Multifamily Securitization Overview

As of December 31, 2019
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Executive Summary

Freddie Mac’s core mission is to provide liquidity, stability and affordability to the U.S. housing market.

- The multifamily market has experienced very strong rent and occupancy trends over the last few years, and the demand for rental housing remains robust.

- The multifamily sector continues to experience strong investor interest and outperforms other commercial real estate sectors.

- Our business model underwent a significant shift – from an investments business to a securitization business – beginning in 2008.

- This shift has been successful: Securitization enables us to transfer virtually all risk to third parties, thereby reducing our reliance on the retained portfolio and government backstop guarantee; our guarantee comes before draw.

- As part of our business strategy to be innovative and provide thought leadership, we continue to expand our support of affordable housing through new offerings such as small balance, Manufactured Housing Community, Tax-exempt Loans and, most recently, green workforce loans.
Multifamily Business Overview
Freddie Mac’s core mission is to provide liquidity, stability and affordability to the U.S. housing market

The Freddie Mac Multifamily line of business helps to ensure an ample supply of affordable rental housing by purchasing mortgages secured by apartment buildings with five or more units.

Freddie Mac buys loans from our network of Optigo® lenders — with over 150 branches nationwide, substantial lending experience and established performance records.

Multifamily employs approximately 1,000 experienced professionals at its headquarters, four regional offices and nine field offices.

Freddie Mac has provided $681 billion in financing for approximately 91,000 multifamily properties since 1993, representing nearly 10.6 million apartment units.

Freddie Mac follows a prior-approval underwriting approach and completes the underwriting and credit reviews of all multifamily mortgages in house.

Freddie Mac’s Multifamily total book of business of $344 billion comprises $271 billion of multifamily guarantees, $30 billion of unsecuritized loans, more than $5 billion of multifamily mortgage-related securities, and nearly $3 billion of other investments, plus $35 billion of additional market support (primarily unguaranteed securities).
Freddie Mac Multifamily Business 2019 Review

2019 New Business Activity*  
(based on UPB)

- 85% CE Bonds
- 1% HFI Loans
- 1% HFS Loans
- 1% Swaps
- 2% TEBS

2019 New Business Activity*  
(based on # of loans)

- 62% Refinances
- 37% Acquisitions
- 1% Other

Freddie Mac Multifamily new business activity was $78.4 billion for 2019. Provided financing for over 5,600 multifamily properties, representing more than 809,000 rental units.

- $68 billion of multifamily loans were securitized into K-Deals® and SB-Deals
- Freddie Mac’s total mortgage portfolio delinquency rate was 8 basis points as of December 31, 2019
  - Freddie Mac’s securitization delinquency rate was 9 basis points

* Does not include LIHTC equity commitments
Freddie Mac Multifamily Business Results

We maintain strong credit and capital management discipline and generate solid returns

<table>
<thead>
<tr>
<th>Key Metrics</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Business Activity</td>
<td>$78.0 billion</td>
<td>$78.4 billion</td>
</tr>
<tr>
<td>Units Financed</td>
<td>~866,000 units</td>
<td>~809,000 units</td>
</tr>
<tr>
<td>Securitization Volume</td>
<td>$72.8 billion</td>
<td>$75.5 billion</td>
</tr>
<tr>
<td>Comprehensive Income, Net of Taxes</td>
<td>$1.2 billion</td>
<td>$1.9 billion</td>
</tr>
<tr>
<td>Total Book of Business</td>
<td>$309 billion</td>
<td>$344 billion</td>
</tr>
<tr>
<td>Credit Losses</td>
<td>$4 million</td>
<td>$0 million</td>
</tr>
<tr>
<td>60+ Day Delinquency Rate</td>
<td>1 bp</td>
<td>8 bps</td>
</tr>
<tr>
<td>REO Inventory</td>
<td>none</td>
<td>none</td>
</tr>
</tbody>
</table>
Freddie Mac Multifamily New Business Activity

We provide financing in all multifamily markets. Our volumes have grown proportionate to the overall market growth.

Multifamily New Business Activity ($ Billions)
New Business Activity

We continue to support the needs of the rental housing market across communities nationwide and have increased our presence in underserved markets.

<table>
<thead>
<tr>
<th>($ Billions)</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New Business Activity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total New Business Activity</td>
<td>$78.0</td>
<td>$78.4</td>
</tr>
<tr>
<td><strong>Key Products</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Targeted Affordable Housing (TAH)</td>
<td>$8.1</td>
<td>$10.1</td>
</tr>
<tr>
<td>Small Balance Loans (SBL)</td>
<td>$8.3</td>
<td>$6.7</td>
</tr>
<tr>
<td>Manufactured Housing Communities (MHC)</td>
<td>$1.8</td>
<td>$1.4</td>
</tr>
<tr>
<td>Green Advantage®</td>
<td>$23.1</td>
<td>$15.0</td>
</tr>
<tr>
<td>Seniors Housing</td>
<td>$4.1</td>
<td>$5.4</td>
</tr>
<tr>
<td>Student Housing</td>
<td>$2.5</td>
<td>$1.6</td>
</tr>
<tr>
<td>LIHTC Investments</td>
<td>$0.5</td>
<td>$0.5</td>
</tr>
</tbody>
</table>
Our disciplined credit practices are one of the main drivers of the continued strong performance of our offerings.

Notes: Freddie Mac does not report modified or forbearance loans in delinquency rates if the borrower is less than two monthly payments past due. Fannie Mae reports forbearance loans in their delinquency rates. Sources: Freddie Mac, Fannie Mae, American Council of Life Insurers (ACLI) Quarterly Investment Bulletin, FDIC Quarterly Banking Profile, TREPP (CMBS multifamily 60+ delinquency rate, excluding REOs) for periods prior to 3Q17, Wells Fargo CMBS research for 4Q17-3Q19 CMBS delinquency rates.
Multifamily Market Overview
Rental Demand Remains Strong

A preference for rental housing has remained solid, despite a recent uptick in the homeownership rate.

Owner and Renter Households and Homeownership Rate (1990 – 2019)

Sources: U.S. Census Bureau, Current Population Survey/Housing Vacancy Survey, Freddie Mac
Multifamily Fundamentals Are Healthy

Multifamily market is moderating but remains healthy – vacancy rates are below long-term historical averages and effective rent growth remains positive

Vacancy Rate and Change in Effective Rent

Source: Reis
Multifamily Fundamentals Are Healthy

Multifamily construction activity remains high with the number of permits in 2019 marginally surpassing the previous cyclical peak in 2015. Despite completions slightly receding in the past two years, new supply is expected to remain elevated going forward.

Sources: Moody’s Analytics DataBuffet.com and U.S. Census Bureau
Notes: Starts and completions based on all areas of the U.S., while permits are only for areas that require a building or zoning permit. Moody’s Analytics estimated that in 2000, 95% of the population was living in a permit issuing area.
Housing Shortage

Housing completions are well below the long-run average; the multifamily market is helping to fill the void

Source: Moody’s
2019 Renter Survey: Renting Still Most Affordable Option

A growing number of people are finding renting more affordable than owning. Read the full report.

Q: Overall, which do you think is more affordable for you today?

<table>
<thead>
<tr>
<th>Renting</th>
<th>Owning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 2016 (Base = 1,527)</td>
<td>69%</td>
</tr>
<tr>
<td>Sept. 2016 (Base = 1,362)</td>
<td>65%</td>
</tr>
<tr>
<td>Mar. 2017 (Base = 1,282)</td>
<td>68%</td>
</tr>
<tr>
<td>Aug. 2017 (Base = 1,342)</td>
<td>76%</td>
</tr>
<tr>
<td>Feb. 2018 (Base = 1,209)</td>
<td>67%</td>
</tr>
<tr>
<td>Aug. 2018 (Base = 1,059)</td>
<td>78%</td>
</tr>
<tr>
<td>Apr. 2019 (Base = 1,119)</td>
<td>82%</td>
</tr>
<tr>
<td>Aug. 2019 (Base = 1,233)</td>
<td>84%</td>
</tr>
</tbody>
</table>

87% of boomer renters report that renting is more affordable, a 6% increase from a year ago.

By Renter Demographics

<table>
<thead>
<tr>
<th>Male</th>
<th>Female</th>
<th>Urban</th>
<th>Sub-urban</th>
<th>Rural</th>
<th>Northeast</th>
<th>South</th>
<th>Midwest</th>
<th>West</th>
<th>Young Millennial</th>
<th>Old Millennial</th>
<th>Gen X</th>
<th>Boomer</th>
<th>Multi-family</th>
<th>Single-Family</th>
<th>Very Low Income</th>
<th>Low Income</th>
<th>Middle Income</th>
<th>First-time Buyer</th>
</tr>
</thead>
<tbody>
<tr>
<td>85</td>
<td>82</td>
<td>84</td>
<td>84</td>
<td>82</td>
<td>87</td>
<td>82</td>
<td>83</td>
<td>83</td>
<td>85</td>
<td>80</td>
<td>82</td>
<td>87</td>
<td>85</td>
<td>82</td>
<td>90</td>
<td>85</td>
<td>79</td>
<td>62</td>
</tr>
</tbody>
</table>

Base = Total Renters, demographic breakdown is detailed on page 2 of the full report.
Source: 2019 August The Harris Poll Consumer Omnibus Results
Multifamily Cap Rates and U.S. Treasuries

Cap rate spreads, the risk premium demanded to hold real estate, has aligned with historical averages in the past few years. However, falling Treasury rates have caused the cap rate spread to widen in the third and fourth quarter.

Sources: Moody’s REAL Commercial Property Price Index (CPPI) and Real Capital Analytics (RCA)
Originations have risen over the last several years, reflecting solid market fundamentals.
Production, Sales and Underwriting
Our Optigo® Lender Network

Freddie Mac buys loans from a network of approved Multifamily lenders who have over 150 branches nationwide, substantial experience and established performance records.

The small size of the network promotes quality originations and a high level of service to borrowers.

Our lenders must comply with our standards for both origination and servicing of multifamily loans, which includes meeting minimum financial requirements and undergoing satisfactory annual audits.

Optigo Lenders

- Arbor Agency Lending LLC
- Barings Multifamily Capital LLC
- Bellwether Enterprise Real Estate Capital LLC
- Berkadia Commercial Mortgage LLC
- Berkeley Point Capital LLC d/b/a Newmark Knight Frank
- Capital One N.A.
- CBRE Capital Markets
- Citibank NA
- CPC Mortgage Company LLC
- Grandbridge Real Estate Capital LLC
- Greystone Servicing Company
- HFF
- Hunt Real Estate
- Jones Lang LaSalle LLC
- KeyBank NA
- M&T Realty Capital Corporation
- NorthMarq Capital
- PGIM Real Estate Finance
- PNC Real Estate - Multifamily
- SunTrust Bank
- Walker & Dunlop LLC
- Wells Fargo Multifamily Capital
Regional focus means we have presence, experience and knowledge of local markets

The Multifamily Production and Underwriting teams are situated throughout the country to promote market expertise and provide better customer service.

▲ Western Region
444 S Flower St
44th Floor
Los Angeles, CA 90071
213-337-4284

▲ Central Region
71 S Wacker Dr
10th Floor
Chicago, IL 60606
312-407-7411

▲ Southeast Region
4501 N Fairfax Dr
Suite 400
Arlington, VA 22203
703-719-2278

▲ Northeast Region
200 Park Ave
16th Floor
New York, NY 10166
212-418-8912

● FIELD OFFICE LOCATIONS
Atlanta, GA | Austin, TX | Dallas, TX | Denver, CO | Fort Lauderdale, FL | Houston, TX | Irvine, CA | Seattle, WA | Tampa, FL
Financing Affordable Units

94% of the eligible units we financed in 2019 were affordable to households earning at or below 120% of the area median income.

The numbers above represent the percentage of affordable units at each AMI threshold. Totals may not add to 100% due to rounding. Additionally, FHFA mandated exclusions (MHC, Supplementals, etc.) are removed.
Our Credit Philosophy

Our credit policy and consistent underwriting practices are one of the main drivers of the strong performance of Freddie Mac Multifamily offerings performance.

Freddie Mac makes all credit, structuring and pricing decisions working with our lenders during all aspects of the mortgage production process.

We are focused on:

- Sustainable cash flow
- Market knowledge & fundamentals
- Equity
- Definable exit strategy
- Sponsorship
- Quality real estate collateral

Underwriting teams are situated throughout the country to provide market expertise.

Our Credit Approval Process

START
Lender submits loan request to Production

Production sizes, structures and submits loan for pricing

Production presents deal to Underwriting for approval to quote

Borrower completes loan application and lender submits underwriting package

Underwriter completes due diligence process, reports findings in investment brief

Underwriter recommends loan for approval

Loan is APPROVED
Rate-locked and funded
# K-Deal® Mortgage Guidelines

The following are the general guidelines for Freddie Mac's Multifamily mortgage purchases that are intended for K-Deal securitization (subject to certain exceptions):

## Property Type
- Origination requirements are focused on loans secured by occupied, stabilized and completed multifamily properties
- Limited amount of seniors housing, student housing, cooperative housing, manufactured housing and Section 8 HAP contracts

## Loan Terms
- Mortgages are fixed rate or floating rate
- 5-, 7-, 10- and 12-15-year loan terms with a maximum amortization of 30 years
- May contain initial interest-only periods
- Moderate exposure to full term interest-only loans
- Full term interest-only loans require higher initial amortizing debt service coverage ratio (DSCR) and lower loan to value (LTV)
- Floating-rate mortgages are based on one-month LIBOR, generally require a third-party LIBOR cap and are sized using an equivalent fixed rate

## Borrowers
- Single purpose entity (SPE) is required for all loans greater than or equal to $5 million
- A carve-out guarantor is generally required
- Entity guarantors are acceptable but may require financial covenants or a material adverse change clause
- Established large institutional borrowers with substantial prior experience with Freddie Mac mortgage programs may have more customized documents
K-Deal Mortgage Guidelines (continued)

**Underwriting**
- Effective gross income is calculated based on trailing three-months actual rent collections or the annualized current rent roll minus a minimum 5% vacancy rate subject to submarket data and actual rent collections.
- Operating expenses are generally calculated based on trailing 12 months.
- Real estate taxes and insurance are based on actual annual expenses.
- Property values are based on third-party appraisals and internal value confirmation.
- Replacement reserves are typically required and are generally equal to the greater of an engineer’s recommendation or $250/unit or $50/pad for Manufactured Housing Communities.
- Tax and insurance escrows are generally required.
- Third-party LIBOR caps that expire prior to related mortgage maturity date are required to be replaced. Replacement cap funds are escrowed at 125% of replacement cost and are recalculated on either a semi-annual or annual basis.
- Other third-party reports are required (e.g., Phase I ESA, property condition, zoning, etc.).
- Property condition, Phase I, and Zoning reports are required for all loans over $20 million. A combined property condition and environmental analysis report is required for all loans below $15 million.

**LTV and DSCR**
- Target maximum LTV of 80%, minimum DSCR of 1.25x (fixed rate) and 1.00x on the max capped interest rate for floating-rate loans.
- Shorter loan terms or underperforming markets, and specialty product types typically require adjustments.
- All loans require a maturity risk analysis.

**Supplemental Financing**
- Eligible one year after origination of the first mortgage.
- Purchased by Freddie Mac from original lender under Freddie Mac's supplemental mortgage product.
- Lower of 80% LTV or maximum LTV per loan agreement and minimum amortizing DSCR of 1.25x (fixed) or 1.10x (floating, at cap).
- Re-underwriting required based on current property performance, an updated appraisal, financials and Freddie Mac’s credit policy.
- Monthly escrows for taxes, insurance and replacement reserves required. If the first mortgage allowed for deferral of escrows, the supplemental will trigger collection.
Securitization Program
Multifamily Securitization Program

- Securitization is accomplished through offerings of K-Series Multifamily Mortgage Pass-Through Certificates “K-Deals”, SB-Series Multifamily Mortgage Pass-Through Certificates “SB-Deals” and other securitization transactions.

- In general, K-Deals are backed by newly acquired mortgages underwritten to Freddie Mac's industry-leading underwriting standards. Underwriting and credit reviews are completed by Freddie Mac, and securitized loans are underwritten to the same standards as loans held in our investment portfolio.

- Freddie Mac Multifamily announced the addition of the Small Balance Loans (SBL) line of business to its lending platform in October 2014. SBL generally refers to loans between $1 million – $7.5 million and properties with 5-50 units. Deals greater than $6 million and up to $7.5 million in small and very small markets may be permitted subject to Freddie’s approval of an exception request. Unit limit exceptions are also permitted.

- In June 2017, Freddie Mac introduced a new series of credit risk transfer securities backed by Tax-Exempt Loans (TELs) made by Freddie Mac Optigo lenders for Targeted Affordable Housing to state or local housing agencies and secured by affordable rental housing. The TEL program finances stabilized affordable multifamily properties with 4% Low-Income Housing Tax Credits (LIHTC) and at least seven years remaining in the LIHTC compliance period.

- As of December 31, 2019, there has been approximately:
  - $353.4 billion of K-Deal issuance since the start of the program in 2009
  - $25.0 billion of SB-Deal issuance since the start of the program in 2015
  - $1.5 billion of ML-Deal issuance since the start of the program in 2017
Multifamily Securitization Program – Strengths

**Freddie Mac Multifamily** is an active and consistent issuer of high-grade multifamily securities, featuring transparency and consistency on collateral and deal information.

**STRONG PERFORMANCE**
K-Deals are secured by assets with some of the industry’s lowest delinquency and vacancy rates, along with other strong property fundamentals.

**TRANSPARENCY & CONSISTENCY**
on collateral and deal information via Multifamily Securities Investor Access tool

**STRONG CREDIT**
provided by Freddie Mac’s guarantee plus credit support of underlying mortgages underwritten to Freddie Mac’s portfolio standards

**SERVICING STANDARD**
Improves the borrower experience post-securitization

**LIQUIDITY**
supported by expectations for repeatable and reliable issuance subject to market conditions

**CALL PROTECTION**
associated with defeasance or yield maintenance

**DIVERSIFICATION**
through pooled risk of many assets versus single-asset risk in a typical deal
Servicing Standard – Best-in-Class Service

The Freddie Mac Multifamily Servicing Standard ensures best-in-class service throughout the life of the loan

Freddie Mac has used its Multifamily Seller/Servicer Guide to outline its Servicing Standard and directly refers to it as the “Servicing Standard” in each Pooling and Servicing Agreement (PSA)

- This standard ensures transparency and ongoing communication between all post-securitization transaction parties

We partner with all of the parties involved with each loan post-securitization to ensure that they protect the Freddie Mac brand

- Freddie Mac monitors the process and is not a credit decision maker
- Freddie Mac acts as the servicing consultant to help create a shared credit philosophy and consistent processes
  
  » Provides analysis of “what Freddie Mac would do” under our credit guidelines when asked by the Master Servicer

Special Servicers

- CWCapital Asset Management LLC
- KeyBank National Association
- PNC Bank, National Association
- Situs Holdings, LLC
- Wells Fargo Bank, National Association
Unprecedented growth as we continue to diversify our product execution options

Multifamily Securitization Volume (2009-2019)

1. The vast majority of our securitization volume is workforce housing loans. The K-W workforce housing deal type is a securitization type we issue on a limited basis for certain types of workforce housing and represents only a small subset of our overall workforce housing volume.

2. Excludes the total UPB of Value-Add (K-100), Single Family Rental (SR-00) and Third Party (Q-000) Deal Types in which Freddie Mac is not the mortgage loan seller. Totals may not foot exactly due to rounding.

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2. Excludes the total UPB of Value-Add (K-100), Single Family Rental (SR-00) and Third Party (Q-000) Deal Types in which Freddie Mac is not the mortgage loan seller. Totals may not foot exactly due to rounding.
Multifamily Securitization Volume

Execution by Deal Type (2009-2019)

Includes Value-Add (K-100) and Third Party (Q-000) Deal Types in which Freddie Mac is not the mortgage loan seller.
Multifamily Securitization Volume

### Execution by Deal Type (2009-2019)

<table>
<thead>
<tr>
<th>Deal Type</th>
<th>Descriptor</th>
<th>Description</th>
<th># of Deals</th>
<th>Total UPB ($ billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total UPB</strong></td>
<td></td>
<td></td>
<td>419</td>
<td>386.01</td>
</tr>
<tr>
<td>10 Year</td>
<td>K-000</td>
<td>Series for fixed loans with various terms, mostly 10 year terms</td>
<td>101</td>
<td>138.2</td>
</tr>
<tr>
<td>Floating Rate</td>
<td>K-F00</td>
<td>Series for loans with floating rates of various terms</td>
<td>73</td>
<td>85.2</td>
</tr>
<tr>
<td>7 Year</td>
<td>K-700</td>
<td>Series for fixed loans with 7 year terms</td>
<td>36</td>
<td>46.4</td>
</tr>
<tr>
<td>Single Sponsor</td>
<td>K-ABC</td>
<td>Series for Single-Sponsor loans, sometimes single asset</td>
<td>27</td>
<td>26.4</td>
</tr>
<tr>
<td>Small Balance</td>
<td>SB-00</td>
<td>Series for small balance loans, also known as the FRESB series</td>
<td>69</td>
<td>25.0</td>
</tr>
<tr>
<td>Seniors Housing</td>
<td>K-S00</td>
<td>Series for loans backed by multifamily mortgages on senior properties</td>
<td>13</td>
<td>9.9</td>
</tr>
<tr>
<td>+10 Year</td>
<td>K-1500</td>
<td>Series for fixed loans with greater than 10 years</td>
<td>14</td>
<td>10.7</td>
</tr>
<tr>
<td>Suplemental</td>
<td>K-J00</td>
<td>Series for suplemental loans</td>
<td>27</td>
<td>7.6</td>
</tr>
<tr>
<td>Workforce</td>
<td>K-W00</td>
<td>Series for workforce housing loans</td>
<td>10</td>
<td>6.1</td>
</tr>
<tr>
<td>No-Subordination</td>
<td>K-P00</td>
<td>Series for portfolio loans, with no subordinate piece</td>
<td>5</td>
<td>4.3</td>
</tr>
<tr>
<td>Third Party</td>
<td>Q-000</td>
<td>Series for third party collateral</td>
<td>11</td>
<td>4.4</td>
</tr>
<tr>
<td>Large Loan</td>
<td>K-L00</td>
<td>Series for large loans</td>
<td>5</td>
<td>4.3</td>
</tr>
<tr>
<td>5 Year</td>
<td>K-500</td>
<td>Series for fixed loans with 5 year terms</td>
<td>4</td>
<td>4.1</td>
</tr>
<tr>
<td>Callable</td>
<td>K-C00</td>
<td>Series for loans with non-standard prepay terms</td>
<td>7</td>
<td>5.1</td>
</tr>
<tr>
<td>Value-Add</td>
<td>K-I00</td>
<td>Series for value-add loans</td>
<td>4</td>
<td>2.2</td>
</tr>
<tr>
<td>Seasoned</td>
<td>K-X00</td>
<td>Series for seasoned loans</td>
<td>3</td>
<td>2.0</td>
</tr>
<tr>
<td>Tax Exempt</td>
<td>ML-00</td>
<td>Series for tax exempt loans</td>
<td>6</td>
<td>1.5</td>
</tr>
<tr>
<td>Lease Up</td>
<td>K-LU0</td>
<td>Series for lease up loans</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>Green</td>
<td>K-G00</td>
<td>Series for Green Advantage® loans</td>
<td>2</td>
<td>1.0</td>
</tr>
</tbody>
</table>

¹ Includes Value-Add (K-I00) and Third Party (Q-000) deal types in which Freddie Mac is not the mortgage loan seller
### Typical K-Deal Issuance Timeline

<table>
<thead>
<tr>
<th>Internal Pool Preparation (4 weeks)</th>
<th>Preliminary Due Diligence (2 weeks)</th>
<th>Full Due Diligence (5 - 6 weeks)</th>
<th>Marketing &amp; Placement (1 - 2 weeks)</th>
<th>Closing &amp; Settlement (1 - 2 weeks)</th>
<th>Surveillance (Ongoing)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Identify pool collateral</td>
<td>- Prospective Subordinate bond investors perform preliminary due diligence</td>
<td>- Perform accounting and legal due diligence</td>
<td>- Placement agent announces transaction</td>
<td>- Finalize offering documents (OCS, IC, OM, PSA, MLPA)</td>
<td>- Guarantor</td>
</tr>
<tr>
<td>- Pool preparation including data tapes, asset summary reports and mortgage files</td>
<td>- Subordinate bond investor selected</td>
<td>- Trustee and Master Servicer selected</td>
<td>- Respond to investor inquiries</td>
<td>- Prepare for closing</td>
<td>- Surveillance team monitoring</td>
</tr>
<tr>
<td>- Engage rating agencies for preliminary analysis, if applicable</td>
<td>- Rating agency performs preliminary analysis completed</td>
<td>- Finalize exceptions to representations and warranties</td>
<td>- Launch and price senior, mezzanine and interest-only classes</td>
<td>- Settlement</td>
<td>- Review and clear Trustee exception reports</td>
</tr>
<tr>
<td>- Select rating agencies, if applicable</td>
<td>- Subordinate bond investor confirms due diligence completed and pool finalized</td>
<td>- Subordinate bond investor confirms due diligence completed and pool finalized</td>
<td>- Mortgage files transferred to Trustee and Master Servicer</td>
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<td></td>
<td>- Finalize rating agency levels</td>
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<tr>
<td></td>
<td>- Finalize preliminary offering documents (OCS, IC, OM, PSA, Term Sheet)</td>
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</table>
## Freddie Mac 2019 K-Deal Snapshot

<table>
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<tr>
<th># of Deals</th>
<th>Deal Name</th>
<th>Closing Date</th>
<th># of Deals</th>
<th>Closing Balance ($ Millions)</th>
<th>Guaranteed Balance ($ Millions)</th>
<th>Average Loan Cutoff Principal Balance ($ Millions)</th>
<th>Coupon</th>
<th>Remaining Loan Term (Months)</th>
<th>Seasoning (Months)</th>
<th>Loan to Value %</th>
<th>Debt Service Coverage Ratio</th>
<th>Loan Balance % Top 10</th>
<th>Acquisition Loans %</th>
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### Most Recent 10 Deals

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<tr>
<th># of Deals</th>
<th>Deal Name</th>
<th>Closing Date</th>
<th># of Deals</th>
<th>Closing Balance ($ Millions)</th>
<th>Guaranteed Balance ($ Millions)</th>
<th>Average Loan Cutoff Principal Balance ($ Millions)</th>
<th>Coupon</th>
<th>Remaining Loan Term (Months)</th>
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<th>Debt Service Coverage Ratio</th>
<th>Loan Balance % Top 10</th>
<th>Acquisition Loans %</th>
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<tbody>
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<td>65</td>
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<td>12/31/2019</td>
<td>2,559</td>
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<td>3.499</td>
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<td>67.8</td>
<td>1.43</td>
<td>55.3</td>
<td>47.1</td>
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<tr>
<td>12</td>
<td>2019 Q1</td>
<td>3/31/2019</td>
<td>499</td>
<td>12,071.63</td>
<td>10,695.21</td>
<td>24.9</td>
<td>3.248</td>
<td>107</td>
<td>2</td>
<td>66.8</td>
<td>1.43</td>
<td>52.2</td>
<td>49.3</td>
</tr>
<tr>
<td>13</td>
<td>2019 Q2</td>
<td>6/30/2019</td>
<td>580</td>
<td>12,961.10</td>
<td>11,343.73</td>
<td>25.5</td>
<td>3.867</td>
<td>109</td>
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<td>66.0</td>
<td>1.45</td>
<td>51.9</td>
<td>43.4</td>
</tr>
<tr>
<td>17</td>
<td>2019 Q3</td>
<td>9/30/2019</td>
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<tr>
<td>23</td>
<td>2019 Q4</td>
<td>12/31/2019</td>
<td>860</td>
<td>19,740.27</td>
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<td>4</td>
<td>68.7</td>
<td>1.42</td>
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<td>42.7</td>
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<tr>
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<tbody>
<tr>
<td>65</td>
<td>2019 Q1</td>
<td>3/31/2019</td>
<td>499</td>
<td>12,071.63</td>
<td>10,695.21</td>
<td>24.9</td>
<td>3.248</td>
<td>107</td>
<td>2</td>
<td>66.8</td>
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<td>52.2</td>
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<td>2019 Q2</td>
<td>6/30/2019</td>
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<td>12,961.10</td>
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<td>25.5</td>
<td>3.867</td>
<td>109</td>
<td>5</td>
<td>66.0</td>
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<tr>
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<td>2019 Q4</td>
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<td>860</td>
<td>19,740.27</td>
<td>17,373.96</td>
<td>30.9</td>
<td>3.449</td>
<td>113</td>
<td>4</td>
<td>68.7</td>
<td>1.42</td>
<td>54.2</td>
<td>42.7</td>
</tr>
</tbody>
</table>
Credit Metrics – K-Deals

Our K-Deal program demonstrates consistent credit metrics since the beginning of the program
K-Deal Performance

As of December 2019:

- 99.95% of the K-Deal loans are current (by outstanding principal balance)
- Seven loans are in special servicing (representing <6 bps of outstanding principal)
- Freddie Mac has not realized any credit losses on our K-Deal guarantees
- 5.14% of the outstanding loan population (by outstanding principal) is on the servicers' watchlist

Floating Rate Prepayment Information

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<tr>
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<tbody>
<tr>
<td>Original Balance (Mil)</td>
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<td>$1,540.31</td>
<td>$5,677.39</td>
<td>$8,770.94</td>
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<td>Original WAC</td>
<td>3.37%</td>
<td>2.96%</td>
<td>2.49%</td>
<td>2.30%</td>
<td>2.94%</td>
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<tr>
<td>Current WAC</td>
<td>0.00%</td>
<td>4.98%</td>
<td>3.66%</td>
<td>3.35%</td>
<td>3.37%</td>
<td>3.42%</td>
<td>3.21%</td>
<td>3.35%</td>
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K-Deal Vintage Percent Prepaid

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<td>&lt;1</td>
<td>4.30%</td>
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<td>0.89%</td>
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<td>34.66%</td>
<td>15.39%</td>
<td>20.10%</td>
<td>23.63%</td>
<td>22.09%</td>
<td>22.00%</td>
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<tr>
<td>3</td>
<td>30.78%</td>
<td>37.73%</td>
<td>37.00%</td>
<td>23.79%</td>
<td>31.83%</td>
<td>27.92%</td>
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<tr>
<td>4</td>
<td>15.93%</td>
<td>14.10%</td>
<td>18.80%</td>
<td>29.35%</td>
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<tr>
<td>5</td>
<td>12.40%</td>
<td>7.20%</td>
<td>14.28%</td>
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<tr>
<td>6</td>
<td>3.80%</td>
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<td>0.00%</td>
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1 There has been $18.84 million in total losses realized by B-piece investors (representing < 1 bp of total issuance)
2 The respective Master Servicers maintain a watchlist for each securitization. Loans are added to and removed from the watchlist in accordance with criteria established by CREFC
3 Information presented in the table is as of December 2019
Basic K-Deal Transaction Structure

**Freddie Mac securitizes loans via the K-Deal program through the following steps:**

- The loans are sold to a third-party depositor who places the loans into a third-party trust
- Private label securities backed by the loans are issued by the third-party trust
- Freddie Mac purchases and guarantees certain bonds (Guaranteed Bonds) issued by the third-party trust and securitizes these bonds via a Freddie Mac trust.
- The resulting Freddie Mac guaranteed structured pass-through certificates (K Certificates) are publicly offered via placement agents
- The unguaranteed mezzanine and subordinate bonds are issued by the third-party trust and are privately offered to investors via placement agents

---

**RELEVANT PARTIES/ENTITIES**

**Underlying Mortgage Loan Seller**
Freddie Mac

**Underlying Originators**
Freddie Mac Conventional and TAH lenders

**Underlying Master Servicer**
Selected by Freddie Mac through bidding process

**Underlying Special Servicer**
Selected by subordinate bond investor in consultation with Freddie Mac

**Underlying Trustee/Certificate Administrator**
Selected by Freddie Mac through bidding process

---

1 Guaranteed Bonds include senior amortizing bonds as well as interest-only bonds derived from senior and subordinate P&I bonds
Sample K-Deal Fixed-Rate Coupon and Subordination

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<tr>
<th>Guaranteed Classes</th>
<th>Non-Guaranteed Classes</th>
<th>IO Classes</th>
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<td>X2-B</td>
<td>X3</td>
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<tr>
<td>X1</td>
<td>XAM</td>
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<tr>
<td>A-1</td>
<td>A-2</td>
<td>A-M</td>
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<td>$102</td>
<td>$103</td>
<td>$103</td>
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<tr>
<td>$98</td>
<td>$84</td>
<td>$30</td>
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1 Master Servicer Surveillance and Special Servicer Surveillance fees
2 Guarantee Fee of 20 bps is multiplied by the outstanding principal balance of the A-1, A-2 and A-M certificates
Sample K-Deal Subordination – Sequential Pay

$1.5 billion
Fixed-rate pool of mortgages

$1.225 billion
Guaranteed Certificates
Class A-1 & A-2

$75 million
Guaranteed Certificates
Class A-M

$90 million
Unguaranteed Certificates
Class B & C

$110 million
Unguaranteed Certificates
Class D

First Payment
Last Payment
Loss Position
Cash Flow

First Loss
Last Loss
Cash Flow
Loss Position
First Payment
Last Payment

Sample K-Deal Subordination – Pro Rata Pay

- Pro rata structure is commonly used for floating-rate K-Deals
- Principal collected is distributed pro rata, unless a Waterfall Trigger Event has occurred and is continuing

- A “Waterfall Trigger Event” occurs when (i) the number of non-specially serviced loans remaining in the pool falls below the designated threshold as defined in the securitization documents or (ii) the total outstanding principal balance of the non-specially serviced loans is less than 15% of the initial total pool balance

$1.5 billion
Floating-rate pool of mortgages

$1.352 billion
Guaranteed Certificate
Class A

$38 million
Unguaranteed Certificate
Class B

$110 million
Unguaranteed Certificate
Class C

First Payment

Last Payment

Cash Flow

Loss Position

Last Loss

First Loss

Pro rata structure is commonly used for floating-rate K-Deals
Principal collected is distributed pro rata, unless a Waterfall Trigger Event has occurred and is continuing

A “Waterfall Trigger Event” occurs when (i) the number of non-specially serviced loans remaining in the pool falls below the designated threshold as defined in the securitization documents or (ii) the total outstanding principal balance of the non-specially serviced loans is less than 15% of the initial total pool balance
Sample K-Deal Loss Scenarios

**SCENARIO 1**
Example of loan loss in Freddie Mac K-Deal structure

This loss example illustrates how the underlying certificates would be affected by loan defaults and the Freddie Mac guarantee assuming that the servicer is no longer making principal and interest advances with respect to the defaulted loans. This example is hypothetical and for illustrative purposes only. Class balances, loan balances and other mortgage pool characteristics described in this example do not reflect those of any actual underlying certificates or any actual underlying mortgage pools.

**Assumptions**
- Pool Size: $1.3 billion
- $23 million loan defaults in month 15 (prior to loan maturity)
- Loan sold for $15 million in month 25, $8 million loss in month 25

### Month 0
- A-1 + A-2 + AM $1.100B
- B $50M
- C $50M
- D $100M

### Months 1-14
Regular interest payments of $75M and amortization payments of $14M

### Month 15
- A-1 + A-2 + AM $1.086B
- B $50M
- C $50M
- D $100M

### Months 16-24
Regular interest payments of $46M which includes interest attributable to the defaulted $23M loan (paid via Freddie Mac Guarantee)
- Regular amortization of $12M which does not include principal attributable to the defaulted $23M loan

### Month 25
- A-1 + A-2 + AM $1.059B
- B $50M
- C $50M
- D $92M

$15M paydown to Class A-1 resulting from recovery on the $23M defaulted loan

$8M loss on Class D resulting from the loss on the $23M defaulted loan
Sample K-Deal Loss Scenarios (continued)

**SCENARIO 2**
Example of loan loss in Freddie Mac K-Deal structure

This loss example illustrates how the underlying certificates would be affected by loan defaults and the Freddie Mac guarantee assuming that the servicer is no longer making principal and interest advances with respect to the defaulted loans. This example is hypothetical and for illustrative purposes only. Class balances, loan balances and other mortgage pool characteristics described in this example do not reflect those of any actual underlying certificates or any actual underlying mortgage pools.

### Assumptions
- Pool Size: $1.3 billion
- Losses occur during the first 50 months resulting in Class D being written down to zero
- $23 million loan defaults in month 51 (prior to loan maturity)
- Loan sold for $15 million in month 53, $8 million loss in month 53
Sample K-Deal Loss Scenarios (continued)

SCENARIO 3
Example of loan loss in Freddie Mac K-Deal structure

This loss example illustrates how the underlying certificates would be affected by loan defaults and the Freddie Mac guarantee assuming that the servicer is no longer making principal and interest advances with respect to the defaulted loans. This example is hypothetical and for illustrative purposes only. Class balances, loan balances and other mortgage pool characteristics described in this example do not reflect those of any actual underlying certificates or any actual underlying mortgage pools.

### Assumptions
- Pool Size: $1.3 billion
- All loans (with the exception of two) pay off on time in month 120
- $115 million and $100 million IO loan maturity defaults in month 120
- Loans sold for $165 million in month 125, $50 million loss in month 125
# K-Deal Placement Agents

<table>
<thead>
<tr>
<th>Academy Securities, Inc.</th>
<th>KeyBanc Capital Markets Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amherst Pierpont Securities LLC</td>
<td>Loop Capital Markets LLC</td>
</tr>
<tr>
<td>Bancroft Capital, LLC</td>
<td>Mischler Financial Group, Inc.</td>
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<tr>
<td>Barclays Capital Inc.</td>
<td>Mizuho Securities Co., Ltd.</td>
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<tr>
<td>BMO Capital Markets Corp.</td>
<td>Morgan Stanley &amp; Co. LLC</td>
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<tr>
<td>BofA Securities, Inc.</td>
<td>Multi-Bank Securities, Inc.</td>
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<tr>
<td>Brean Capital, LLC</td>
<td>Nomura Securities International, Inc.</td>
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<tr>
<td>Cantor Fitzgerald &amp; Co.</td>
<td>Oppenheimer &amp; Co. Inc.</td>
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<tr>
<td>CastleOak Securities, L.P.</td>
<td>Performance Trust Capital Partners, LLC</td>
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<tr>
<td>Citigroup Global Markets Inc.</td>
<td>PNC Capital Markets LLC</td>
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<tr>
<td>Credit Suisse Securities (USA) LLC</td>
<td>Samuel A. Ramirez &amp; Company, Inc.</td>
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<tr>
<td>Drexel Hamilton, LLC</td>
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<tr>
<td>Deutsche Bank Securities Inc.</td>
<td>Stifel Financial Corp.</td>
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<tr>
<td>Goldman Sachs &amp; Co. LLC</td>
<td>The Williams Capital Group, L.P.</td>
</tr>
<tr>
<td>J.P. Morgan Securities LLC</td>
<td>Wells Fargo Securities, LLC</td>
</tr>
<tr>
<td>Jefferies LLC</td>
<td></td>
</tr>
</tbody>
</table>
We provide a calendar of upcoming offerings on mf.freddiemac.com

**JANUARY**

<table>
<thead>
<tr>
<th>Deal Name</th>
<th>Announcement Week Of</th>
<th>Freddie Mac Program</th>
<th>Collateral Rate Type</th>
<th>Collateral Loan Term</th>
<th>Projected Issuance Size ($ millions)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-I05</td>
<td>January 13, 2020</td>
<td>Value Add</td>
<td>Floating</td>
<td>3-Year</td>
<td>$500</td>
</tr>
<tr>
<td>K-737</td>
<td>January 21, 2020</td>
<td>Conventional</td>
<td>Fixed</td>
<td>7-Year</td>
<td>$1,550</td>
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<tr>
<td>K-F74</td>
<td>February 10, 2020</td>
<td>Conventional</td>
<td>Floating</td>
<td>7-Year</td>
<td>$850</td>
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<td>K-104</td>
<td>February 18, 2020</td>
<td>Conventional</td>
<td>Fixed</td>
<td>10-Year</td>
<td>$1,500</td>
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<tr>
<td>K-J28</td>
<td>February 18, 2020</td>
<td>Supplemental</td>
<td>Fixed</td>
<td>Various</td>
<td>$350</td>
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<tr>
<td>K-F75</td>
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<td>Floating</td>
<td>10-Year</td>
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<tr>
<td>K-105</td>
<td>March 2, 2020</td>
<td>Conventional</td>
<td>Fixed</td>
<td>10-Year</td>
<td>$1,400</td>
</tr>
<tr>
<td>K-HG2</td>
<td>March 2, 2020</td>
<td>SASB*</td>
<td>Fixed</td>
<td>10-Year</td>
<td>$650</td>
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<td>K-F76</td>
<td>March 9, 2020</td>
<td>Conventional</td>
<td>Floating</td>
<td>10-Year</td>
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<td>K-TBD</td>
<td>March 16, 2020</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
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<td>K-TBD</td>
<td>March 16, 2020</td>
<td>TBD</td>
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**FEBRUARY**

<table>
<thead>
<tr>
<th>Deal Name</th>
<th>Announcement Week Of</th>
<th>Freddie Mac Program</th>
<th>Collateral Rate Type</th>
<th>Collateral Loan Term</th>
<th>Projected Issuance Size ($ millions)**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MARCH**

<table>
<thead>
<tr>
<th>Deal Name</th>
<th>Announcement Week Of</th>
<th>Freddie Mac Program</th>
<th>Collateral Rate Type</th>
<th>Collateral Loan Term</th>
<th>Projected Issuance Size ($ millions)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-I05</td>
<td>March 2, 2020</td>
<td>Conventional</td>
<td>Fixed</td>
<td>10-Year</td>
<td>$1,400</td>
</tr>
</tbody>
</table>

**CALENDAR KEY**

- **A** OPTIONAL K CERTIFICATES ANNOUNCEMENT WEEK
- **H** = US HOLIDAY

**Note:**
- *SASB: Single Asset/Single Borrower
- **Approximate balance as of settlement**
- Freddie Mac retains sole discretion over whether or not the K-Certificates issuances come to market and the timing thereof, which may be impacted by market conditions. The information contained in the 2020 K-Certificates Announcement Calendar does not guarantee the timing of any future Freddie Mac offerings or the amount of such offerings. The Calendar may be amended, superseded or replaced. This Calendar is for informational purposes only and is not an offer to sell any Freddie Mac securities.
Alternative Risk Distribution Capabilities
Other Risk Transfer and Financing Vehicles

Freddie Mac Multifamily continues to add new risk transfer vehicles that complement our K-Deals and SB-Deals®

SUPPLEMENTAL LOAN INVESTMENT FUNDS
$1.3 BILLION COMMITMENT SINCE 2016 – 6 FUNDS
Transfers first loss risk on to-be-issued Freddie Mac KJ securitizations

STRUCTURED CREDIT RISK (SCR) NOTES
$2.9 BILLION OF REFERENCE POOLS SINCE 2016 – 3 TRANSACTIONS
Provides synthetic risk transfer structure typically for certain targeted affordable loans

AGGREGATION RISK TRANSFER CERTIFICATES (KT-DEALS)
$3.0 BILLION SINCE 2017 – 3 TRANSACTIONS
Transfers risk on loans awaiting securitization

WHOLE LOAN INVESTMENT FUNDS
$5.1 BILLION COMMITMENT SINCE 2017 – 5 FUNDS
Vehicle to transfer risk on less liquid loans e.g., Value-Add, Moderate Rehab

TAX-EXEMPT LOAN SECURITIZATION (ML-DEALS)
$1.5 BILLION SINCE 2017 – 6 TRANSACTIONS
Transfers risk on tax-exempt loans

MULTIFAMILY CREDIT INSURANCE POOL (MCIP)
$2.8 BILLION REFERENCE POOLS – SECOND TRANSACTION CLOSED IN 4Q19
Reinsurance provides first loss and/or mezzanine credit protection on loans and bonds
Multifamily Competition
Competition

Fannie Mae

- Fannie Mae’s Delegated Underwriting and Servicing (DUS) program allows pre-approved lenders to underwrite guaranteed loans on behalf of Fannie Mae
- Each individual loan is generally sold as a one-off DUS MBS
- Fannie Mae guarantees timely principal and interest on DUS MBS
- Loss sharing is split between the lender and Fannie Mae (e.g., 1/3 loss to lender, 2/3 to Fannie Mae)

DUS MBS

- Pass-thru cash flows versus structured cash flows on Freddie Mac K-Deals
- Fixed-rate DUS MBS is typically call protected with yield maintenance instead of defeasance as on Freddie Mac K-Deals
- Delinquencies are paid off at par by Fannie Mae after a series of missed payments, not worked out in the trust like Freddie Mac K-Deals
- Individual loans lack geographic diversity and have binary prepayment risk

GeMS

- Repackaging of DUS MBS by Fannie Mae into a REMIC structure
- Structures differ from deal to deal and based on the collateral mix compared with relatively static structures for Freddie Mac K-Deals
- GeMS likely have lower secondary liquidity. Issuance volume in 2018 was $9.68 billion versus $72.8 billion for Freddie Mac K-Deals
Investor Resources
Investor Overview

Since the K-Deal program’s inception in 2009, the investor base has grown significantly:

- 709 investors historically, with 347 participating in 2019
- Average of 30 different accounts per transaction historically, with 31 per transaction in 2019
- 58 subordinate investors historically, with 20 participating in 2019

Since the SB-Deal program’s inception in 2015, the investor base has grown significantly:

- 366 investors historically, with 175 participating in 2019
- Average of 27 different accounts per transaction historically, with 32 per transaction in 2019
- 12 subordinate investors historically, with five participating in 2019
- 67 new investors in 2019 through Q4 – almost 14 new investors per transaction for the year

---

1 Data reflects senior bond allocations YTD for deals closed through December 31, 2019
K- and SB-Deal Investor Participation

We continue to build on our K- and SB-Deal brands – growing our securitization volumes and investor base

Investor Participation

A total of 347 accounts purchased K-Deal bonds and 175 accounts purchased SB-Deal bonds in 2019, with an average of 31 different investors on each deal (averages for K, SB and combined)
Resources – Multifamily Loan Performance Database

Multifamily Loan Performance Database (MLPD) is available on mf.freddiemac.com. It provides quarterly performance information on Freddie Mac's loans which includes nearly 40,000 loans with a total origination UPB of over $500 billion that were purchased by Freddie Mac from 1994 through the end of 2019.

Of this reported population, approximately 0.20% has defaulted by UPB through the end of 2019.

Percent Defaulted By Funding Year

¹ The Multifamily Loan Performance Database (MLPD) provides historical information on a subset of the Freddie Mac multifamily loan portfolio. The MLPD comprises information regarding certain multifamily whole loan, K-Deal and SB-Deal® loans. It excludes loans that are credit revolvers, sold book (pre-1994) loans, and negotiated transactions/structured deals and K001 and K002.
Resources – Multifamily Securities Information Online

https://mf.freddiemac.com/investors/

On our website, you will find useful information on products offered by Freddie Mac Multifamily

**Issuance Calendars**
K-Deals, ML-Deals, SB-Deals and PCs. For other types of deals, please contact us.

**Performance Data**
Provide important current and historical information about securities and other offerings.

**Presentation and Detailed Information**
Securities offered by Freddie Mac Multifamily, including K and KT Certificates, SB Certificates®, Q Certificates, M Certificates and ML Certificates.

**Links to our Recent Headlines**
This section offers our latest news releases.

Investor Inquiries
Multifamily Securities Investor Access (MSIA) is an online tool that provides investors and analysts with information related to Freddie Mac’s K-Deals, ML-Deals, Q-Deals, SB-Deals and PCs securities and their underlying collateral. It also provides information about new risk transfer vehicles added.

Available data includes:

- Standard Investor Reporting Package provided on a monthly basis by the Master Servicer and trustee for a given security issuance
- K-Deal Supplemental Mortgage Report
- For a single deal or a portfolio, this tool provides a combination of standard and custom reporting capabilities:
  - Bond Level Data
  - Collateral Summary
  - Delinquent Loan Status Report
  - Distribution Date Statement (PDF)
  - Distribution Date Statement (XLS)
  - Financial File
  - Loan Periodic Data
  - Operating Statement Analysis Report (PDF)
  - Operating Statement Analysis Report (XLS)
  - Property Summary
  - Restricted Servicer Reports
Resources – Multifamily Research

Steve Guggenmos
VP, Research & Modeling

Steve leads multifamily research at Freddie Mac. In this role he performs research related to national and market-specific multifamily conditions. His team supports the multifamily business by developing models and quantitative approaches that determine risk-based capital allocations. The models capture loan level risks and also the benefits of the diversification and structural credit support for pools of multifamily mortgages, supporting the core business strategies of Freddie Mac Multifamily.

Multifamily 2020 Outlook

Introducing the Floating-Rate Prepayment Report

November 2019 SBL Prepayment Report

2019 Analysis of Green Improvements in Workforce Housing

Shining a Spotlight on Underserved Markets in 2019 (Series)

The Freddie Mac Multifamily Apartment Investment Market Index® (AIMI®) can help you determine how the relative value of investing in multifamily properties in select major metros, and nationally, has changed over time

https://mf.freddiemac.com/aimi/

Subscribe to our Multifamily newsletters to receive timely research reports, product updates and more

Listen in to the latest Multifamily podcast. Recent topics include macro economics, market fundamentals, changing demographics, innovations, multifamily trends and legal perspectives on the multifamily market
APPENDIX I

Recent Transaction Highlights
K-103
Transaction Highlights

### Overview of Deal Structure (Pricing Date: December 11, 2019)

<table>
<thead>
<tr>
<th>Class</th>
<th>Initial Principal or Notional Amount</th>
<th>Pricing Spread</th>
<th>Assumed Weighted Average Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>$109,473,000</td>
<td>S+56</td>
<td>6.98</td>
</tr>
<tr>
<td>A-2</td>
<td>$929,128,000</td>
<td>S+57</td>
<td>9.85</td>
</tr>
<tr>
<td>A-M</td>
<td>$59,029,000</td>
<td>S+62</td>
<td>9.93</td>
</tr>
<tr>
<td>X1</td>
<td>$1,038,601,000</td>
<td>T+145</td>
<td>9.31</td>
</tr>
<tr>
<td>XAM</td>
<td>$59,029,000</td>
<td>N/A</td>
<td>9.93</td>
</tr>
<tr>
<td>X3</td>
<td>$178,684,803</td>
<td>T+275</td>
<td>9.73</td>
</tr>
</tbody>
</table>

Offered K-103 Certificates: Total Guaranteed $1,097,630,000

### Deal Characteristics

- **Collateral Type**: Multifamily Fixed-Rate Mortgage Loans
- **Collateral Structure Type**: Balloon
- **Mortgaged Loans**: 46
- **Initial Underlying Pool Balance**: $1,276,314,807
- **Rating Agencies**: Fitch/KBRA
- **Waterfall Structure**: Sequential
- **Top 5 State Concentrations**: CA (13.9%), CO (9.3%), FL (8.8%), TX (7.7%), IL (7.2%)
- **WA Mortgage Interest Rate**: 3.686%
- **WA Original Maturity**: 120 months
- **WA DSCR**: 1.40x
- **WA LTV**: 66.9%

### Structural Diagram

- **Freddie Mac (Mortgage Loan Seller)**
- **FREMF 2019-K103 Mortgage Trust**
- **Class A-1, A-2, A-M, X1, XAM & X3**
- **Freddie Mac SPC Trust, Series K-103 Classes A-1, A-2, A-M, X1, XAM & X3**
- **Investors (including Freddie Mac)**
- **Investors**
- **Investors**

### Breakdown of Investors (Classes A-1, A-2, A-M, B and C)

- **Money Manager**: 38.1%
- **Insurance Company/Pension Plan**: 14%
- **Hedge Fund**: 19%
- **Bank**: 24%
- **Other**: 4.8%

---

1 As of the Cut-off Date
2 As of the Closing Date
K-736
Transaction Highlights

Overview of Deal Structure (Pricing Date: September 4, 2019)

<table>
<thead>
<tr>
<th>Class</th>
<th>Initial Principal or Notional Amount</th>
<th>Pricing Spread</th>
<th>Assumed Weighted Average Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>$110,482,000</td>
<td>S+44</td>
<td>3.56</td>
</tr>
<tr>
<td>A-2</td>
<td>$1,093,460,000</td>
<td>S+53</td>
<td>6.64</td>
</tr>
<tr>
<td>A-M</td>
<td>$68,427,000</td>
<td>S+58</td>
<td>6.86</td>
</tr>
<tr>
<td>X1</td>
<td>$1,203,942,000</td>
<td>T+90</td>
<td>6.06</td>
</tr>
<tr>
<td>XAM</td>
<td>$68,427,000</td>
<td>T+59</td>
<td>6.61</td>
</tr>
<tr>
<td>X3</td>
<td>$207,130,486</td>
<td>T+195</td>
<td>6.62</td>
</tr>
</tbody>
</table>

Total Guaranteed: $1,272,369,000

Deal Characteristics

- **Collateral Type**: Multifamily Fixed-Rate Mortgage Loans
- **Collateral Structure Type**: Balloon
- **Mortgaged Loans**: 43
- **Initial Underlying Pool Balance**: $1,479,499,487
- **Rating Agencies**: Fitch/DBRS
- **Waterfall Structure**: Sequential
- **Top 5 State Concentrations**: IL (15.6%), CO (13.2%), TX (11.3%), NV (10.4%), GA (10.3%)
- **WA Mortgage Interest Rate**: 3.878%
- **WA Original Maturity**: 83 months
- **WA DSCR**: 1.49x
- **WA LTV**: 69.1%

Structural Diagram

- Freddie Mac (Mortgage Loan Seller)
- FREMF 2019-K736 Mortgage Trust
- Classes A-1, A-2, A-M, X1, XAM & X3
- Class D
- Class B and C
- Freddie Mac SPC Trust, Series K-736
- Classes A-1, A-2, A-M, X1, XAM & X3
- Investors (including Freddie Mac)
- Investors
- Investors

Breakdown of Investors (Classes A-1, A-2, A-M, B and C)

- Bank: 67%
- Money Manager: 23%
- Other: 5%
- Hedge Fund: 1%
- Insurance Company/Pension Plan: 5%

1 As of the Cut-off Date
2 As of the Closing Date
Overview of Deal Structure (Pricing Date: December 12, 2019)

<table>
<thead>
<tr>
<th>Class</th>
<th>Initial Principal or Notional Amount</th>
<th>Discount Margin</th>
<th>Assumed Weighted Average Life</th>
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</thead>
<tbody>
<tr>
<td>AL</td>
<td>$565,645,000</td>
<td>60</td>
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<tr>
<td>AS</td>
<td>$200,000,000</td>
<td>67</td>
<td>9.54</td>
</tr>
<tr>
<td>XI</td>
<td>$850,717,000</td>
<td>N/A</td>
<td>9.59</td>
</tr>
<tr>
<td>XP</td>
<td>$850,717,000</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Total Guaranteed</td>
<td>$765,645,000</td>
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</tr>
</tbody>
</table>

Deal Characteristics

- **Collateral Type**: Multifamily Floating-Rate Mortgage Loans
- **Collateral Structure Type**: Balloon
- **Mortgaged Loans**: 38
- **Initial Underlying Pool Balance**: $850,717,000
- **Rating Agencies**: Not Rated
- **Waterfall Structure**: Pro Rata
- **Top 5 State Concentrations**: TX (39.2%), FL (12.4%), GA (10.1%), MD (9.3%), CO (5.3%)
- **WA Original Maturity**: 121 months
- **WA DSCR**: 1.32x
- **WA LTV**: 70.0%

Structural Diagram

- Freddie Mac (Mortgage Loan Seller)
- FREMF 2019-KF73 Mortgage Trust
- Classes AL, AS, XI & XP
- Freddie Mac SPC Trust, Series K-F73 Classes AL, AS, XI & XP
- Investors (including Freddie Mac)
- Class B
- Class C
- Investors
- Investors

Breakdown of Investors (Classes AL, AS and B)

- **Bank**: 37%
- **Money Manager**: 14%
- **Hedge Fund**: 7%
- **Foreign Investors**: 2%
- **Insurance Company/Pension Plan**: 1%
- **Other**: 39%

1 As of the Cut-off Date
2 As of the Closing Date

Note: Floating-rate K-Deals now include one bond class indexed to SOFR
K-J27
Transaction Highlights

Overview of Deal Structure (Pricing Date: November 20, 2019)

<table>
<thead>
<tr>
<th>Class</th>
<th>Initial Principal or Notional Amount</th>
<th>Pricing Spread</th>
<th>Assumed Weighted Average Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offered K-J27 Certificates:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-1</td>
<td>$106,760,000</td>
<td>S+53</td>
<td>3.03</td>
</tr>
<tr>
<td>A-2</td>
<td>$64,147,000</td>
<td>S+62</td>
<td>5.00</td>
</tr>
<tr>
<td>X</td>
<td>$213,633,760</td>
<td>N/A</td>
<td>3.79</td>
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<tr>
<td>Total Guaranteed</td>
<td>$170,907,000</td>
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</tr>
</tbody>
</table>

Deal Characteristics1

- Collateral Type: Multifamily Supplemental Mortgage Loans
- Collateral Structure Type: Balloon
- Mortgaged Loans: 39
- Initial Underlying Pool Balance: $213,633,761
- Rating Agencies: Not Rated
- Waterfall Structure: Pro Rata
- State Concentration: TX (30.9%), CA (12.9%), CO (10.1%), FL (7.6%), NJ (5.2%)
- WA Mortgage Interest Rate: 5.338%
- WA Original Maturity: 57 months
- WA DSCR: 1.52x
- WA LTV: 58.9%

Structural Diagram


Breakdown of Investors (Classes A-1 and A-2)²

- Insurance Company/Pension Plan: 14%
- Bank: 19%
- Hedge Fund: 4%
- Money Manager: 63%

1 As of the Cut-off Date
2 As of the Closing Date
K-W10
Transaction Highlights

Overview of Deal Structure (Pricing Date: November 14, 2019)

<table>
<thead>
<tr>
<th>Class</th>
<th>Initial Principal or Notional Amount</th>
<th>Pricing Spread</th>
<th>Assumed Weighted Average Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offered K-W10 Certificates:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-1</td>
<td>$53,531,000</td>
<td>S+56</td>
<td>6.70</td>
</tr>
<tr>
<td>A-2</td>
<td>$420,600,000</td>
<td>S+63</td>
<td>9.75</td>
</tr>
<tr>
<td>X1</td>
<td>$474,131,000</td>
<td>T+160</td>
<td>9.18</td>
</tr>
<tr>
<td>X3</td>
<td>$52,681,889</td>
<td>T+320</td>
<td>9.62</td>
</tr>
<tr>
<td>Total Guaranteed</td>
<td>$474,131,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Deal Characteristics\(^1\)

- Collateral Type: Multifamily Workforce Housing Mortgage Loans
- Collateral Structure Type: Balloon
- Mortgaged Loans: 39
- Initial Underlying Pool Balance: $526,812,889
- Rating Agencies: Not Rated
- Waterfall Structure: Sequential
- Top 5 State Concentrations: MD (13.6%), PA (10.7%), NJ (9.5%), TX (7.9%), TN (7.6%)
- WA Mortgage Interest Rate: 3.886%
- WA Original Maturity: 120 months
- WA DSCR: 1.42x
- WA LTV: 73.0%

Structural Diagram

Breakdown of Investors (Classes A-1 and A-2)\(^2\)

- Insurance Company/ Pension Plan: 3%
- Money Manager: 17%
- Bank: 80%

\(^1\) As of the Cut-off Date
\(^2\) As of the Closing Date
K-1514
Transaction Highlights

Overview of Deal Structure (Pricing Date: December 6, 2019)

<table>
<thead>
<tr>
<th>Class</th>
<th>Initial Principal or Notional Amount</th>
<th>Pricing Spread</th>
<th>Assumed Weighted Average Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>$90,000,000</td>
<td>S+69</td>
<td>10.73</td>
</tr>
<tr>
<td>A-2</td>
<td>$557,691,000</td>
<td>S+80</td>
<td>14.84</td>
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<tr>
<td>X1</td>
<td>$647,691,000</td>
<td>T+175</td>
<td>13.83</td>
</tr>
<tr>
<td>X3</td>
<td>$71,965,739</td>
<td>T+345</td>
<td>14.62</td>
</tr>
<tr>
<td><strong>Total Guaranteed</strong></td>
<td><strong>$647,691,000</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Deal Characteristics¹

- **Collateral Type**: Multifamily Fixed-Rate Mortgage Loans
- **Collateral Structure Type**: Balloon
- **Mortgaged Loans**: 29
- **Initial Underlying Pool Balance**: $719,656,740
- **Rating Agencies**: Not Rated
- **Waterfall Structure**: Sequential
- **Top 5 State Concentrations**: MI (24.9%), CA (23.8%), CO (13.1%), OR (8.8%), WA (5.0%)
- **WA Mortgage Interest Rate**: 3.820%
- **WA Original Maturity**: 180 months
- **WA DSCR**: 1.43x
- **WA LTV**: 70.3%

Structural Diagram

- **Freddie Mac SPC Trust, Series K-1514 Classes A-1, A-2, X1 & X3 Investors (including Freddie Mac)**
- **Class A-1, A-2, X1 & X3 Investors**
- **Class B Investors**
- **Class C Investors**
- **Investors**

Breakdown of Investors (Classes A-1, A-2, and B)²

- Insurance Company / Pension Plan: 32%
- Foreign Investors: 1%
- Hedge Fund: 3%
- Money Manager: 63%
- Bank: 1%

¹ As of the Cut-off Date
² As of the Closing Date
K-C07
Transaction Highlights

Overview of Deal Structure (Pricing Date: December 4, 2019)

<table>
<thead>
<tr>
<th>Class</th>
<th>Initial Principal or Notional Amount</th>
<th>Pricing Spread</th>
<th>Assumed Weighted Average Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offered K-C07 Certificates:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-SB</td>
<td>$50,500,000</td>
<td>S+65</td>
<td>5.10</td>
</tr>
<tr>
<td>A-7</td>
<td>$500,183,000</td>
<td>S+74</td>
<td>6.78</td>
</tr>
<tr>
<td>A-10</td>
<td>$49,042,000</td>
<td>S+78</td>
<td>9.75</td>
</tr>
<tr>
<td>X1</td>
<td>$599,725,000</td>
<td>T-100</td>
<td>4.86</td>
</tr>
<tr>
<td>X-NCP</td>
<td>$599,725,000</td>
<td>N/A</td>
<td>6.88</td>
</tr>
</tbody>
</table>

Deal Characteristics¹

- Collateral Type: Multifamily Fixed-Rate Mortgage Loans
- Collateral Structure Type: Balloon
- Mortgaged Loans: 31
- Initial Underlying Pool Balance: $666,361,000
- Rating Agencies: N/A
- Waterfall Structure: Sequential
- Top 5 State Concentrations: TX (26.0%), GA (14.6%), OR (12.8%), NC (11.4%), FL (9.1%)
- WA Mortgage Interest Rate: 3.758%
- WA Original Maturity: 91 months
- WA DSCR: 1.41x
- WA LTV: 69.4%

Structural Diagram


Breakdown of Investors (Classes A-SB, A-7, A-10 and B)²

- Insurance Company/Pension Plan: 18%
- Bank: 58%
- Money Manager: 9%
- Other: 12%
- Hedge Fund: 3%

¹ As of the Cut-off Date
² As of the Closing Date
K-G02
Transaction Highlights

Overview of Deal Structure (Pricing Date: October 10, 2019)

<table>
<thead>
<tr>
<th>Class</th>
<th>Initial Principal or Notional Amount</th>
<th>Pricing Spread</th>
<th>Assumed Weighted Average Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>$74,726,000</td>
<td>S+57</td>
<td>6.80</td>
</tr>
<tr>
<td>A-2</td>
<td>$415,000,000</td>
<td>S+61</td>
<td>9.64</td>
</tr>
<tr>
<td>X-1</td>
<td>$489,726,000</td>
<td>T+165</td>
<td>8.97</td>
</tr>
<tr>
<td>X-3</td>
<td>$54,414,000</td>
<td>N/A</td>
<td>9.60</td>
</tr>
<tr>
<td>Total Guaranteed</td>
<td>$489,726,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Deal Characteristics¹

- **Collateral Type**: Multifamily Fixed-Rate Mortgage Loans
- **Collateral Structure Type**: Balloon
- **Mortgaged Loans**: 17
- **Initial Underlying Pool Balance**: $544,140,000
- **Rating Agencies**: Not Rated
- **Waterfall Structure**: Sequential
- **Top 5 State Concentrations**: MD (26.1%), PA (12.1%), CA (11.6%), FL(11.1%), NV (8.4%)
- **WA Mortgage Interest Rate**: 3.909%
- **WA Original Maturity**: 117 months
- **WA DSCR**: 1.39x
- **WA LTV**: 73.3%

Structural Diagram

Freddie Mac (Mortgage Loan Seller) → FREMF 2019-KG02 Mortgage Trust → Classes A-1, A-2, X-1 & X3 → Freddie Mac SPC Trust, Series K-G02 Classes A-1, A-2, X1 & X3 → Investors (including Freddie Mac)

Breakdown of Investors (Classes A-1, A-2, X1 and X3)²

- Money Manager: 48%
- Hedge Fund: 11%
- Insurance Company/Pension Plan: 11%
- Bank: 22%
- Other: 8%

¹ As of the Cut-off Date
² As of the Closing Date
SB-69
Transaction Highlights

Overview of Deal Structure (Pricing Date: December 11, 2019)

<table>
<thead>
<tr>
<th>Class</th>
<th>Initial Principal or Notional Amount</th>
<th>Pricing Spread</th>
<th>Assumed Weighted Average Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-5F</td>
<td>$63,478,897</td>
<td>S+47</td>
<td>4.08</td>
</tr>
<tr>
<td>A-5H</td>
<td>$170,424,290</td>
<td>S+63</td>
<td>4.12</td>
</tr>
<tr>
<td>A-10F</td>
<td>$109,267,869</td>
<td>S+67</td>
<td>7.24</td>
</tr>
<tr>
<td>A-10H</td>
<td>$69,852,657</td>
<td>S+79</td>
<td>7.29</td>
</tr>
<tr>
<td>X1</td>
<td>$413,023,713</td>
<td>N/A</td>
<td>5.48</td>
</tr>
<tr>
<td>Total Guaranteed</td>
<td>$413,023,713</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Deal Characteristics

- **Collateral Type**: Multifamily Small Balance Loans
- **Initial Underlying Pool Balance**: $458,915,238
- **Mortgage Loans**: 179
- **Rating Agencies**: Not Rated
- **WA Initial Fixed Mortgage Interest Rate**: 4.243%
- **WA DSCR**: 1.38x
- **WA LTV**: 67.6%
- **WA Original Maturity**: 181 Months
- **Waterfall Structure**: Pro Rata
- **Top 5 State Concentrations**: NY (15.3%), CA (12.1%), NJ (11.0%), TX (10.7%), WA (7.7%)

Structural Diagram


- **Class B Investors**
- **Investors (including Freddie Mac)**
- **Insurance Company / Pension Plan**: 13%
- **Bank**: 80%
- **Money Manager**: 7%

1 As of the Cut-off Date
2 As of the Closing Date
3 Assumes a 5% CPR prepayment speed until the earlier of each underlying loan’s maturity date or first interest reset date, at which time the loan is assumed to pay in full
4 Waterfall structure will change from pro rata to sequential upon the earlier of (i) the aggregate Stated Principal Balance of the underlying loans as of the related determination date is less than or equal to 15% of the initial Principal Balance of the pool (ii) aggregate loans that are at least 60 days delinquent is greater than 3% of pool balance UPB or (iii) the Class B percentage is less than 7.5% as of the related distribution date
APPENDIX II

Our Team
Investor Relations Team

Robert Koontz,  
Senior Vice President, Multifamily Capital Markets  
McLean, Virginia

Robert heads the Multifamily Capital Markets team, which includes loan pricing, structuring and securitization activities for all multifamily loan purchases. He is the senior relationship manager with securities investors, credit rating agencies and the broker/dealer community. Additionally, he leads and ensures the strategic alignment between the portfolio management and the research and modeling teams within Multifamily. Robert, a veteran of the commercial mortgage-backed securities industry, has been instrumental in developing new securities structures and capital markets innovations for Freddie Mac Multifamily.

Amanda Nunnink,  
Vice President, Investor Relations  
Chicago, Illinois

Amanda leads the investor relations team, which markets our multifamily securities platform, including our popular K-Deals, to bond and real estate investors. Amanda joined Freddie Mac in 2012 and has significant experience in real estate finance, including over 12 years in production and sales.

For additional details, view the Capital Markets Directory
Multifamily Line of Business

**Freddie Mac Multifamily operates as a fully integrated line of business and has a largely independent operating infrastructure**

**Debby Jenkins, Executive Vice President, Head of Multifamily Business**

Debby Jenkins serves as executive vice president of Freddie Mac Multifamily. In this role, she leads a team of approximately 1,000 people tasked with providing liquidity and stability to multifamily mortgage markets while supporting affordable rental housing throughout the country. She previously served as senior vice president of Multifamily Underwriting and Credit — the principal manager of underwriting and credit approvals for all Multifamily debt investments, credit policy governance and asset-level securitization activities. Debby spearheaded enhancements in the Multifamily division’s underwriting process specifically to stand up its securitization program, including its K- and SB-Deals. Before joining Freddie Mac in March 2008, she was a senior vice president at Wells Fargo National Bank in Michigan.

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