



CWCapital Asset Management LLC
Commercial Mortgage Servicer / North America

July 2019

FitchRatings

Content

| | |
|---|----|
| Servicer Summary | 3 |
| Key Ratings Drivers | 4 |
| Company Overview | 5 |
| Financial | 8 |
| Employees | 9 |
| Operational Infrastructure | 11 |
| Information Technology | 12 |
| Internal Control Environment | 14 |
| Defaulted Loan Management — Special Servicing | 16 |
| Governance and Conflict of Interest | 19 |

Servicer Summary



CWCapital Asset Management LLC (CWCAM, or the company) is a commercial real estate (CRE) asset manager and is a wholly owned subsidiary of CW Financial Services LLC (CWFS). CWCAM predominately acts as special servicer for third-party clients as well as its affiliates. Historically one of the largest active legacy CMBS special servicers, CWCAM faces significant runoff of active specially serviced assets due to the resolution and wind down of older vintage transactions. By loan count, the company’s active CMBS portfolio declined 63% since 2016.

Relative to other large legacy CMBS special servicers, CWCAM has been the most successful in gaining third-party servicing assignments for new issue CMBS and Freddie Mac K-series transactions partially offsetting these declines. In 2018, CWCAM added over \$29.3 billion in named special servicing volume across 38 transactions, up from \$16.7 billion in 19 transactions at the last review. All new special servicing assignments continue to come from third parties and remain mostly Freddie Mac K-series transactions, which represented 24 of the 38 new deals.

Servicer Ratings

- Fitch rates primary and master servicers, which protect the interests of the certificateholders in the trust, by servicing and administering the mortgage loans. The primary servicer is responsible for day-to-day servicing functions, while the master servicer is responsible for monitoring the activities of the primary servicers, investor reporting and timely remittance of funds to trustees.
- Fitch also rates special servicers, which are key to maintaining the credit quality of a pool containing nonperforming commercial mortgages and real estate-owned assets. The special servicer is responsible for working out loans, foreclosing and liquidating assets.
- In assessing and analyzing the capabilities of primary, master and special servicers, Fitch reviews several key factors, including the management team, organizational structure and operating history, financial condition, information systems and, with respect to the special servicer, workout and asset disposition experience and strategies.
- Fitch rates commercial mortgage primary, master, and special servicers on a scale of 1 to 5, with 1 being the highest rating. Within each of these rating levels, Fitch further differentiates ratings by plus (+) and minus (–) as well as the flat rating.

Ratings

| | |
|-----------------------------|-------|
| Commercial Special Servicer | CSS2+ |
|-----------------------------|-------|

Related Research

- [Fitch Affirms CWCapital Asset Management LLC’s Commercial Special Servicer Rating \(June 2019\)](#)

Related Criteria

- [Criteria for Rating Loan Servicers \(February 2017\)](#)
- [Criteria for Rating North American Commercial Mortgage Servicers \(February 2017\)](#)

Analysts

James Bauer
+1 212 908-0343
james.bauer@fitchratings.com

Adam Fox
+1 212 908-0869
adam.fox@fitchratings.com

Key Rating Drivers

Company/Management: CWFS is owned by funds managed by affiliates of Fortress Investment Group (Fortress). On Dec. 27, 2017, SoftBank Group Corp. acquired Fortress, which now operates within SoftBank as an independent business. There has been no change to CWFS's immediate ownership structure. CWCAM remains an integral component of CWFS's business plan. CWCAM is mainly a third-party special servicer and gains servicing assignments for new issue CMBS transactions by providing due diligence, underwriting and surveillance duties for clients who purchase B-pieces. CWFS has, in the past, also selectively purchased B-pieces and the transactions are specially serviced by CWCAM.

Staffing and Training: Overall turnover increased materially to 43% from 19% at the last review. While Fitch Ratings is concerned about the high turnover, particularly the concentration in administrative support functions; it is expected to be isolated and management stated that no further staff reductions are planned. Of the 26 employee departures, 10 were involuntary with the remainder voluntary. Overall average years of experience and tenure with the company did not materially decline as CWCAM still maintains a strong group of employees.

With the decline in both asset managers and assets the ratio of assets to asset managers remained consistent at 10:1 compared to 8:1 at Fitch prior review. While asset manager turnover remains high at 31% compared to 40% at Fitch's last review, the company still employs a highly experienced group of asset managers who average 21 years of experience.

Procedures and Controls: CWCAM's internal control framework is predicated on controls built into the special servicing technology and management reviews of special servicing functions. Supplementing these, CWCAM maintains a dedicated operations and compliance group, a compliance committee monitoring exception reports from the operations and compliance group.

Fitch is concerned with recent turnover affecting the internal control groups as well as a recent RegAB finding. While the evolving nature of the internal control environment remains a concern, CWCAM has actively taken steps to address the issues. Staffing departures in the operations and compliance group were backfilled with existing staff and the internal audit function is in the process of being outsourced to a third-party subject matter expert.

Technology: CWCAM is currently running on two asset management systems, Commercial Asset Management System (CAMS) as well as ReallINSIGHT, which Fitch notes has the potential to create operational inefficiencies. However, Fitch views CWCAM's dedication to developing and enhancing its special servicing technology favorably. Currently, all special servicing workouts are performed in CAMS as well as the surveillance of legacy CMBS transactions. Surveillance of new issue transactions are performed on ReallINSIGHT. As the legacy portfolio winds down, CWCAM will eventually consolidate to the cloud-based ReallINSIGHT platform. CAMS and ReallINSIGHT are among the most robust special servicing applications and reflects the company's dedication to developing and enhancing its special servicing technology.

During 2018, CWCAM completed its migration to a cloud-based platform for its technology infrastructure, improving application speeds and reducing operational costs. The new platform has data replication abilities limiting potential data loss. CWCAM's disaster recovery and business continuity practices rely on remote access with the cloud-based platform; however, the company maintains a contract for limited office space near its headquarters.

Defaulted/Nonperforming Loan Management: CWCAM resolved \$2.4 billion of CMBS loans and real estate owned (REO) in the past 12 months. As of year-end 2018, the active CMBS special servicing portfolio, including REO, has declined by 63% by loan count in the past 24 months as legacy CMBS transactions continue to be resolved and resolutions exceed new loan defaults.

| Company Experience Since: | |
|---------------------------|------|
| CRE Loan Workout | 1995 |
| CMBS Workout | 1995 |

| Operational Trends | |
|----------------------|---|
| Business Plan | Stable business plan with steady flow of new business offsetting portfolio declines  |
| Servicing Portfolio | Year-over-year loan count change of approximately 10%  |
| Financial Condition | Outlook/Trend  |
| Staffing | Staffing decline  |
| Technology | Best in class to improving technology, well managed upgrades  |
| Internal Controls | Lack of independent quality control or compliance; material audit findings  |
| Servicing Operations | Stable operations, no material changes year-over-year  |

Company Overview

In 2005, CWFS acquired Allied Capital Corporation’s (Allied Capital) CMBS bond portfolio and, in 2006, an affiliate of CWCAM merged with CRIIMI MAE Inc. (CRIIMI MAE), whose servicing platform was founded in 1995, and the special servicing operations were consolidated into CWCAM. CWCAM is the special servicing subsidiary of CWFS, representing a core business central to CWFS’s operations. CWFS is wholly owned by funds managed by affiliates of Fortress, which purchased all of the membership interest in CWFS from Otéra Capital in 2010, a wholly owned subsidiary of Caisse de dépôt et placement du Québec.

CWFS maintains a suite of wholly owned subsidiaries that support CWCAM on a fee basis:

- CWCapital Investments LLC (CWC): a registered investment advisor that acts as collateral manager on commercial debt obligation (CDO) transactions for which CWCAM is generally the special servicer for any underlying CMBS transactions.
- REDS: a CWFS affiliate broker that manages the sale of CWCAM loan and REO assets as co-broker with third-party brokers. Currently, 100% of loan and REO asset sales are managed by REDS, which works at the direction of CWCAM.
- CWFS Insight LLC (DBA RealINSIGHT): the developer of the company’s special servicing application.
- ConvergentRisk: provides consulting and advisory services regarding insurance coverage.
- CWCapital Markets LLC (CWCM): CWCM acts as an intermediary placing capital into transactions and earns fees from capital investors or borrowers of capital.

Servicing Portfolio Overview

| | 2018 | % Change | 2017 | % Change | 2016 |
|---|----------|----------|----------|----------|----------|
| Special Servicing — Named | | | | | |
| UPB (\$ Mil.) | 91,974.4 | 23 | 74,968.1 | (8) | 81,088.0 |
| No. of Loans | 5,233 | 3 | 5,069 | (18) | 6,186 |
| Special Servicing — Active^a | | | | | |
| UPB (\$ Mil.) | 2,601.5 | (21) | 3,276.0 | (42) | 5,695.3 |
| No. of Loans | 117 | (37) | 186 | (40) | 308 |

^aIncluding REO. UPB — Unpaid principal balance. Note: Years ended Dec. 31.
Source: CWCAM.

Special Servicing Portfolio

(% Change from Prior Period)



Note: Active special servicing includes REO.
Source: CWCAM.

Note:

Historically, REDS worked exclusively for CWCAM; however, beginning in 2017, REDS closed several deals on behalf of third parties and currently has 26 third-party clients.

Office Locations



■ Primary office

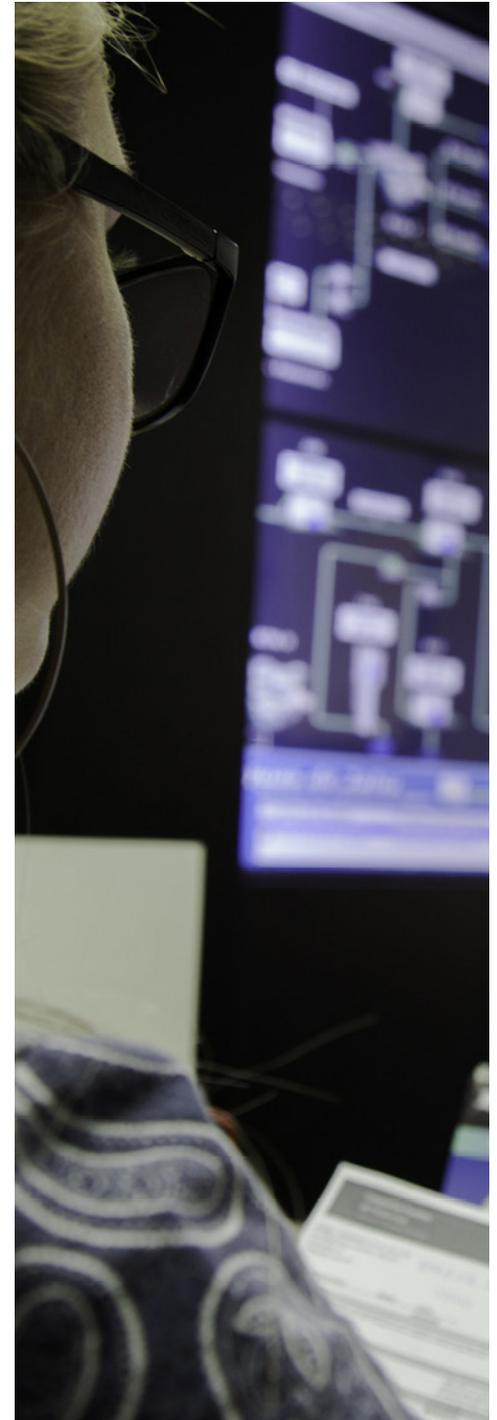
Company Overview *(Cont'd)*

As of Dec. 31, 2018, CMBS made up 72% of CWCAM's total named special servicing portfolio by loan count. The company's special servicing portfolio initially consisted of CMBS portfolios acquired from Allied Capital and CRIIMI MAE who owned the controlling classes. While not an active investor in CMBS B-pieces, CWFS has purchased controlling bonds in the past, most recently in 2016 from a third-party client exiting the business. CWFS has no plans to raise funds or purchase additional CMBS B-pieces. CWFS is not an active CRE lender, having sold its lending and primary servicing operations in 2012.

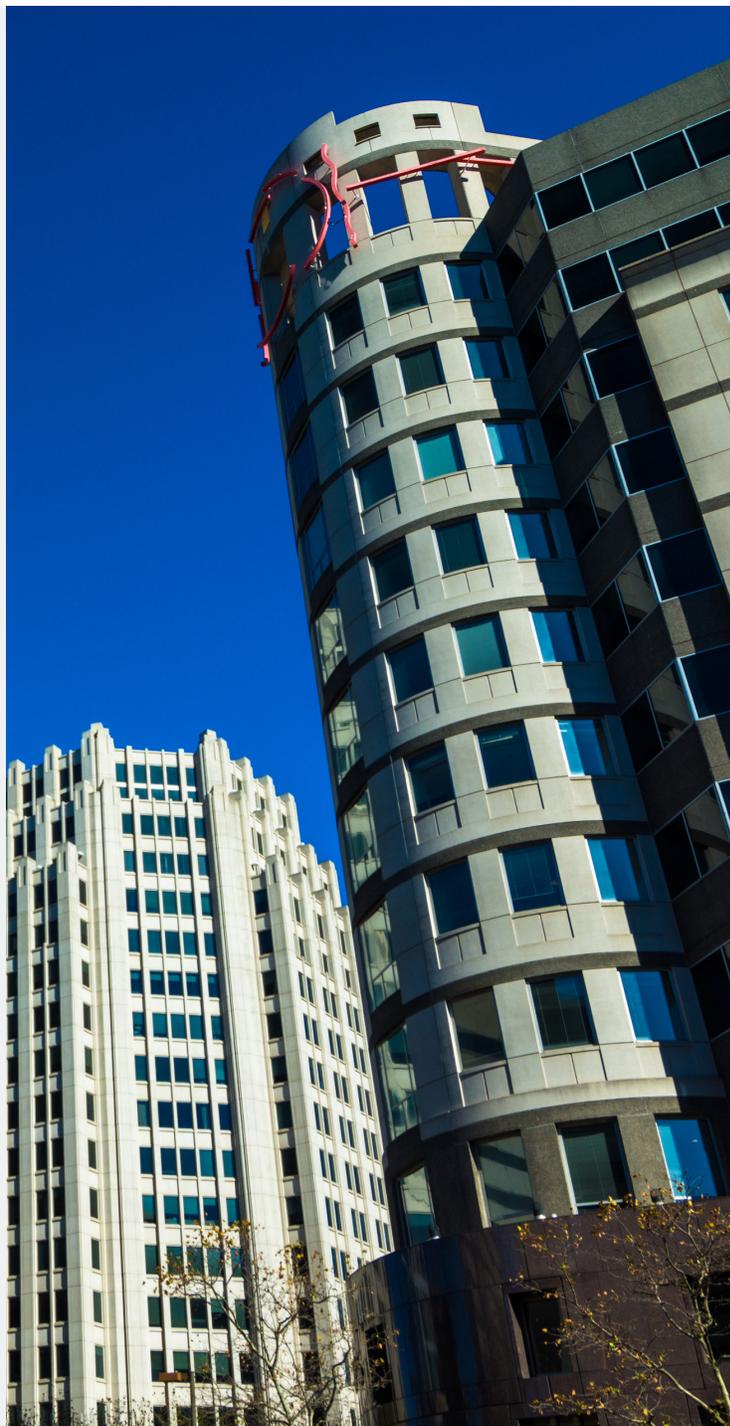
As one of the largest third-party special servicers, CWCAM gains servicing assignments for new issue CMBS transactions by providing due diligence, underwriting and surveillance duties for clients who purchase B-pieces. The majority (81% by transaction, up from 73% and 61% at Fitch's last two reviews) of the company's current CMBS assignments are on behalf of third parties. CWCI or affiliates act as the controlling class representative (CCR) for 19% of CWCAM's special servicing portfolio; however, if CDO transactions, for which CWCI manages or acts as disposition consultant, are removed, affiliates of CWCAM act as controlling bondholders for 6% of CWCAM's special servicing portfolio. CWCI manages 18 CDO transactions totaling approximately \$679.8 million in collateral principal balance.

Special servicers with heavy concentrations in pre-2009 vintage transactions share the challenge of a declining portfolio with the maturities and resolutions of legacy vintage transactions. CWCAM's CMBS active special servicing portfolio has declined by 63% and the named special servicing portfolio has declined by 11% by loan count since 2016. With 33% of the company's 145 named CMBS transactions securitized before 2009, CWCAM continues to face significant portfolio runoff as legacy deals wind down and assets are resolved.

Headquartered in Bethesda, MD, CWCAM had 50 employees in its special servicing operation as of Dec. 31, 2018, down from 70 employees as of Dec. 31, 2017, located primarily in Bethesda with regional offices in Baltimore, MD, Irving, TX, and New York, NY. A select few special servicing staff and asset managers are located in each regional office and there is a concentration of RealINSIGHT staff in Irving and CWFS staff in New York.



“While 33% of the special servicing portfolio was securitized before 2009 (down from 66% at Fitch’s 2016 review) indicating challenges from continued run off, CWCAM has been successful in gaining servicing assignments for new issue CMBS transactions as a third-party special servicer. In 2018, CWCAM added over \$29.3 billion in named special servicing volume across 38 transactions, up from \$16.7 billion in 19 transactions at the last review.”



Financial

Fitch does not publicly maintain an Issuer Default Rating for CWCAM or its parent, CWFS. However, Fitch performed a financial assessment of CWFS and determined the company's short-term financial viability adequate to support the servicing platform for the next 12 months.

Fitch's assessment highlighted the company's scale and track record in legacy CMBS special servicing as well as its balance sheet that consists of minimal debt obligations and limited to no default risk under its current capital structure. Since the last review, CWFS experienced deterioration in EBITDA and revenue trends from 2017 to 2018.

In anticipation of continued material declines in special servicing revenues, CWFS increased diversity through ancillary business segments that should allow a smoother transition through a less profitable period of CMBS servicing. As the portfolio declines, CWFS is continuing to manage labor costs.

CWFS is ultimately owned by entities with finite lives. Capital allocation decisions such as the timing and sizing of dividends to the parent or further investment in the company may be determined by CWCAM's ability to generate returns and cash distributions.



Employees

CWCAM had 50 special servicing employees as of Dec. 31, 2018 (down from a peak of 160 employees in 2011), including 12 asset managers (down from 22 at the last review) who contribute to other company initiatives such as borrower consent processing and underwriting due diligence services.

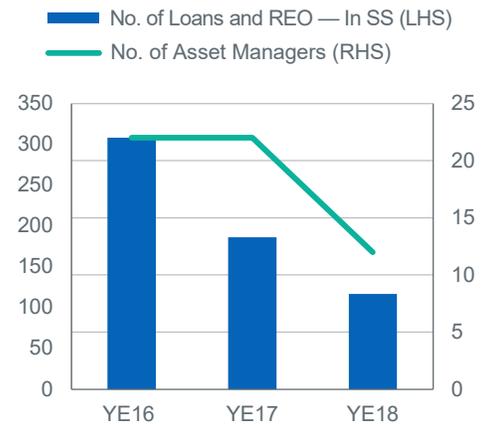
CWCAM maintains an experienced senior management team over special servicing functions as eight senior managers average 32 years of experience and 11 years of company tenure. During 2018 CWCAM experienced some management transitions. The former president became the CEO and was replaced internally with a senior manager with 27 years of experience and two years with the company. Additionally, the managing director of special servicing, including consents, departed the company and responsibilities were assumed by two middle managers who average 22 years of experience and eight years with CWCAM.

Overall turnover during the past 12 months was high at 43%, up from 19% and 28% at Fitch’s prior two reviews. Of the 26 separations during 2018, 10 were involuntary departures, which mainly occurred in the administrative groups including operations and compliance, internal audit, reporting and accounting. Fitch noted as a concern the concentration among administrative staff presents a degree of operational risk; CWCAM management stated that the departures were mainly due to proactive management of staff and is expected to be isolated with no further reductions in staff planned. Historically, turnover has been primarily driven by voluntary departures and represented 64% of all departures at Fitch’s last review.

CWCAM’s special servicing asset managers are structured into two teams reporting to two middle managers and typically manage the workout process from cradle to grave. While there isn’t a separate REO team, CWCAM maintains several property specialists focusing on multifamily, hospitality, office and industrial properties. The property specialists work closely with loan asset managers in developing collateral values, choosing receivers and monitoring property operations and REO properties in these asset classes typically funnel to these employees. CWCAM previously folded its separate consents and assumptions team into the asset management teams due to the declining level of actively specially serviced assets and consent requests.

Asset managers are generally supported by an analyst, administrative assistant and/or portfolio administrator. Other support provided to the asset managers comes from the valuations team as well as REDS. The valuations team, reporting to the president, is responsible for providing support in the modeling and development of values for loans and REO assets with a UPB greater than \$20 million, as well as fair market-value determinations, where required, irrespective of the loan’s UPB. The valuations team is also responsible for CWCAM’s underwriting assignments for third parties. REDS, formed in 2012 within CWCAM and subsequently separated into an affiliate company, provides support for and co-brokerage duties for loan and REO asset sales.

SS Loan and Employee Counts



Note: SS – Special Servicing. REO – Real estate owned.
Source: CWCAM.

Note:

With the decline in both asset managers and assets the ratio of assets to asset managers remained consistent at to 10:1 compared to 8:1 at Fitch’s prior review. While asset manager turnover remains high at 31% compared to 40% at Fitch’s last review, the company still employs a highly experienced group of asset managers who average 21 years of experience.

Employee Statistics

| | 2019 | | | | 2018 | | | |
|--------------------------|------------------|--------------------------------|-------------------|------------|------------------|--------------------------------|-------------------|------------|
| | No. of Employees | Avg. Years Industry Experience | Avg. Years Tenure | % Turnover | No. of Employees | Avg. Years Industry Experience | Avg. Years Tenure | % Turnover |
| Special Servicing | | | | | | | | |
| Senior Management | 8 | 32 | 11 | 33 | 10 | 31 | 12 | 9 |
| Middle Management | 15 | 24 | 11 | 29 | 20 | 23 | 11 | 15 |
| Servicing Staff | 27 | 10 | 7 | 53 | 40 | 12 | 8 | 23 |
| Total | 50 | — | — | 43 | 70 | — | — | 19 |

Source: CWCAM.

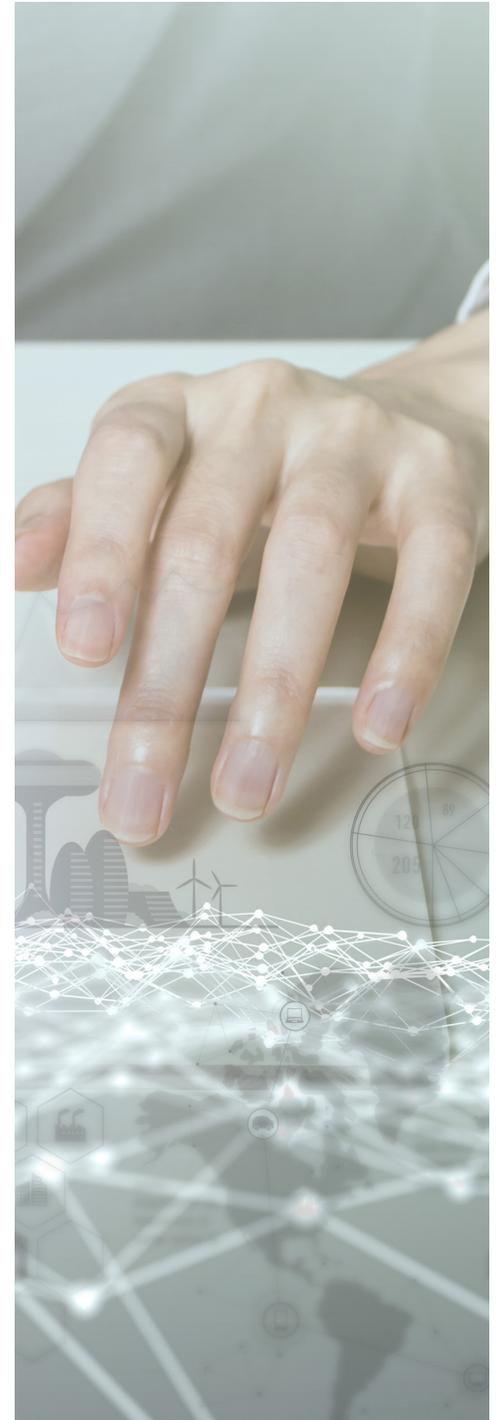
Employees *(Cont'd)*

Training

CWCAM has a training committee composed of representatives from the various departments within the company. The purpose of the committee is to organize, plan and continuously enhance training programs for the company, ensuring that targeted topics are covered and minimum training hours are met. CWCAM's training program is conducted by a mix of in-house and outside professionals and topics chosen are determined by the committee members by polling employees.

The company's CWUniversity program focuses on a continuing goal of conducting companywide training sessions on policies and procedures. These training sessions included CMBS 2.0 PSA guidelines, cash management policies, nonrecoverable determinations, property budgets, data protection and underwriting. Other sessions included senior management and asset managers leading an onsite property inspection seminar.

CWCAM special servicing personnel averaged 41 hours of training in 2018, slightly below 48 hours at the prior review and consistent with other highly rated Fitch special servicers.



Operational Infrastructure

Outsourcing

Fitch considers outsourcing to include core servicing functions performed outside of the rated servicer. CWCAM generally does not outsource core special servicing functions until an asset has been foreclosed, in which case REO asset disposition, as well as note sale functions, are performed by REDS, an affiliated company. Functions performed by REDS in its role as co-broker include:

- negotiating the listing agreement and listing the asset for sale;
- collecting due diligence materials;
- managing the marketing process;
- obtaining purchase bids;
- reviewing competing bids and presenting results to the CWCAM asset manager;
- coordinating and managing negotiation and execution of a purchase and sale agreement under the direction of CWCAM;
- managing the due diligence phase; and
- coordinating and overseeing the closing process with CWCAM and legal counsel.

Vendor Management

Most vendors are managed by each of the business areas (i.e. legal department manages attorney engagements, operations group manages third-party report providers and CWCAM asset managers manage REDS, which manages co-broker engagements). Ordering of third-party reports is centralized in the operations group, with vendors selected from an approved list and use of any vendor not included on the list requiring the approval of the appropriate managing director. Property managers are discussed, reviewed and selected by the asset manager from CWCAM's approved vendor list, as well. Asset managers monitor property manager performance and any property manager failing to meet obligations is removed from the approved vendor list. CWCAM also performs random audits of property managers for each property type each year.

The company also uses third parties for financial statement entry and classification and for real estate tax services. Both have contracts that auto-renew annually. Additional vendors employed by CWCAM include: third-party reports, co-broker/property manager and legal counsel.

Note:

Fitch notes that functions performed by REDS are usually managed by the special servicer itself and not outsourced. CWCAM stated that because REDS is affiliated with the company it has access to CAMS, which enhances the process flow and timing.

Information Technology

CWCAM is currently running on two asset management systems as the company works to migrate legacy CMBS data into ReallINSIGHT after the company's legacy portfolio winds down. Currently, all special servicing workouts are performed in CAMS as well as the surveillance of legacy CMBS transactions. CAMS remains the system of record for required external reporting on specially serviced assets. ReallINSIGHT contains internal data for new issue CMBS transactions as well as Freddie Mac K-series transactions as well as data from the proprietary CMBS data-warehouse. Surveillance of CMBS 2.0 and Freddie Mac K-series transactions and the underwriting of CMBS B-pieces are done in ReallINSIGHT. Once legacy loans are resolved, CWCAM will use ReallINSIGHT exclusively.

CAMS is used for special servicing and asset management functions and is capable of tracking assets from loan origination through disposition. CAMS was developed by a vendor that was acquired by CWFS and now operates as the subsidiary, ReallINSIGHT. Over the past few years, the company has developed a cloud-based version of CAMS, which is also named ReallINSIGHT and is marketed to and used by third-party clients.

CWCAM has customized CAMS to meet its specific needs, including servicing requirements as detailed in its pooling and servicing agreements (PSAs), as well as its internal policies and procedures. CAMS includes the ability to track abstracted PSA requirements, spread financial statements, generate OSARs, track appraisals and generate, import and export the applicable CREFC investor reporting package reports. CAMS also provides a platform for asset managers to perform pro forma analyses of various disposition strategies and then to create and generate business plans. CAMS is integrated with Argus, a third-party CMBS data provider, and Excel for data import as well as with Excel, Word and Adobe Acrobat for data export and reports.

CAMS contains a variety of preset reports based on specific data sets within the system. There is also an overview area within CAMS, which displays stratified information based on preset data fields, which can also be filtered, printed or exported for a review of key statistics. In addition, CWCAM has an ad hoc report writer to create reports not immediately available within CAMS.

CWCAM developed and maintains a proprietary data-warehouse integrated with CMBS transaction data from a third-party data provider. Data feeds from the data warehouse into CAMS and is used to automatically populate the CREFC watchlist, bond file, property file and financial file.

Systems support is provided by four CWFS IT employees that are responsible for infrastructure and software development, and helpdesk support was recently moved in house as well.

Note:

Fitch recognizes CWCAM's technology platform as a core operational strength and views its dedication to developing and enhancing its special servicing technology favorably. Planned improvements to CAMs are focused on updating the system to SQL Server 2019 and automating CREFC reporting, as well as continuing to migrate from CAMS to the newest release of ReallINSIGHT. ReallINSIGHT updates included a predictive watchlist module based on clients' criteria and planned enhancements include new screens in the underwriting module focused on the entire pool as well as automatically populating data in the system's consent module.

Information Technology *(Cont'd)*

Disaster Recovery/Business Continuity Plan

During 2018, CWCAM completed its migration to a cloud-based platform for its technology infrastructure, improving application speeds and reducing operational costs. The new platform has data replication abilities limiting potential data loss. CWCAM's disaster recovery and business continuity practices rely on remote access with the cloud-based platform; however, the company maintains a contract with Agility Recovery for a facility that can sit up to 10 people. Agility has over 40 locations in the D.C. metro area and, upon declaration, CWCAM will be provided an address for a relocation site. Sites vary in distance and some are as close to the company's headquarters as across the street.

CWCAM's first response is for employees with electrical power and internet access to work remotely via a virtual desktop that enables full systems access. The second response is to use the new Agility Recovery location for a select group of employees, and the third option is to send employees to other offices in New York and Dallas.

CWCAM uses various geographical regions available within the cloud-based third-party platform and primary data backups are performed on a standard schedule. These backups are performed in the production region and are then also replicated to the disaster recovery region for additional protection. Critical systems may also have more frequent snapshot backups taken throughout the workday and employ replication technologies limiting expected actual data loss to be near zero.

The recovery time for special servicing is generally between four hours and two days, dependent on the function's criticality. CAMS is considered a critical system and is expected to be recovered within four hours. The most recent test occurred at the Bethesda home office in December 2018, while the Dallas office conducted exercises in November 2017. The tests were all considered successful.



Internal Control Environment

CWCAM's internal control framework is predicated on controls built into the special servicing technology and management reviews of special servicing functions. Supplementing these, CWCAM maintains a dedicated operations and compliance group consisting of two employees who are responsible for generating weekly exception reports, performing new loan transfers on CAMS, coordinating inspection reports and following up on actions to ensure completeness of documentation and timing for items such as modifications and foreclosures.

CWCAM also maintains a compliance committee, which reviews weekly exception reports generated from CAMS by the operations and compliance group, which are asset-level focused and are focused on deadlines established under PSAs and/or the company's policies and procedures.

CWCAM's internal audit function previously consisted of two employees reporting up to the CFO and was recently outsourced to a third party following a RegAB finding. The third party is engaged to perform internal audits on a quarterly basis for Reg AB and annually for the CAMS system's compliance. Another third-party audit firm is engaged to perform quarterly property management audits and related cash management reviews for REO properties.

Policies and Procedures

CWCAM maintains a thorough and complete policies and procedures manual that is available to all employees online via a shared network directory as well as on the company's intranet site. The policy and procedures manual is reviewed and updated throughout the year as needed to reflect changing business practices, regulatory demands or general business practice refinements. New policies are reviewed and approved by CWCAM's compliance committee. CWCAM documents specific processes in a workflow chart that details step-by-step instructions and includes names of personnel assigned to each task and the owner of each process, typically a senior-level employee that is responsible for compliance with policies and procedures. Currently, 13 workflow charts covering various functions were created, with the goal of creating workflow charts for each critical special servicing function.

Recent updates to policies and procedures involved consent processing as the group was reorganized as a result of lower special servicing volumes. In addition, the policies and procedures were updated to reflect new roles and responsibilities stemming from personnel changes. Policies and procedures were also updated to ensure bank reconciliations are reviewed by the CFO to address a recent external audit finding.

Compliance and Controls

CWCAM relies heavily on its CAMS asset management application to automate, as much as possible, asset management functions around its policies and procedures. Work is performed within CAMS where possible, which allows the company to measure compliance and expected timeframes for completing tasks. The asset managers are presented with system-generated daily ticklers, which are set up based on timeframes stated in PSAs or dictated in the policy and procedure manual.

In addition to the operations and compliance group, CWCAM also maintains an internal risk assessment function responsible for identifying risks in the business and reviewing internal processes to ensure they address perceived risks. The function reviews and abstracts all servicing agreements, highlighting the company's required duties and obligations as special servicer and capturing key reporting dates. The PSA abstracts are incorporated into CAMS by CWCAM's conversion team and are then reviewed by various groups, including accounting, insurance and asset management, to ensure that key requirements are correctly reflected. The senior manager dedicated to internal risk assessment departed the company and was replaced internally.

The managing director in the legal group assumed oversight of the operations and compliance group of two with the departure of the senior vice president who was responsible for day-to-day management of the group. The managing director of legal has over 28 years of experience and

17 years with CWCAM and serves as the chair of the compliance committee. The compliance

Note:

Fitch notes that CWCAM's compliance committee membership functions independently of special servicing; previously, servicing line managers formed the core of the compliance committee. Despite elevated turnover, the compliance committee remains operational and continues to meet regularly. Fitch was provided copies of minutes of recent meetings, which included topics discussed and management reports generated from CWCAMs to track key timelines dictated by servicing agreements.

Internal Control Environment *(Cont'd)*

committee meets bi-weekly, with additional meetings as warranted, and includes: the managing director - legal, CFO, managing director of internal risk assessment and relationship management, two senior vice presidents of special servicing, senior vice president of reporting and the managing director of corporate operations.

Workout timelines and determination of disposition methods are developed by the asset manager and presented to senior management informally via discussion in monthly asset review meetings and formally via business plans presented at credit committee meetings. Management-level reviews of all assets are made no less than quarterly during meetings in which workout strategies, status and compliance issues are discussed.

Internal Audit

Previously, internal audit was conducted by a senior manager supported by a staff member. Following the recent Reg AB finding and departures of the internal audit staff, CWCAM engaged a third party to perform quarterly Reg AB audits as well as annual audits for the CAMS system's compliance. Given that automated controls in CAMS, such as triggers, serve as the basis for internal controls, CWCAM performs an annual CAMS audit, which verifies that triggers were properly set up and functioning in the system. Additionally, CWCAM outsourced quarterly property management audits and related cash management reviews for REO properties to a separate audit firm. Fitch reviewed the engagement letters for each outsourced function and was informed that quarterly testing for Reg AB compliance will begin retroactively with first-quarter 2019.

Fitch reviewed three internal Reg AB audits from 2018, which contained no findings; however, CWCAM had a Reg AB finding relating to late bank reconciliations. CWCAM management stated that the disconnect was due to the internal review of when initial bank reconciliations were completed instead of monitoring when reconciliations were reviewed and signed by managers.

Fitch also reviewed an internal audit on CAMS, which tested a sample of active and resolved loans to: ensure PSAs were accurately reflected in CAMS's compliance module; verify new transfers into special servicing triggered appropriate PSA reporting requirements in CAMS and that the requirements were met; verify that REO loans triggered accurate ticklers regarding excess cash procedures; verify that active REO and REO dispositions were consistent with the workout strategy and that loan comments were updated monthly; and verify that the approval of consents for performing loans were documented in CAMS. The audit did not contain any material findings.

External Audits

CWCAM is subject to annual Reg AB and USAP audits on its special servicing portfolio. Fitch reviewed the Reg AB letter issued by Cohn Reznick on Feb. 28, 2019, which noted an instance of material noncompliance with the applicable servicing criteria. Fitch also reviewed the USAP letter issued by Matthews, Carter & Boyce on March 7, 2018, which noted no findings.

Note:

CWCAM recently outsourced internal audit functions given internal audit staff turnover as well as a Reg AB finding. Fitch is concerned by the recent external audit finding, which indicates that the third line of defense didn't demonstrate a high level of proficiency, and more proactive compliance testing based on this Reg AB criteria may have prevented this finding.

Note:

Partially mitigating Fitch's concern are the resources CWCAM will employ through the third-party audit firm. The partner responsible for the design and development of CWCAM's quarterly Reg AB audits has over 40 years of audit experience and will be supported by senior managers, managers, senior associates and staff associates. Previously CWCAM had two employees responsible for internal audit. Fitch will continue to monitor CWCAM's new risk management framework for stability and operational proficiency and expects to receive new quarterly internal audits and subsequent external audits.

Defaulted Loan Management — Special Servicing

Special Servicing Portfolio

As of Dec. 31, 2018, CWCAM was the named special servicer on 5,101 loans in 145 CMBS transactions, with a UPB of \$91.2 billion. As of the same date, the company was actively working out 39 CMBS loans totaling \$899.3 million and 69 REO assets totaling \$1.6 billion. Additionally, the company is named special servicer on 1,947 non-CMBS loans with a UPB of \$922.1 million and is actively servicing 114 non-CMBS loans with a UPB of \$89 million and seven REOs with a UPB of \$8 million.

Offsetting the decline in the portfolio from resolutions and maturities, the company was appointed as a third-party special servicer on 38 new issue CMBS deals in 2018 compared with 19 appointments during 2017; 24 of the 38 new transactions were Freddie Mac K-series deals. Non-CMBS assets primarily include assets owned by CDOs managed by CWCI, nonsecuritized Fannie Mae assets and assets owned by Fortress affiliates.

Note:

As of Dec. 31, 2018, CWCAM's named CMBS special servicing portfolio consisted of:

- 38 new transactions added since Dec. 31, 2017; 24 of which are Freddie Mac K-series transactions.
- 42% Freddie Mac K-series transactions; an increase from 12% in 2015.
- 33% legacy CMBS transactions (defined as pre-2009); down from 71% in 2015.
- 58% 2014–2018 vintage transactions.

Special Servicing Portfolio Overview

| | 2018 | % Change | 2017 | % Change | 2016 |
|--|----------|-------------|----------|-------------|----------|
| CMBS | | | | | |
| No. of Transactions — Special Servicer | 145 | 9 | 133 | (3) | 137 |
| UPB — Special Servicer (\$ Mil.) | 91,196.3 | 23 | 74,153.5 | (7) | 79,557.9 |
| No. of Loans — Named Special Servicer | 5,101 | 5 | 4,876 | (15) | 5,753 |
| UPB — Actively Special Servicer (Non-REO) (\$ Mil.) | 899.3 | (50) | 1,795.8 | (49) | 3,529.0 |
| No. of Loans — Actively Special Servicer (Non-REO) | 39 | (58) | 92 | (45) | 167 |
| UPB — REO Assets (\$ Mil.) | 1,605.9 | 16 | 1,380.9 | (32) | 2,021.3 |
| No. of REO Assets | 69 | (15) | 81 | (33) | 121 |
| Non-CMBS | | | | | |
| UPB — Named Special Servicer (\$ Mil.) | 778.1 | (4) | 814.6 | (47) | 1,530.1 |
| No. of Loans — Named Special Servicer | 132 | (32) | 193 | (55) | 433 |
| UPB — Actively Special Servicing (Non-REO) (\$ Mil.) | 90.9 | 3 | 88.2 | (33) | 131.2 |
| No. of Loans — Actively Special Servicing (Non-REO) | 5 | (50) | 10 | (38) | 16 |
| UPB — REO Assets (\$ Mil.) | 5.4 | (52) | 11.2 | (20) | 13.9 |
| No. of REO Assets | 4 | 33 | 3 | (25) | 4 |

REO — Real estate owned. UPB — Unpaid premium balance. Note: Years ended Dec. 31.
Source: CWCAM.

Defaulted Loan Management — Special Servicing *(Cont'd)*

Loan Administration

CWCAM's surveillance group is responsible for identifying and monitoring sub- and nonperforming loans before they are transferred to special servicing. CWCAM's surveillance group works with master servicers throughout the month as needed but most formally through monthly calls to review watchlist and other assets and to determine, which assets have or may transfer to special servicing.

CWCAM maintains and analyzes watchlists to identify probable and possible loan transfers to special servicing. Key criteria in determining watchlist loans include: the borrower's financial condition, property condition issues and lease rollover or tenant issues. Surveillance uses a loan rating system classifying watchlist loans as possessing low, medium, high, possible transfer (high risk with possible transfer within 90 days to six months) or probable transfer (high risk with probable transfer in less than 90 days) risk. Surveillance staff obtains data and information from a variety of sources, including trustee reports, master servicer data files and conference calls and online research databases. Data are used to risk rate loans and request the early transfer of loans, as allowed by the transaction documents, that they feel would benefit from immediate special servicer intervention.

Master servicers provide CWCAM notification of borrower requests and consent matters via a centralized e-mail inbox. An analyst enters the request into CAMS and is responsible for updating CAMS as the request moves through the review process from the analyst reviewing the request through approval in accordance with CWCAM's delegations of authority, which authorizes team leaders to approve certain actions up to a certain loan threshold/dollar limit. The delegations of authority cover actions such as: leases, nonstandard requests (partial releases, addition of collateral, etc.), assumptions and expenditures. Management reviews the consents-in-process list to ensure requests are being processed timely.

Defaulted/Nonperforming Loan Management

The surveillance department transitions loans to special servicing through a debriefing process with the assigned asset manager. Once a loan transfers to special servicing, the asset manager conducts a preliminary assessment of the asset, which includes reviewing the applicable PSA and loan files, assessing, if any, representations or warranties were breached and making certain that all loan documents and assignments are present.

An asset status report (ASR) is generally prepared and distributed within the first 30 days of the asset's transfer to special servicing. Once completed, the ASR is reviewed and approved by the managing director of the legal department. Once approved, a compliance analyst is notified, who then delivers the ASR to appropriate PSA parties. Following the preparation of the ASR, the asset manager is responsible for preparing a business plan for each loan asset that is transferred to special servicing, generally within 90 days of the asset's transfer to special servicing.

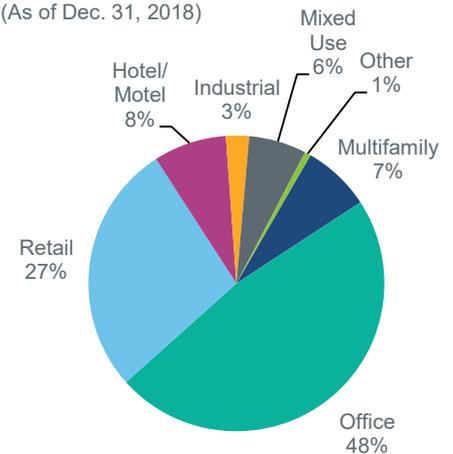
Once the loan transfers to special servicing, the asset manager performs Internet searches on the borrower and reviews internally available resources, especially where the company has had prior experience with the borrower/sponsor. In addition, CWCAM requests up-to-date property financials and budgets and interviews the property manager and/or property management company to accurately determine the sources and uses of property cash flow.

Site inspections are performed within 45 days of an asset's transfer to special servicing and at least annually thereafter. Asset managers inspect all assets prior to taking title via foreclosure or deed-in-lieu proceeding; however, in the event the asset manager cannot travel to the site within the first 45 days, a contracted inspection may be obtained. In all cases prior to taking title, CWCAM will obtain a phase I environmental report, a property condition report and additional studies as required by the PSA.

CWCAM maintains a valuations team that provides support in the modeling and development for all property values for loans and REO with an UPB greater than \$20 million and others at management's discretion. The team is also responsible for fair market value determinations, irrespective of the loan's UPB. The valuation analyst is required to complete assumption gathering, modeling and data entry for

Active CMBS Special Servicing Property Type

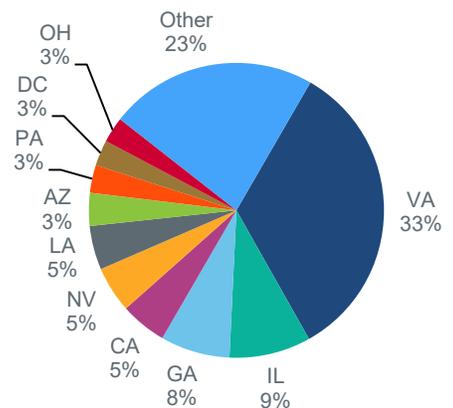
(As of Dec. 31, 2018)



Source: CWC Capital Asset Management LLC.

Top 10 Active CMBS Special Servicing States

(As of Dec. 31, 2018)



Source: CWC Capital Asset Management LLC.

Note:

Fitch finds CWCAM to be proactive in its surveillance of performing loans before potentially problematic loans transfer to special servicing.

Defaulted Loan Management — Special Servicing (Cont'd)

all special servicing valuations for loans with a UPB over \$20 million and prepare a valuation plan, which supplements the workout business plan, as well as obtain approvals from the valuations committee for all fair market values as defined by the PSA.

The asset manager, in conjunction with a member of the valuation team for assets over \$20 million, reviews the most recent appraisal in detail, talks with local market contacts and brokers and reviews internal sales data of CWCAM REO and note sales. In addition, CWCAM uses online research tools such as REIS and CoStar.

Loan workout timelines, evaluation of potential resolution methods and determination of the final strategy are developed by the asset manager and discussed with senior management informally via monthly asset review meetings and formally via presentation of a business plan as required by the company's delegation of authority matrix, up to a credit committee and the appropriate CCR. The asset manager determines appropriate actions to take to gain control of the collateral's cash flow, including the appointment of a receiver, a hard lockbox or forbearance agreement that requires a monthly reconciliation of all income and expenses.

Alternative scenarios are explored by the asset manager to determine resolution strategies that maximize the trust's recovery on a net present value (NPV) basis. Business plans are updated at least annually or when a material change occurs to the asset. Approval of the business plan is per the company's delegations of authority matrix and, ultimately, a credit committee composed of senior management, including compliance.

REO Management

An REO asset manager, if separately assigned, generally becomes involved at least 30 days prior to the planned foreclosure sale and may inspect the property 30 days in advance of the expected transfer but no later than 30 days following title transfer. Outside of the property specialists, assets are assigned based on an asset manager's experience with the particular property type, knowledge of the local market and current workload.

Upon transfer of a loan to an REO asset manager, the loan asset manager completes an REO transition checklist, which ensures that the asset file contains all of the information that is needed to transition the asset to REO and to manage the property. Asset managers are responsible for ensuring that property managers perform duties in a timely manner and within the established REO budget and also ensure that property managers and leasing agents are actively addressing tenant needs. For commercial properties, the leasing agent and/or property manager are expected to meet with each tenant immediately upon take over.

Asset managers present a business plan within the first 90 days of taking title to a property detailing property- and trust-level operating budgets. The asset plans outline operating, repositioning and liquidation strategies and associated timeframes. CWCAM states that business plans are expected to produce the highest NPV recovery for the trust and include an analysis of costs, holding periods and the difference between the "as is" and "stabilized" value for each asset. The selected strategy in each business plan is based on an analysis of the property, its surrounding location and existing market conditions and may include interviews with brokers, property managers and investors.

Once approved by senior management, business plans provide asset managers with the budget authority required to implement the plan and expenses are checked against the budget in place during asset reviews, which are conducted monthly; asset reviews are set up so that every asset in special servicing is reviewed by senior management no less than once a quarter. REO business plans are formally presented to CWCAM's credit committee at least annually.

After CWCAM has made the decision to sell an asset, the loan sale actions and REO sale process is transferred to REDS automatically through CAMS. REDS then recommends a third-party broker to market the asset and develop a proposed marketing timeline. REDS performs co-brokerage functions, including screening and qualifying potential purchasers, reviewing projected sale values, negotiating broker retention agreements and purchase contracts and responding to purchaser due diligence inquiries, among other duties, at the direction of CWCAM.

Note:

CWCAM's credit committee consists of: the president of CWCAM (for assets with a UPB of \$100 million or greater), the managing director of the legal department (who also reviews plans for compliance issues), and the two middle managers who lead special servicing.

Governance and Conflicts of Interest

Managing Potential Conflicts

Potential conflicts of interest in special servicing arise through various forms, particularly as investors retaining controlling positions in securitizations or specific loans influence workout strategies and the ability to select the special servicer.

CWCAM is a wholly owned subsidiary of CWFS, which is owned by funds managed by affiliates of Fortress. The CWFS family of companies includes CWCI, a real estate debt and investment management company focused on real estate debt products including CMBS, CDOs, mezzanine debt, B-notes and structured loans. It is a registered investment advisor that acts as collateral manager and/or disposition consultant on numerous CDO transactions.

CWCI is generally not invested in bonds in the CDO trusts or CMBS bond positions held within the CDOs but provides investment management services where it may act as the CCR on many of its deals. Owners of the CDO are not part of CWCAM's credit committee for specially serviced loans or REO. Senior managers at CWCAM are generally aware of bond holdings in the normal course of business for identification and communication with CCRs and other bondholders as required by PSAs. Therefore, while the company has a code of conduct, the potential remains for a conflict of interest to arise, similar to other similar servicers.

As part of its regular compliance process, CWCAM calculates and distributes fair-value determinations in accordance with each PSA, which require a third-party review of the value should an affiliate elect to purchase an asset or in other cases where required by the PSA. An affiliate of CWCAM has exercised two separate fair-value purchase options during 2018. The reviews for purchases made were performed by a consultant retained by the trustee. CWCAM expects that affiliates will continue to review the fair value purchase options and will exercise from time to time.

CWCAM maintains an ethical conduct section within its policies and procedures manual that states that the company adopted the practice of servicing all of its assets in a manner consistent with the industry-defined servicing standard and as contained in each PSA governing its actions. As such, the manual states the company will administer all loans in the same manner without regard to any relationship with an affiliate, ownership of the certificate or the right of the servicer to receive compensation. The manual also states that CWCAM or its affiliates shall evaluate all methods of recovery on the mortgage loans or REO assets and shall take such actions that will be reasonably likely to produce the maximum recovery as a whole to all of the certificateholders on a present-value basis.

Affiliated Companies

CWFS, the parent company of CWCAM, is wholly owned by funds managed by affiliates of Fortress, who on occasion provides servicing assignments to the company. CWFS owns CWCI and certain CRE-related companies including ConvergentRisk, CWFS Insight LLC (DBA RealINSIGHT), CWCM and REDS.

CWCI is a real estate debt and investment management company that provides servicing assignments to CWCAM. ConvergentRisk provides risk management and related insurance services to the company and third-party clients. CWFS Insight is the technology company that built CAMS and markets a version of the application to third parties. CWCM facilitates the flow of capital between borrowers and lenders. REDS leads, coordinates and manages all CWCAM loans, subject to PSA-dictated fair value purchase procedures and REO disposition actions as co-broker. ConvergentRisk provides clients with risk management and related insurance services in the CRE sector. ConvergentRisk does not operate as a broker for CWCAM, nor does it place insurance for CWCAM. CWCAM does not currently retain or pay for the services of ConvergentRisk, nor does it have trusts to retain or to pay for its services.

REDS does not charge additional fees to CMBS trusts, receiving a percentage of the brokerage fee or the premium paid by the buyer to the auction platform for each asset auctioned on behalf of CWCAM. To the extent REDS co-brokers a sale with a listing broker, it receives a percentage of the brokerage fee commensurate with the division of duties. To the extent an auction platform is used for an asset sale, in conjunction with a CWCAM-retained listing broker, both REDS and the applicable CMBS trust typically share the platform fee paid by the buyer.

Note:

Fitch reviewed a sample of 12 business plans for loans and REO in special servicing, noting that the business plans contained asset and market overviews presented in clear and concise layouts, as well as containing the asset manager's rationale and estimation of loss/recovery substantiated by an NPV analysis. The business plans also contained NPV analyses comparing at least two scenarios, including, for REO, at least: "hold and sell" and "sell REO."

Note:

Historically, fees charged by REDS have been at market terms compared with other servicers. The average total listing commission paid to REDS and/or its co-broker for assets liquidated in 2018 was 2.6%.

ALL FITCH CREDIT RATINGS ARE SUBJECT TO CERTAIN LIMITATIONS AND DISCLAIMERS. PLEASE READ THESE LIMITATIONS AND DISCLAIMERS BY FOLLOWING THIS LINK: [HTTPS://WWW.FITCHRATINGS.COM/SITE/DEFINITIONS](https://www.fitchratings.com/site/definitions). IN ADDITION, RATING DEFINITIONS AND THE TERMS OF USE OF SUCH RATINGS ARE AVAILABLE ON THE AGENCY'S PUBLIC WEB SITE AT WWW.FITCHRATINGS.COM. PUBLISHED RATINGS, CRITERIA, AND METHODOLOGIES ARE AVAILABLE FROM THIS SITE AT ALL TIMES. FITCH'S CODE OF CONDUCT, CONFIDENTIALITY, CONFLICTS OF INTEREST, AFFILIATE FIREWALL, COMPLIANCE, AND OTHER RELEVANT POLICIES AND PROCEDURES ARE ALSO AVAILABLE FROM THE CODE OF CONDUCT SECTION OF THIS SITE. FITCH MAY HAVE PROVIDED ANOTHER PERMISSIBLE SERVICE TO THE RATED ENTITY OR ITS RELATED THIRD PARTIES. DETAILS OF THIS SERVICE FOR RATINGS FOR WHICH THE LEAD ANALYST IS BASED IN AN EU-REGISTERED ENTITY CAN BE FOUND ON THE ENTITY SUMMARY PAGE FOR THIS ISSUER ON THE FITCH WEBSITE. Copyright © 2019 by Fitch Ratings, Inc., Fitch Ratings Ltd. and its subsidiaries. 33 Whitehall Street, NY, NY 10004. Telephone: 1-800-753-4824, (212) 908-0500. Fax: (212) 480-4435. Reproduction or retransmission in whole or in part is prohibited except by permission. All rights reserved. In issuing and maintaining its ratings and in making other reports (including forecast information), Fitch relies on factual information it receives from issuers and underwriters and from other sources Fitch believes to be credible. Fitch conducts a reasonable investigation of the factual information relied upon by it in accordance with its ratings methodology, and obtains reasonable verification of that information from independent sources, to the extent such sources are available for a given security or in a given jurisdiction. The manner of Fitch's factual investigation and the scope of the third-party verification it obtains will vary depending on the nature of the rated security and its issuer, the requirements and practices in the jurisdiction in which the rated security is offered and sold and/or the issuer is located, the availability and nature of relevant public information, access to the management of the issuer and its advisers, the availability of pre-existing third-party verifications such as audit reports, agreed-upon procedures letters, appraisals, actuarial reports, engineering reports, legal opinions and other reports provided by third parties, the availability of independent and competent third-party verification sources with respect to the particular security or in the particular jurisdiction of the issuer, and a variety of other factors. Users of Fitch's ratings and reports should understand that neither an enhanced factual investigation nor any third-party verification can ensure that all of the information Fitch relies on in connection with a rating or a report will be accurate and complete. Ultimately, the issuer and its advisers are responsible for the accuracy of the information they provide to Fitch and to the market in offering documents and other reports. In issuing its ratings and its reports, Fitch must rely on the work of experts, including independent auditors with respect to financial statements and attorneys with respect to legal and tax matters. Further, ratings and forecasts of financial and other information are inherently forward-looking and embody assumptions and predictions about future events that by their nature cannot be verified as facts. As a result, despite any verification of current facts, ratings and forecasts can be affected by future events or conditions that were not anticipated at the time a rating or forecast was issued or affirmed.

The information in this report is provided "as is" without any representation or warranty of any kind, and Fitch does not represent or warrant that the report or any of its contents will meet any of the requirements of a recipient of the report. A Fitch rating is an opinion as to the creditworthiness of a security. This opinion and reports made by Fitch are based on established criteria and methodologies that Fitch is continuously evaluating and updating. Therefore, ratings and reports are the collective work product of Fitch and no individual, or group of individuals, is solely responsible for a rating or a report. The rating does not address the risk of loss due to risks other than credit risk, unless such risk is specifically mentioned. Fitch is not engaged in the offer or sale of any security. All Fitch reports have shared authorship. Individuals identified in a Fitch report were involved in, but are not solely responsible for, the opinions stated therein. The individuals are named for contact purposes only. A report providing a Fitch rating is neither a prospectus nor a substitute for the information assembled, verified and presented to investors by the issuer and its agents in connection with the sale of the securities. Ratings may be changed or withdrawn at any time for any reason in the sole discretion of Fitch. Fitch does not provide investment advice of any sort. Ratings are not a recommendation to buy, sell, or hold any security. Ratings do not comment on the adequacy of market price, the suitability of any security for a particular investor, or the tax-exempt nature or taxability of payments made in respect to any security. Fitch receives fees from issuers, insurers, guarantors, other obligors, and underwriters for rating securities. Such fees generally vary from US\$1,000 to US\$750,000 (or the applicable currency equivalent) per issue. In certain cases, Fitch will rate all or a number of issues issued by a particular issuer, or insured or guaranteed by a particular insurer or guarantor, for a single annual fee. Such fees are expected to vary from US\$10,000 to US\$1,500,000 (or the applicable currency equivalent). The assignment, publication, or dissemination of a rating by Fitch shall not constitute a consent by Fitch to use its name as an expert in connection with any registration statement filed under the United States securities laws, the Financial Services and Markets Act of 2000 of the United Kingdom, or the securities laws of any particular jurisdiction. Due to the relative efficiency of electronic publishing and distribution, Fitch research may be available to electronic subscribers up to three days earlier than to print subscribers.

For Australia, New Zealand, Taiwan and South Korea only: Fitch Australia Pty Ltd holds an Australian financial services license (AFS license no. 337123) which authorizes it to provide credit ratings to wholesale clients only. Credit ratings information published by Fitch is not intended to be used by persons who are retail clients within the meaning of the Corporations Act 2001.