term is extended to reduce borrower monthly payments</td>
</tr>
<tr>
<td>Interest Rate Reduction</td>
<td>Loss of interest from rate change</td>
<td>Reduces monthly payment</td>
</tr>
<tr>
<td>Principal Forbearance</td>
<td>Loss of interest as principal with forbearance is non-interest bearing</td>
<td>Suspension of mortgage payments for a specific period of time which is paid as a balloon payment upon termination of the loan</td>
</tr>
</tbody>
</table>

**Modification Loss =**

1. **(+)** Modification Costs  
   e.g. Interest Short Fall (Passed to investors on a monthly basis included in modification loss amount)

2. **(+)** Bankruptcy Cramdown Costs (Passed to investors on a monthly basis included in write down loss amount)

---

**Note:** For illustrative purposes only.
2. Investors and Liquidity

STACR and ACIS
Investor Participation at Issuance

Source: Freddie Mac, as of July 2020. Note: In addition to the participation shown above, ACIS is generally responsible for 25% of each tranche issued for (Re)insurer participation.
STACR Trading Volume

Monthly Trading Volume Over Trailing 12 Months

Average Trading Volume per Month

<table>
<thead>
<tr>
<th>Year</th>
<th>Nominal ($billions)</th>
<th>% of Outstanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>0.3</td>
<td>48%</td>
</tr>
<tr>
<td>2014</td>
<td>0.6</td>
<td>20%</td>
</tr>
<tr>
<td>2015</td>
<td>1.1</td>
<td>13%</td>
</tr>
<tr>
<td>2016</td>
<td>1.5</td>
<td>11%</td>
</tr>
<tr>
<td>2017</td>
<td>1.9</td>
<td>12%</td>
</tr>
<tr>
<td>2018</td>
<td>1.7</td>
<td>8%</td>
</tr>
<tr>
<td>2019</td>
<td>2.0</td>
<td>8%</td>
</tr>
<tr>
<td>2020</td>
<td>2.8</td>
<td>11%</td>
</tr>
</tbody>
</table>

Source: Freddie Mac, as of July 2020. Note: Trading volumes reflect the sum of all buy and sell trades.
Investors and Liquidity

STACR Issuance and Ratings

Cumulative Issuance

<table>
<thead>
<tr>
<th>Year</th>
<th>Issuance ($billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>1.1</td>
</tr>
<tr>
<td>2014</td>
<td>1.6</td>
</tr>
<tr>
<td>2015</td>
<td>9.4</td>
</tr>
<tr>
<td>2016</td>
<td>12.3</td>
</tr>
<tr>
<td>2017</td>
<td>17.2</td>
</tr>
<tr>
<td>2018</td>
<td>18.9</td>
</tr>
<tr>
<td>2019</td>
<td>20.1</td>
</tr>
<tr>
<td>2020</td>
<td>41.6</td>
</tr>
</tbody>
</table>

Source: Freddie Mac and Bloomberg, as of July 2020.
STACR Returns Summary

As of February 26, 2020

- CRTx RNI Upper Mezzanine
- CRTx RNI Lower Mezzanine
- CRTx RNI Subordinate
- S&P Index
- Bloomberg Barclays US Corp HY Index

As of August 10, 2020

- CRTx RNI Upper Mezzanine
- CRTx RNI Lower Mezzanine
- CRTx RNI Subordinate
- S&P Index
- Bloomberg Barclays US Corp HY Index

Source: CRTx® is a registered trademark and RNI™ (Rolling New Issue) is a trademark of Mark Fontanilla & Co., LLC., which tracks CRT securities issued in the most recent 12 months. S&P Index and Corp HY Index are sourced from Bloomberg.
ACIS Issuance

Flagship CRT offering and portfolio management tool
~$16 billion coverage placed since inception

Cumulative ACIS Issuance

- Pioneered first reinsurance transactions in GSE CRT market
- Developed key relationships with global reinsurers, brokers, and service providers

- Diversified reinsurer panel
- Launched ACIS Standalone, ACIS Forward (AFRM), ARMR series (HARP), and sold seasoned B2 risk
- Executed first Introduced 5-year call option

- 2nd largest quarter of issuance in program history ($1.1 B in Q1)
- Executed ACIS HQA3 in August 2020
- Restarting ACIS issuances
Investors and Liquidity

ACIS Returns Summary

ACIS Returns on Collateral vs. Reinsurer Returns on Common Equity

<table>
<thead>
<tr>
<th>Year</th>
<th>ACIS Returns</th>
<th>Aon's Reinsurance Aggregate (ARA) Return</th>
<th>ACIS Collateral Returns To Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>10.7%</td>
<td>11.3%</td>
<td>16.2%</td>
</tr>
<tr>
<td>2014</td>
<td>10.1%</td>
<td>8.4%</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>10.1%</td>
<td>2.7%</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>8.4%</td>
<td>4.2%</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** ACIS Returns to date as of 8/26/2019. ACIS premiums, losses, and returns on ongoing transactions are based on actual cashflow emergence to date. ACIS returns on collateral are tax adjusted and will vary by counterparty. Assumes U.S. tax rates. Aon’s Reinsurance Aggregate (ARA) Return on Equity measures net income attributable to common shareholders as a ratio to average common shareholders’ equity based on the following constituent reinsurers: Alleghany, Arch, Argo, Aspen, AXIS, Beazley, Everest Re, Fairfax, Hannover Re, Hiscox, Lancashire, MAPFRE, Markel, Munich Re, Partner Re, QBE, RenRe, SCOR, Swiss Re, Validus, and XL Catlin.
Rating Agency Upgrades

Over 160 STACR bonds have been upgraded from original to current rating since program inception.

Source: Bloomberg, ratings as of March 2020 for on-the-run DNA/HQA transactions since 2013.

Note: Class M-2 bonds from transactions with three mezzanine classes are excluded from the above analysis. *As of August 21, 2020, there are currently 7 STACR bonds on negative watchlists (MACR bonds are not included).
56 STACR bonds have an NAIC designation

Total NAIC Designations

Source: NAIC.
Note: The National Association of Insurance Commissioners 2019 Mortgage Reference Securities Report is not a substitute for or functional equivalent of the credit ratings of rating agencies and is not produced to permit investors to compare the likelihood of default or of full and timely payment between one or more securities. *Security weighted average life calculated as of December 31, 2019 assuming 10 CPR and 0 CDR. At this time, NAIC has not provided NAIC Designations for Freddie Mac’s Trust/REMIC CRT transactions at year-end 2019 (MACR bonds are not included).
3. Portfolio Trends and CRT Performance
The performance of 2009 and 2010 vintages are dramatically better than pre-crisis vintages despite falling house prices in early years.

Source: Data included in tables were derived from Freddie Mac’s Single-Family Loan Level Dataset (SF LLD) as of April 2020 refresh: Originations: 1999-December 31, 2018. Performance data: 1999 – June 30, 2019. Note: Loans with an LTV between 60% and 97%, Fixed Rate with term between 241-360.
Proxy Cohort Performance

Low LTV Series

Source: Freddie Mac Clarity/Proxy Cohort, as of August 2020. For illustrative purposes only.
Notes: Data included in the tables above are derived from the most recent release of Freddie Mac’s Single-Family Loan Level Dataset (SF LLD). Historical losses are weighted in proportion to the applicable deal’s cohorts of FICO and either OLTV or ELTV. Cumulative losses do not include modification losses. For more information, please reference the SF LLD website.
* Specified class takes 100% loss, assuming no principal payments.
Portfolio Trends and CRT Performance

Disaster Matrix Examples

Source: Freddie Mac Clarity/CRT/Performance/Disaster Matrix, as of June 2020. For illustrative purposes only.
## Collateral Profile: Low LTV Series

<table>
<thead>
<tr>
<th>Deal</th>
<th>OLTV</th>
<th>ELTV</th>
<th>FICO</th>
<th>DTI</th>
<th>Investor %</th>
<th>DTI &gt; 45 %</th>
<th>FICO &lt; 680 %</th>
<th>Home Possible %</th>
<th>ACE %</th>
<th>Forbearance %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020-DNA4</td>
<td>75</td>
<td>73</td>
<td>754</td>
<td>36</td>
<td>6.4%</td>
<td>14.9%</td>
<td>5.3%</td>
<td>1.4%</td>
<td>28.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td>2020-DNA3</td>
<td>75</td>
<td>71</td>
<td>755</td>
<td>36</td>
<td>6.0%</td>
<td>14.3%</td>
<td>5.0%</td>
<td>1.4%</td>
<td>24.7%</td>
<td>0.0%</td>
</tr>
<tr>
<td>2020-DNA2</td>
<td>76</td>
<td>74</td>
<td>755</td>
<td>36</td>
<td>6.0%</td>
<td>15.2%</td>
<td>5.5%</td>
<td>2.3%</td>
<td>17.2%</td>
<td>0.0%</td>
</tr>
<tr>
<td>2020-DNA1</td>
<td>76</td>
<td>74</td>
<td>752</td>
<td>36</td>
<td>8.6%</td>
<td>15.7%</td>
<td>6.5%</td>
<td>2.4%</td>
<td>11.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td>2019-DNA4</td>
<td>76</td>
<td>72</td>
<td>748</td>
<td>36</td>
<td>10.7%</td>
<td>17.2%</td>
<td>7.3%</td>
<td>2.3%</td>
<td>6.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td>2019-DNA3</td>
<td>76</td>
<td>72</td>
<td>750</td>
<td>36</td>
<td>9.7%</td>
<td>18.6%</td>
<td>7.7%</td>
<td>2.6%</td>
<td>5.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td>2019-DNA2</td>
<td>76</td>
<td>75</td>
<td>750</td>
<td>36</td>
<td>9.2%</td>
<td>18.8%</td>
<td>8.6%</td>
<td>4.2%</td>
<td>5.8%</td>
<td>0.0%</td>
</tr>
<tr>
<td>2019-DNA1</td>
<td>76</td>
<td>75</td>
<td>747</td>
<td>37</td>
<td>11.0%</td>
<td>18.4%</td>
<td>8.9%</td>
<td>2.8%</td>
<td>4.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>76</td>
<td>69</td>
<td>749</td>
<td>36</td>
<td>10.0%</td>
<td>16.9%</td>
<td>7.7%</td>
<td>2.8%</td>
<td>11.8%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Source: [Freddie Mac Clarity/Origination/Characteristics](https://www.freddiemac.com/clarity/), as of August 2020. More data fields available in Clarity. Note: Amounts shown are as of issuance.
Collateral Profile: High LTV Series

<table>
<thead>
<tr>
<th>Deal</th>
<th>OLTV</th>
<th>ELTV</th>
<th>FICO</th>
<th>DTI</th>
<th>Investor %</th>
<th>DTI &gt; 45 %</th>
<th>FICO &lt; 680 %</th>
<th>Home Possible %</th>
<th>ACE %</th>
<th>Forbearance %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020-HQA3</td>
<td>92</td>
<td>87</td>
<td>752</td>
<td>36</td>
<td>0.3%</td>
<td>11.1%</td>
<td>3.5%</td>
<td>13.6%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>2020-HQA2</td>
<td>92</td>
<td>90</td>
<td>750</td>
<td>37</td>
<td>0.3%</td>
<td>12.1%</td>
<td>3.8%</td>
<td>21.8%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>2020-HQA1</td>
<td>92</td>
<td>90</td>
<td>749</td>
<td>37</td>
<td>0.3%</td>
<td>12.9%</td>
<td>4.6%</td>
<td>23.1%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>2019-HQA4</td>
<td>93</td>
<td>89</td>
<td>745</td>
<td>38</td>
<td>0.5%</td>
<td>15.6%</td>
<td>5.8%</td>
<td>23.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>2019-HQA3</td>
<td>92</td>
<td>89</td>
<td>746</td>
<td>38</td>
<td>0.5%</td>
<td>16.0%</td>
<td>5.5%</td>
<td>24.3%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>2019-HQA2</td>
<td>93</td>
<td>90</td>
<td>746</td>
<td>37</td>
<td>0.4%</td>
<td>16.2%</td>
<td>5.7%</td>
<td>30.4%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>2019-HQA1</td>
<td>93</td>
<td>91</td>
<td>745</td>
<td>37</td>
<td>0.4%</td>
<td>15.5%</td>
<td>5.5%</td>
<td>26.2%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Average</td>
<td>92</td>
<td>90</td>
<td>748</td>
<td>37</td>
<td>0.4%</td>
<td>14.2%</td>
<td>4.9%</td>
<td>23.2%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Source: [Freddie Mac Clarity/Origination/Characteristics](https://www.freddiemac.com/clarity/), as of August 2020. More data fields available in Clarity. Note: Amounts shown are as of issuance.
Portfolio Trends and CRT Performance

Cumulative Net Losses by Series

Low LTV Series

High LTV Series

Weighted Average Cumulative Loss bps: 1.44

Weighted Average Cumulative Loss bps: 1.21

Source: Freddie Mac Clarity/Performance/Loss Details, as of August 2020. For illustrative purposes only.
Portfolio Trends and CRT Performance

Transition Matrix by Series

Low LTV Series, Actual Loss

High LTV Series, Actual Loss

Source: Freddie Mac Clarity/Performance/Transition Matrix, as of August 2020. For illustrative purposes only.
# Serious Delinquency by Series

## DNA Delinquent Status (% of Current Balance)

<table>
<thead>
<tr>
<th>Quarter</th>
<th>D90</th>
<th>D120-D150</th>
<th>D180+ (Including BK/FC/REO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015-DNA1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015-DNA2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016-DNA1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016-DNA2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016-DNA3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017-DNA1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017-DNA2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017-DNA3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018-DNA1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018-DNA2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018-DNA3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019-DNA1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019-DNA2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019-DNA3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020-DNA1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020-DNA2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020-DNA3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## HQA Delinquent Status (% of Current Balance)

<table>
<thead>
<tr>
<th>Quarter</th>
<th>D90</th>
<th>D120-D150</th>
<th>D180+ (Including BK/FC/REO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015-HQA1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015-HQA2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016-HQA1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016-HQA2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016-HQA3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017-HQA1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017-HQA2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017-HQA3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018-HQA1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018-HQA2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018-HQA3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018-HQA4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019-HQA1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019-HQA2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019-HQA3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019-HQA4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020-HQA1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020-HQA2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: [Freddie Mac Clarity/Performance/Delinquency](https://www.freddiemac.com/clarity/performance/delinquency), as of July 2020. Stacked column charts created using D90, D120, D150, D180+ and REO data segments.
Voluntary Prepayment Rates by Series

DN/A Voluntary Prepayment Rate (% by Balance)

HQA Voluntary Prepayment Rate (% by Balance)

Source: Freddie Mac monthly remittance data, as of July 2020.

Source: Freddie Mac monthly remittance data, as of June 2020.
Portfolio Trends and CRT Performance

DNA Third-Party Base Expected Default and Loss

Collateral Expected Default and Loss at Issuance to Maturity

Disclaimer: The estimates shown above are for informational purposes only and delivered solely as reference material with respect to Freddie Mac. There is no assurance that the actual losses of the Reference Obligations will mirror the estimates shown above. The information contained in these materials may be based on assumptions regarding market conditions and other matters that may be of a proprietary nature to the model owners and unknown to Freddie Mac. The model owners have consented to Freddie Mac’s use and presentation of the estimates shown here, but do not make any representations that the information is accurate or complete. Neither Freddie Mac, nor the model owners, take responsibility for or make representations regarding the reasonableness of the underlying assumptions that form the basis of the estimates shown here or the likelihood that the estimates shown will coincide with actual market conditions or events and the estimates should not be relied upon for such purposes.
### HQA Third-Party Base Expected Default and Loss

#### Collateral Expected Default and Loss at Issuance to Maturity

<table>
<thead>
<tr>
<th></th>
<th>Cumulative Loss</th>
<th>Cumulative Default</th>
<th>B-2 Attachment</th>
<th>B-1 Attachment</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-HQA3</td>
<td>68</td>
<td>22</td>
<td>17</td>
<td>22</td>
</tr>
<tr>
<td>JP Morgan</td>
<td>149</td>
<td>22</td>
<td>17</td>
<td>22</td>
</tr>
<tr>
<td>BofA</td>
<td>95</td>
<td>95</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Credit Suisse</td>
<td>19-HQA4</td>
<td>146</td>
<td>20</td>
<td>19</td>
</tr>
<tr>
<td>JP Morgan</td>
<td>176</td>
<td>20</td>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td>BofA</td>
<td>90</td>
<td>90</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Credit Suisse</td>
<td>20-HQA1</td>
<td>155</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>JP Morgan</td>
<td>182</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>BofA</td>
<td>155</td>
<td>23</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Credit Suisse</td>
<td>20-HQA2</td>
<td>162</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>JP Morgan</td>
<td>155</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>BofA</td>
<td>142</td>
<td>22</td>
<td>22</td>
<td>22</td>
</tr>
</tbody>
</table>

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Estimated LTV Numbers

On-going positive house price appreciation allows borrowers to build equity, thereby reducing loan-to-value ratio and credit risk.

- Home Value Explorer® (HVE®) is a Freddie Mac AVM tool that generates an estimate of property value
- HVE provides extensive coverage of all 50 states and more than 3,100 counties with its database of ~100 million property records
- For more information on HVE visit: sf.freddiemac.com/tools-learning/home-value-suite/overview

Original LTV vs. Estimated LTV
(HQ Series)

Original LTV vs. Estimated LTV
(DN Series)

Source: Freddie Mac, as of July 2020. **Weighted average life was 28 months at issuance, typical transaction is between 9-12 months.
**Overview**

**IMAGIN is an enhanced form of front-end mortgage insurance negotiated by Freddie Mac on behalf of lenders**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Benefits</th>
</tr>
</thead>
</table>
| Introduces operational efficiencies to the mortgage market | Eliminates duplicative processes and shortens underwriting time  
Single underwriting guide and credit box for the lender  
Lenders and servicers work solely and directly with Freddie Mac |
| Lowers costs for lenders & borrowers | Reduces the traditional sales/operational costs of traditional MI  
Diversifies private capital sources  
Level playing field for lenders of all sizes – same pricing for all lenders |
| Enables better management of taxpayer exposure | Freddie Mac works with highly rated and diversified global reinsurers and MIs who place aside secured collateral to pay claim liabilities  
No ability for the insurer/reinsurer to unilaterally rescind coverage |
IMAGIN is chosen in lieu of standard MI and sells loan to Freddie Mac.

Freddie Mac bills Seller IMAGIN credit fee.

Protected cell company provides charter compliant MI coverage upon loan delivery.

Risk transferred to panel of reinsurers / MI companies.

IMAGIN

Structure

Borrower

Seller/ Servicer

Performs servicing activities in accordance with the Seller/Servicer Guide.

Loans reinsured by a panel of Freddie Mac chosen/approved reinsurers.

Back end operations (premium payments and claims) handled between Freddie Mac and investors.

Panel of Reinsurers / MI

Collateral Account

Reinsurers post collateral into trust account.
# Mortgage Insurance Comparison

<table>
<thead>
<tr>
<th>Feature</th>
<th>BPMI</th>
<th>LPMI</th>
<th>IMAGIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buyer of MI</td>
<td>Lender</td>
<td>Lender</td>
<td>Freddie Mac</td>
</tr>
<tr>
<td>MI Premium Paid By</td>
<td>Borrower</td>
<td>Lender</td>
<td>Freddie Mac</td>
</tr>
<tr>
<td>Payment of Coverage</td>
<td>One-time or monthly insurance payment</td>
<td>One-time, monthly, or annual payment which is built into the note rate</td>
<td>Similar to LPMI, the cost of IMAGIN is embedded in the borrower note rate</td>
</tr>
<tr>
<td>Lower Mortgage Payment Through Cancellation of the MI</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>MI Cancellation</td>
<td>Automatic cancellation once LTV drops below 78%</td>
<td>None – MI coverage exists for life of loan</td>
<td>None – MI coverage exists for 10-year term</td>
</tr>
<tr>
<td>MI Rescissions &amp; Denials</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Length/Term of Coverage</td>
<td>Terminates upon cancellation</td>
<td>Life of loan</td>
<td>10-year term</td>
</tr>
<tr>
<td>Policy</td>
<td>Approved MI companies – Selected by borrower/lender</td>
<td>Approved MI companies – Selected by borrower/lender</td>
<td>Negotiated by Freddie Mac</td>
</tr>
<tr>
<td>Origination Guidelines</td>
<td>GSE and MI Guidelines</td>
<td>GSE and MI Guidelines</td>
<td>Freddie Mac Guidelines</td>
</tr>
<tr>
<td>Loan Quality Reviews</td>
<td>GSE and MI Guidelines</td>
<td>GSE and MI Guidelines</td>
<td>Freddie Mac Quality Control</td>
</tr>
<tr>
<td>Loan Performance Reporting</td>
<td>Servicer works with both GSE and MI</td>
<td>Servicer works with both GSE and MI</td>
<td>Servicer works directly with Freddie Mac</td>
</tr>
<tr>
<td>Loss Mitigation and Property Disposition Approvals</td>
<td>GSE and MI Loss Mitigation and Approval requirements</td>
<td>GSE and MI Loss Mitigation and Approval requirements</td>
<td>Freddie Mac Loss Mitigation and Approval requirements</td>
</tr>
<tr>
<td>Claim Filing</td>
<td>Servicer files claims</td>
<td>Servicer files claims</td>
<td>Freddie Mac files claims</td>
</tr>
</tbody>
</table>
1. Overview
**Credit Risk Management Overview**

**Freddie Mac – Risk Management**

- **Underwriting Standards**
  - Documentation Standards and Credit Eligibility Requirements
  - Delegated Underwriting Guidelines
  - Seller Representations and Warranties
  - Loan Advisor®

- **Quality Control**
  - Post-Close Credit Review
  - Quality Assurance
  - Compliance Review
  - Performing Loan and Non-Performing Loan Quality Control Review
  - Due Diligence Review
  - Underwriting Defects Repurchase Process

- **Seller/Servicer Management**
  - Seller In-House Quality Control
  - Seller Servicer Approval Standards
  - Loan Servicer Performance Monitoring and Scorecard
  - CORE Reviews

**CRT is supported by an advanced risk management framework**
Underwriting Standards

Loan Advisor

Freddie Mac Loan Advisor® is a smart, end-to-end technology solution built to provide greater certainty about the quality of loans and offer insight into loans’ purchase eligibility early in the loan production process. Loan Advisor’s advanced analytics and modeling capabilities automate processes, catch errors and identify opportunities to reduce risk.

By the end of 2019, Freddie Mac’s goal is to have 100% of loans processed through Loan Product Advisor or Loan Quality Advisor.

Loan Advisor is set up so the Exclusionary List is only accessible by approved Seller-Servicers.

Loans sold to Freddie Mac must have documented evidence of the mortgagor’s ability to repay and of the value of the property.

Appraisal independence rules insulate the appraiser from influence by other parties involved in processing or originating the loan.

Representations & Warranties require the seller-servicer to repurchase the loan if there is a material underwriting defect discovered, subject to certain limits.

*does not include bulk deals
Loan Product Advisor®

Loan Product Advisor (LPA) is the cornerstone of Loan Advisor. LPA takes advantage of proprietary data models and intelligent automation to promote loan compliance with Freddie Mac underwriting standards.

Features innovative tools and offerings leveraging algorithms to enhance the origination process

- **Home Value Explorer® (HVE)**
  An automated Freddie Mac tool used to determine values of properties inside and outside of Freddie Mac.

- **Automated Collateral Evaluation (ACE)**
  An offering that eliminates the need for a traditional appraisal for properties that have valuations validated by HVE.

- **Asset and Income Modeler (AIM)**
  An Automated Underwriting System (AUS) solution used to verify borrower assets and income. AIM is the first and only AUS solution in the industry to also assess self-employed income.

Generates an assessment of a loan’s credit risk and overall quality

- Minimum credit score requirements
- Maximum debt-to-income ratio limits
- Maximum loan-to-value ratio limits
- Elimination of risky products (IOs, pay option ARMs, no documentation and balloons)
Quality Control (QC)

Freddie Mac performs QC on all purchased loans, including those that are credit enhanced by any of the CRT programs. Losses are mitigated through a comprehensive QC program across performing and non-performing loans, including third-party QC processes by lenders.

- **Performing Loan QC**
  - Regularly perform QC on a random and targeted basis to test the quality of recently purchased loans, including added focus on key elements of particular interest or concern (e.g., loan attributes or sellers).
  - Freddie Mac benchmarks every loan we purchase against our valuation model and appraisals are assessed within our automated system, Loan Collateral Advisor® for instantaneous feedback to the originator.
  - CRT transactions perform a separate Due Diligence review.

- **Non-Performing Loan QC**
  - Freddie Mac also reviews mortgage loans that default within the first few years after purchase or guarantee.

- **Seller In-House QC**
  - Each loan seller must have an in-house QC program that has written procedures and operates independently of the sellers’ origination and underwriting functions.
  - Freddie Mac reviews, monitors, and provides feedback on sellers’ QC and origination practices, including performing on-site reviews of its largest sellers.
## Seller/Servicer Management

Freddie Mac believes that a well-rounded view of servicing performance supports a broad and in-depth analysis of both performing and non-performing loans.

### Account Plans
- Focused on covered National, Regional and Community Servicers, Independent Mortgage Bankers, Specialty Servicers, Master Servicers and Subservicers.
- Sets goals and objectives, establishes agreed-upon action plans and milestones.

### File Reviews, Rewards and Remedies
- Identifies servicing performance gaps and trends, encourages and rewards quality servicing.
- Helps identify and resolve issues and provides consequences for poor data quality and servicing processes.

### Servicer Success Scorecard
- Covers Master, Interim, Sub and Consolidated servicing modes
- Performance evaluation specific to servicer segments (ranked groups), uses synthetics and ranks.
- Provides loan level data and analyses.
- **SHARP**\(^{SM}\) – **Servicer Honors and Rewards Program** enables eligible servicing clients to receive annual rewards based on completion of the Servicer Success Scorecard.

### Counterparty Operational Risk Evaluation (CORE)
- Identifies SF counterparty operational risk issues and monitors remediation.
- Provides assessment of Counterparty’s compliance with Guide Requirements.
- Conducts on-site due diligence of Servicers’ preparedness for large MSR transfers.
- Works closely with account managers and Single-Family Operations to ensure review scope addresses new/emerging risks.
2. Loss Mitigation
# Loss Mitigation Waterfall

<table>
<thead>
<tr>
<th>Payment Relief Options</th>
<th>Loan Modification Options</th>
<th>Liquidation Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Forbearance</td>
<td>5. Flex Modification</td>
<td>6. Applicable Credit Events</td>
</tr>
<tr>
<td>2. Reinstatement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Repayment Plan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Deferred Payment Alternatives</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 1. Forbearance
Provides a temporary reduction or suspension of payments to give borrowers a specified period of time to improve their financial situation. No mod loss impact.

### 2. Reinstatement
The most desirable resolution for a temporary hardship. Reinstatement is the act of restoring a delinquent Mortgage to current status.

### 3. Repayment Plan
Gives the borrower a defined period of time to reinstate the Mortgage following a temporary hardship by paying normal regular payments plus an additional agreed upon amount in repayment of the Delinquency.

### 4. Payment Deferral
A relief option for borrowers who became delinquent due to a short-term hardship that has since been resolved. Past due payments are deferred (non-interest bearing) and will be due at maturity, payoff date, or upon transfer or sale of the Mortgaged Premises.

#### COVID-19 Payment Deferral
Leverages a similar concept to the Payment Deferral solution. An eligible borrower will be brought current by deferring delinquent amounts to create a non-interest bearing balance that will become due at the earlier of the Mortgage maturity date, payoff date, or upon transfer or sale of the Mortgaged Premises.

#### Disaster Payment Deferral
As with the Payment Deferral and the COVID-19 Payment Deferral, under the terms of a Disaster Payment Deferral an eligible Borrower will be brought current by deferring delinquent amounts to create a non-interest bearing balance that will become due at the earlier of the Mortgage maturity date, payoff date or upon transfer or sale of the Mortgaged Premises.

### 5. Flex Modification
An affordable modification that provides significant payment relief to eligible borrowers, leverages requirements of the Freddie Mac Standard and Streamlined Modifications.

### 6. Applicable Credit Events
Credit Events such as short sale, third party sale, deed-in-lieu, foreclosure
Loss Mitigation

REO Overview

**Mission:** effectively manage Freddie Mac’s credit losses in a way that maximizes financial recoveries and supports community stabilization.

**Credit Loss Management**
- Improve Collateral Values
- Manage Expenses
- Maximize Remedies

**Community Stabilization**
- Preserve, Maintain, & Repair
- Price Homes At Fair Market Value
- Non-Profit / Owner Occupant Priority
REO Business Model & Process

Freddie Mac utilizes an asset management firm to perform the core REO disposition activities using the firm’s vendor network.

REO Core Process

The outsourcer and their vendors are required to use Freddie Mac systems, follow detailed policies & procedures, and utilize proprietary methodologies for valuation, pricing, and repair decisioning.

REO Support & Financial Functions

Freddie Mac staff perform oversight monitoring, support, and financial functions.

Freddie Mac: Oversight | Support | Financial Functions

Asset Management Firm (Outsourced)

- Listing Brokers
- P&M Vendors
- General Contractors
- Eviction Attorneys
- Title & Closing Agents
REO Core Competencies

Efficient & Controlled Processes
Mature, efficient, and controlled disposition processes that helped us effectively manage our REO portfolio during the last financial crisis. Processes are continually refined as business and market conditions change.

Valuation & Pricing Methodologies
Extensive disposition data and analytics used to develop pricing models and disposition strategies to maximize collateral recoveries.

Risk Management
Proven financial, liability and reputation risk management practices.

“Good Neighbor Policy”
REO homes are properly maintained and priced to protect communities. Nonprofit / Owner Occupant exclusive purchase opportunities.

Experienced Staff
Experienced and tenured staff & management team.
## Servicing Disaster Relief Timeline

**Disaster strikes**

**90 day forbearance begins**

**Servicer establishes Qualified Right party Contact (QRPC) to determine effect of disaster on homeowner**

**Servicer works with borrower to transition from forbearance into the appropriate modification option to cure the delinquency; (forbearance can continue for a maximum of 12 months)**

**If borrower was current or less than 31 days delinquent at time of the disaster and the servicer has established QRPC three main modifications are available:**

<table>
<thead>
<tr>
<th><strong>Disaster Modifications</strong></th>
<th><strong>Disaster Payment Deferral</strong></th>
<th><strong>General Modifications</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Extend Modification</strong></td>
<td>An eligible Borrower will be brought current by deferring delinquent amounts to create a non-interest bearing balance that will become due at the earlier of the Mortgage maturity date, payoff date or upon transfer or sale of the Mortgaged Premises.</td>
<td><strong>Flex Modification</strong></td>
</tr>
<tr>
<td>Borrower resumes close to contractual payment</td>
<td></td>
<td>Targeting a payment reduction of 20% or greater</td>
</tr>
<tr>
<td>Advanced escrow and escrow shortage is spread over up to 60 months in a repayment plan</td>
<td></td>
<td>Delinquencies (including advanced escrow) are capitalized</td>
</tr>
<tr>
<td>Term is only extended by number of payments missed</td>
<td></td>
<td>Term is extended up to 480 months</td>
</tr>
<tr>
<td><strong>Only available for borrowers affected by disaster</strong></td>
<td></td>
<td>May provide interest rate relief</td>
</tr>
</tbody>
</table>

**May result in principal forbearance**
Servicing Guidelines for Disaster Relief

Freddie Mac Disaster Policy goes into effect when:

A property located in a county, parish or municipality has been declared by the President of the United States to be a Major Disaster Area where federal aid in the form of Individual Assistance is being made available (Eligible Disaster Area*).

Servicers must assist borrowers with Freddie Mac-owned mortgages who work or reside in the designated eligible disaster area*

<table>
<thead>
<tr>
<th>Suspend Payments</th>
<th>for up to 12 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waive Fees</td>
<td>for being late and assessment of new penalties during forbearance, trial, or repayment plan periods</td>
</tr>
<tr>
<td>Disburse Insurance</td>
<td>proceeds</td>
</tr>
</tbody>
</table>

*Disaster policy also goes into effect if damaged property is outside of FEMA area, but has an insurable loss.
Sustaining Homeownership During COVID-19
Workout Options – What are they?

Relief Options

Reinstatement: An option to catch up on all the missed payments at once in a single lump-sum payment.

Repayment: An option to spread out past due amount on the mortgage over a set time frame (e.g., 3, 6, 9 or up to 12 months) and added onto the existing mortgage payments.

Payment Deferral: An option to defer up to two monthly delinquent amounts to create a non-interest bearing balance that will become due at the earlier of the mortgage maturity date, payoff date, or upon transfer or sale of the mortgaged premises.

COVID-19 Payment Deferral (Effective July 1, 2020): An option to defer up to twelve monthly delinquent amounts to create a non-interest bearing balance that will become due at the earlier of the mortgage maturity date, payoff date, or upon transfer or sale of the mortgaged premises. The hardship must be related to COVID-19.

Modification Options

Flex Modification: An option for borrowers who can no longer afford their pre-forbearance payment. It adds unpaid balances from a forbearance period to an unpaid loan balance. The payment reduction is calculated depending on the LTV.

Visit the COVID-19 Resources web page
3. Home Possible
Home Possible® Overview

Home Possible® offers flexibility to meet a variety of borrowers’ needs.

Borrower Profile

First-time homebuyers, move-up borrowers, and retirees

Effective July 28, 2019 all HP loans have the same income limits of 80% AMI, regardless of where the mortgage premise is located

Key Features

Purchase and no cash out refinancing.

Maximum 97 percent LTV/TLTV/HTLTV. 105 percent TLTV with Affordable Second.®

Sweat equity allowed for the entire amount of down payment and closing costs.

Mortgage insurance options

Loan Product Advisor or manual underwriting

No reserves required for 1-unit properties for manually underwritten mortgages.

Maximum credit fee in price of 1.5 percent, with no credit fee in price on many loans.

Borrower Benefits

Stable monthly payments with fixed-rate mortgages

Flexible sources of funds for down payment

Reduced mortgage insurance coverage for LTV ratios greater than 90%

Minimum down payment of 3% allowed.
Home Possible® Overview

<table>
<thead>
<tr>
<th>Feature</th>
<th>Home Possible</th>
<th>Standard Conventional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eligible Mortgages</td>
<td>15, 20, and 30-year fixed</td>
<td>15, 20, and 30-year fixed</td>
</tr>
<tr>
<td></td>
<td>5/1, 5/5, 7/1 and 10/1 CMT- and LIBOR-indexed ARMS</td>
<td>5/1, 5/5, 7/1 and 10/1 CMT- and LIBOR-indexed ARMS</td>
</tr>
<tr>
<td>Maximum LTV</td>
<td>1 Unit: 97%</td>
<td>95%</td>
</tr>
<tr>
<td></td>
<td>2-4 Unit: 95%</td>
<td></td>
</tr>
<tr>
<td>Maximum TLTV</td>
<td>105% affordable second</td>
<td>95%</td>
</tr>
<tr>
<td></td>
<td>97% secondary financing</td>
<td></td>
</tr>
<tr>
<td>Occupancy</td>
<td>1 to 4 unit primary residence</td>
<td>Primary residence, second home, or investment property</td>
</tr>
<tr>
<td>Property Type</td>
<td>1 to 4 unit: Single-Family, Condos, PUDs, Manufactured Housing (1-unit primary residences only)</td>
<td>1 to 4 unit: Single-Family, Condos, PUDs, Manufactured Housing</td>
</tr>
<tr>
<td>Other Income</td>
<td>Boader income (1-unit properties only)</td>
<td>All income considered</td>
</tr>
<tr>
<td>Mortgage Insurance</td>
<td>Lender Paid Single Premium MI and Financed Single Premium MI allowed</td>
<td>Lender Paid or Borrower Paid</td>
</tr>
<tr>
<td>Underwriting Method</td>
<td>Loan Product Advisor® (LPA) or Manual – LPA flags Home Possible eligible loans</td>
<td>LPA or LQA</td>
</tr>
<tr>
<td>No Credit Score Borrowers</td>
<td>Borrowers with no credit score can be evaluated through LPA</td>
<td>At least one borrower on the transaction must have a usable credit score</td>
</tr>
<tr>
<td>Income Limit</td>
<td>Determined by LPA; Non-LPA HP eligibility is determined by the HP Income and Eligibility Tool</td>
<td>No Income Limits</td>
</tr>
<tr>
<td>Geographic Limit</td>
<td>No Geographic Limits</td>
<td>No Geographic Limits</td>
</tr>
</tbody>
</table>

Mortgage Insurance Coverage Levels

<table>
<thead>
<tr>
<th>Home Possible Fixed Rate &gt;20yrs</th>
<th>Non-Home Possible Fixed Rate &gt;20yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>Custom*</td>
</tr>
<tr>
<td>Custom*</td>
<td>Standard</td>
</tr>
<tr>
<td></td>
<td>Custom*</td>
</tr>
<tr>
<td>&gt;80% &amp; ≤85% LTV</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>6%</td>
</tr>
<tr>
<td>&gt;85% &amp; ≤90% LTV</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>12%</td>
</tr>
<tr>
<td>&gt;90% &amp; ≤95% LTV</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>16%</td>
</tr>
<tr>
<td>&gt;95% &amp; ≤97% LTV</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>18%</td>
</tr>
</tbody>
</table>

*If custom mortgage insurance is chosen, in addition to all other applicable delivery fees, the custom mortgage insurance delivery fee applies, including on Home Possible Mortgages.
U.S. Housing Market Overview
U.S. Housing Market Overview

Home Value Trends

Total Value of U.S. Real Estate Held by Households ($trillions)

- Value of Housing Stock
- Home Equity
- Single-Family Mortgage Debt Outstanding
- Agency MBS

Note: Value of U.S. housing stock includes homes with and without underlying mortgages. U.S. home equity is the difference between the value of the U.S. housing stock and the amount of U.S. single-family mortgage debt outstanding.

Cumulative Increase of 21.7% Since June 2006 (NSA Series)

- 2020 Q1 Not Seasonally Adjusted (NSA) Index Growth: (1.23%)
- 2019 Q4 Seasonally Adjusted (SA) Index Growth: (-0.31%)

Source: Freddie Mac’s Single-Family credit guarantee portfolio. Quarterly growth rates are calculated as a 3-month change based on the final month of each quarter. Historical growth rates change as new data becomes available. Values for the most recent periods typically see the largest changes. Cumulative increase, based on the NSA series, calculated as the percent change from June 2006 to June 2020. Source: Freddie Mac.
U.S. Housing Market Overview

**Origination Trends**

*Source: Freddie Mac June 2020 Economic and Housing Research Outlook. Includes only 1st lien loans (F=forecast).*

*Source: U.S. Census Bureau.*
U.S. Housing Market Overview

Freddie Mac Housing Market Support

Number of Families Freddie Mac Helped to Own Or Rent A Home¹

Number of Single-Family Loan Workouts²

Source: Freddie Mac, as 6/30/2020. Notes: Totals may not add due to rounding.

1. Based on the company’s purchases of loans and issuances of mortgage-related securities. For the periods presented, a borrower may be counted more than once if the company purchased more than one loan (purchase or refinance mortgage) relating to the same borrower.

2. Consists of both home retention actions and foreclosure alternatives.

3. Categories are not mutually exclusive, and a borrower in one category may also be included in another category in the same or another period. For example, a borrower helped through a home retention action in one period may subsequently lose his or her home through a foreclosure alternative in a later period.
# Housing Market Outlook

## U.S. Housing Market Overview

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>30-year PMMS (%)</strong> a.</td>
<td>4.3</td>
<td>4.5</td>
<td>4.6</td>
<td>4.8</td>
<td>3.5</td>
<td>3.3</td>
<td>3.2</td>
<td>3.2</td>
</tr>
<tr>
<td><strong>Total Home Sales (M)</strong> b.</td>
<td>6.1</td>
<td>6.0</td>
<td>5.9</td>
<td>5.7</td>
<td>6.2</td>
<td>3.4</td>
<td>5.3</td>
<td>5.7</td>
</tr>
<tr>
<td><strong>House Price Growth (%)</strong> c.</td>
<td>2.0</td>
<td>1.0</td>
<td>1.1</td>
<td>1.0</td>
<td>0.8</td>
<td>-0.1</td>
<td>-0.1</td>
<td>-0.1</td>
</tr>
<tr>
<td><strong>Total Originations ($B)</strong> d.</td>
<td>$400</td>
<td>$462</td>
<td>$451</td>
<td>$387</td>
<td>$607</td>
<td>$541</td>
<td>$626</td>
<td>$578</td>
</tr>
<tr>
<td><strong>Purchase Originations ($B)</strong> d.</td>
<td>$233</td>
<td>$331</td>
<td>$329</td>
<td>$270</td>
<td>$230</td>
<td>$326</td>
<td>$369</td>
<td>$320</td>
</tr>
<tr>
<td><strong>Refinance Originations ($B)</strong> d.</td>
<td>$167</td>
<td>$131</td>
<td>$122</td>
<td>$117</td>
<td>$125</td>
<td>$203</td>
<td>$331</td>
<td>$435</td>
</tr>
</tbody>
</table>

**Source**: Freddie Mac Economic and Housing Research group, as of April 2020 ([freddiemac.com/research/forecast/20200413_quarterly_forecast_housing_challenges.page](http://freddiemac.com/research/forecast/20200413_quarterly_forecast_housing_challenges.page)). Send comments and questions to chief_economist@freddiemac.com.

**Notes**: Quarterly and annual forecasts (or estimates) are shown in shaded areas; totals may not add due to rounding; annual forecast data are averages of quarterly values.

a. Quarterly average of monthly interest rates (not seasonally-adjusted); reported as an annual rate.

b. Millions of housing units; total sales are the sum of new and existing single-family, condo/co-op home sales; quarterly averages of monthly, seasonally-adjusted levels (reported at an annual rate). Millions of housing units; quarterly averages of monthly, seasonally-adjusted levels (reported at an annual rate).

c. Quarterly growth rate of Freddie Mac's House Price Index; seasonally-adjusted; annual rates for yearly data.

d. Billions of dollars (not seasonally-adjusted). Includes only 1st lien mortgage originations.
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(571) 382-4376

Websites

CRT.FreddieMac.com | Clarity.FreddieMac.com
Freddie Mac has made available the Single-Family Loan-Level Dataset as part of a larger effort to increase transparency; The dataset includes loan-level origination and monthly loan performance data on over 26.6 million loans. 
freddiemac.com/research/datasets/sf_loanlevel_dataset.page

Additionally, Freddie Mac releases a STACR Loan-Level Dataset for all deals on a monthly basis. Access the data files, disclosure file layout, and glossary here: 
crt.freddiemac.com/offerings/stacr.aspx#overview-details

In 2019, CLARITY launched bringing further insight into Freddie Mac's CRT program. Origination and Performance metrics are available with new enhancements scheduled. 
clarity.freddiemac.com/

Additional information about Freddie Mac’s Single-Family CRT offerings including: issuance calendars, historical performance presentations, NAIC designations and more can be found at: 
crt.freddiemac.com/
Freddie Mac’s credit risk offerings have deep market support. Analyze and Model transactions using these tools:

<table>
<thead>
<tr>
<th>Freddie Mac CLARITY</th>
<th>Credit Suisse Locus Tool</th>
<th>Milliman M-Pire</th>
</tr>
</thead>
<tbody>
<tr>
<td>J.P. Morgan Morgan Markets</td>
<td>RiskSpan Edge</td>
<td></td>
</tr>
<tr>
<td>Bloomberg Terminal/BTM Model</td>
<td>CoreLogic Property Data Leader</td>
<td></td>
</tr>
<tr>
<td>LSEG Yield Book</td>
<td>TheNumber Analytics and Data Management</td>
<td></td>
</tr>
</tbody>
</table>
Resources

Disaster Relief Servicing Resources

COVID-19 CRT FAQs
[crt.freddiemac.com/_assets/docs/covid-19-crt-faqs.pdf]

COVID-19 Resources
[sf.freddiemac.com/about/covid-19#latest-updates]

Freddie Mac Disaster Relief Reference Guide
[freddiemac.com/learn/pdfs/service/disaster_mod.pdf]

Natural Disaster Relief web page:
[freddiemac.com/singlefamily/service/natural_disasters.html]

Managing Hazard Insurance Losses reference:
[freddiemac.com/learn/pdfs/service/mhil.pdf]

Guide Chapter 8404
[freddiemac.com/app/guide/chapter/8404]

Seller/Servicer Guide
[guide.freddiemac.com/app/guide/]

Freddie Mac | 2020
STACR Trust Structure

Freddie Mac STACR Trust

Credit premium and credit protection reimbursement payments

Payments of principal and interest on notes

Credit protection payments

Payments of principal and interest on notes

Earnings/liquidation proceeds of eligible investments

Proceeds of sale of notes

Eligible Investments

STACR Transaction
In 2014, new CFPB rules went into effect to provide homeowners and consumers shopping for a home mortgage with new rights and greater protection from harmful practices. Now, nearly every mortgage a lender makes must now be evaluated based on the borrower’s ability to repay. These new rules defined a new class of mortgages called “Qualified Mortgages” or “QM.”

**QM Common Rules:**
- A loan a borrower should be able to repay – lenders must assess a borrower’s ability to repay, in general the borrower must have a DTI of 43% or less including mortgage payments.
- Safer and easier to understand – no risky features like negative amortization or interest-only payments and terms of 30 years or less
- Fairer deal – limit the points and fees lenders can charge when they want to make a qualified mortgage to 3 percent

**“GSE Patch”:**
- If a loan made to a borrower is eligible for purchase by one of the GSEs or insured by FHA, VA, or USDA the loan may have a DTI higher than 43% with no maximum.
- This option exists until it expires on January 10, 2021 or when the GSEs exit conservatorship whichever occurs first; the FHA, VA, and USDA rules are permanent.
- Currently, there is no option for higher DTI loans past 2021 for the GSEs, but the CFPB is currently considering options
Enhanced Relief Refinance (ERR) is Freddie Mac’s high LTV ratio refinance program which was developed at the direction of the FHFA. ERR provides refinance opportunities to borrowers with existing Freddie Mac guaranteed mortgage loans who are making their mortgage payments on time but whose LTV ratio for a new mortgage exceeds the maximum allowed for standard refinance products under our Guide.

ERR substitution in CRT pools is subject to CFTC approval; after approval, loans in the reference pool that refinance through ERR will replace the original loans in the reference pool.

If Freddie Mac does not get CFTC approval then the loans in this pool that refinance through ERR will be treated as a prepayment.

Replacement loans refinanced through ERR will not constitute a Modification Event.

Eligibility limited to:
- Loans owned or securitized by Freddie Mac that were funded on or after October 1, 2017
- Have been originated at least 15 months prior to refinance date
- No 30-day delinquency in the past 6 months and no more than one 30-day delinquency in the preceding 12 months
## FHFA Proposed Capital Rule

**FACT SHEET: RE-PROPOSED RULE ON ENTERPRISE CAPITAL**

**Preamble Table 26: Comparison of Single-family Risk-based Capital Requirements under the 2018 Proposal and the Proposed Rule, as of September 30, 2019**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Proposal</td>
<td>Rule</td>
<td>Proposal</td>
<td>Rule</td>
<td>Risk</td>
<td>Risk</td>
</tr>
<tr>
<td>Gross Credit Risk</td>
<td>$61.8</td>
<td>$75.1</td>
<td>$38.0</td>
<td>$47.4</td>
<td>$99.9</td>
<td>$122.4</td>
</tr>
<tr>
<td>Loan level Enhancement</td>
<td>(11.0)</td>
<td>(10.4)</td>
<td>(6.9)</td>
<td>(6.6)</td>
<td>(17.9)</td>
<td>(17.0)</td>
</tr>
<tr>
<td>Net Credit Risk</td>
<td>50.8</td>
<td>64.6</td>
<td>31.2</td>
<td>40.8</td>
<td>82.0</td>
<td>105.4</td>
</tr>
<tr>
<td>CRT Impact, net</td>
<td>(15.2)</td>
<td>(16.2)</td>
<td>(12.0)</td>
<td>(14.7)</td>
<td>(27.2)</td>
<td>(20.9)</td>
</tr>
<tr>
<td>Post-CRT Net Credit Risk</td>
<td>35.6</td>
<td>38.4</td>
<td>19.1</td>
<td>36.1</td>
<td>54.7</td>
<td>94.5</td>
</tr>
<tr>
<td>Market Risk</td>
<td>3.6</td>
<td>3.6</td>
<td>5.5</td>
<td>5.5</td>
<td>9.1</td>
<td>9.1</td>
</tr>
<tr>
<td>Operational Risk</td>
<td>2.4</td>
<td>4.5</td>
<td>1.5</td>
<td>2.9</td>
<td>3.9</td>
<td>7.4</td>
</tr>
<tr>
<td>Subtotal</td>
<td>41.6</td>
<td>66.5</td>
<td>26.2</td>
<td>44.5</td>
<td>67.8</td>
<td>111.0</td>
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<tr>
<td>Going-concern Buffer</td>
<td>72.4</td>
<td>0.0</td>
<td>14.5</td>
<td>0.0</td>
<td>36.9</td>
<td>0.0</td>
</tr>
<tr>
<td>Total Capital Requirement</td>
<td>$56.0</td>
<td>$56.5</td>
<td>$40.7</td>
<td>$44.5</td>
<td>$104.7</td>
<td>$111.0</td>
</tr>
</tbody>
</table>

**Total UPB**

- Freddie Mac: $2,944.9
- Fannie Mae: $2,058.8

Includes single-family whole loans, Fannie Mae and Freddie Mac guarantees of single-family securities held by third parties, and investments in single-family securities guaranteed by Fannie Mae, Freddie Mac or Ginnie Mae.
SF CRT LIBOR Transition
freddiemac.com/about/libor-transition

Freddie Mac supports the Alternative Reference Rates Committee (ARRC) endorsement of SOFR as its recommended alternative rate to LIBOR.

▪ Freddie Mac adopted new fallback language starting with STACR 2020-HQA2 transaction providing greater clarity and certainty to the market, consistent with industry best practice.
▪ On May 28 Freddie Mac published CRT LIBOR transition Playbook and FAQs, laying out the roadmap and key milestones for CRT LIBOR/SOFR transition.
▪ Freddie Mac announced its intention to begin issuing SOFR-indexed CRT deals in Q4 2020 (subject to market conditions and readiness) and discontinue issuance of LIBOR-indexed CRT deals by Q4 2020.
▪ In June 2020, Freddie Mac and Fannie Mae jointly conducted a survey seeking feedback on SOFR index methodology and conventions for SOFR CRT issuance, as well as market readiness. Based on survey results:
  ▪ Playbook and FAQs now specify that SOFR-indexed Single-Family CRT issuances will initially use a 30-day Average SOFR (published by the NY Fed) as the reference rate with a Determination Date of 2 Business Days (2BD) prior to the beginning of the accrual period for CRT securities.
  ▪ GSEs expect that most market participants will be ready for SOFR-indexed CRT transactions by the end of Q3 2020.
▪ Target is to publish final SOFR methodology and convention this summer(in alignment with Fannie Mae) for SOFR-indexed CRT issuance, providing advance notice to the market.
▪ Continuing to work with Fannie Mae, FHFA and ARRC for legacy CRT LIBOR transition. Further announcement expected later in 2020.

Freddie Mac supports the Alternative Reference Rates Committee (ARRC) endorsement of SOFR as its recommended alternative rate to LIBOR.
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