



Servicer Evaluation: CWCapital Asset Management LLC

Servicer Analyst:

Steven Altman, New York (1) 212-438-5042; steven.altman@spglobal.com

Secondary Contacts:

Paul L Kirby, New York (1) 212-438-1365; paul.kirby@spglobal.com

Benjamin Griffis, Centennial (1) 303-721-4672; benjamin.griffis@spglobal.com

Analytical Manager, Servicer Evaluations:

Robert J Radziul, New York (1) 212-438-1051; robert.radziul@spglobal.com

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Ranking Overview

| Servicing category | Overall ranking | Subrankings | | |
|---------------------------|-----------------|-----------------------------|---------------------|---------|
| | | Management and organization | Loan administration | Outlook |
| Commercial special | STRONG | STRONG | STRONG | Stable |
| Financial position | | | | |
| SUFFICIENT | | | | |

Rationale

S&P Global Ratings' overall ranking on CWC Capital Asset Management LLC (CWCAM) is STRONG as a commercial mortgage loan special servicer. On Oct. 15, 2019, we affirmed the ranking (please see "CWC Capital Asset Management LLC STRONG Commercial Mortgage Loan Special Servicer Ranking Affirmed; Outlook Is Stable," published Oct. 15, 2019). The outlook is stable.

Our ranking reflects CWCAM's:

- Highly experienced and reasonably well-tenured senior management and asset management staff, despite significant attrition since our prior review;
- Good leverage of a proprietary special servicing technology system;
- Substantial audit, compliance, and control framework, which nonetheless failed to discover a material exception during 2018 under Regulation AB (Reg AB);
- Demonstrated ability to successfully resolve defaulted loans and manage real estate owned (REO) assets of all levels of complexity;
- Shrinking, yet still sizable, active portfolio volume, accompanied by a substantial portfolio of named special servicing appointments.

Since our prior review (see "Servicer Evaluation: CWC Capital Asset Management LLC," published July 24, 2018), the following changes and/or developments have occurred:

- CWCAM's active special servicing portfolio declined 34% to total approximately \$2.2 billion as of June 30, 2019, from \$3.3 billion as of Dec. 31, 2017, as resolution volumes outpaced new transfers.
- CWCAM's named CMBS special servicer portfolio (including Freddie Mac K-Series transactions) increased 43% to \$106.2 billion as of June 30, 2019, from \$74.2 billion as of Dec. 31, 2017.
- CWCAM's total staffing declined 30%, largely due to attrition. There were several key departures, including a managing director (MD) of special servicing, an MD of valuations/underwriting, two senior vice presidents (SVP) responsible for industry relationships, an SVP of special servicing, and an SVP of compliance/operations.
- The 2018 Reg AB audit report contained a material instance of noncompliance related to timely completion of bank

reconciliations. Management established remediation procedures as a result of the lapse.

- In early 2019, CW Financial Services LLC (CW), CWCAM's parent company, restructured its internal audit function, outsourcing the work to two external accounting firms--one will perform property management audits and the other will be responsible for all other internal audits. The change was made to improve the quality of the internal audit function, as there were lapses in discovering exceptions that should have been detected and reported.
- CWCAM continued to build out and develop its technology platform to improve its efficiency and productivity, responding to market conditions and increased demand for data analytics and related reporting, which helps manage resources as portfolio volume changes.
- CWCAM's Baltimore, Md., and Needham, Mass. satellite offices were closed in 2018 upon lease expirations. The handful of affected employees either work in the Bethesda office or work from home.

Outlook

The outlook is stable. We expect CWCAM's active special servicing volume will continue to decline during the remainder of 2019 and into 2020, as the servicer continues to liquidate its REO portfolio and manage staffing to maintain efficiencies. At the same time, we expect CWCAM will continue its efforts to increase assets under management in its named special servicer portfolio, largely by working on new CMBS and Freddie Mac structured transactions with B-piece investors.

While the material instance of non-compliance discovered by the outside auditors is concerning for a STRONG-ranked servicer, we believe the matter was isolated and mitigated by the company's remediation measures and proven track record. In addition, we believe management will continue to invest in technology to increase automation and enhance productivity, as well as retain the staffing, systems, and resources necessary to maintain its existing ranking.

In addition to conducting an on-site meeting with servicing management, our review includes current and historical Servicer Evaluation Analytical Methodology data until June 30, 2019, as well as other supporting documentation provided by the company.

Profile

| Servicer Profile | |
|----------------------------|-------------------------------------------------------------------|
| Servicer name | CWCapital Asset Management LLC |
| Primary servicing location | Bethesda, Md. |
| Parent holding company | CW Financial Services LLC |
| | Affiliates of certain Fortress Investment Group LLC managed funds |
| Servicer affiliates | CWCI, REDS, ConvergentRisk Insurance, and RealINSIGHT® |
| Loan servicing system | Commercial Asset Management System (CAMS), RealINSIGHT® |

CWCAM, a subsidiary of CW, was originally formed in 2005, and the experience of its predecessor entities, Allied Capital Corp. and CRIIMI MAE Inc., dates back to 1995. CWCAM is the appointed special servicer on 84 CMBS transactions containing \$40.7 billion in unpaid principal balance (UPB) and an additional 77 Freddie Mac K-Series

transactions aggregating \$65.5 billion in UPB. Its aggregate appointments placed CWCAM as the third-largest among all special servicers on the Mortgage Bankers Assoc. June 30, 2019, rankings list.

Although CWCAM manages distressed and nonperforming loans and real estate owned (REO) assets that are part of CW's assets under management (AUM), it is primarily a third-party special servicer. According to management, CWCAM works with more than 40 unique firms that serve as controlling class bondholders. In addition to performing special servicing duties, CWCAM provides acquisition, valuation, and surveillance services to investors, primarily focused on B-piece underwriting and investment analysis related to CMBS and Freddie Mac K-series transactions.

CWCAM's active special servicing portfolio, with \$2.2 billion in UPB (including \$2 billion in CMBS loans), was the fourth-largest in the industry (see table 1) as of June 30, 2019. The active portfolio includes \$692 million in loan UPB (37 loans) and \$1.5 billion in REO assets across 56 loans containing 59 properties.

Since 2010, CW, which is a commercial real estate finance and investment management company, has been owned by certain Fortress Investment Group LLC (FIG) managed funds. With \$39.2 billion AUM, FIG is a leading, highly diversified global investment management firm. FIG is experienced across a wide range of credit and real estate, private equity, and permanent capital investment strategies, with more than 1,750 institutional investors and private clients worldwide. Although SoftBank Group Corp. acquired FIG for \$3.3 billion in December 2017, FIG-managed funds continue to autonomously own and operate CW.

CW primarily operates through six key wholly owned subsidiaries, including CWCAM. CW's other key operating subsidiaries include:

- CW Capital Investments LLC (CWI), which manages commercial real estate debt and collateralized debt obligations;
- CWFS-REDS LLC (REDS), which provides disposition and sale services for CWCAM and third-party clients relating to commercial real estate loans and REO properties;
- CWFS Insight LLC (RealINSIGHT), which develops, creates, and services technology business solutions for investors, lenders, servicers, and special servicers of CMBS transactions, including CAMS, the proprietary servicing technology platform used by CWCAM, and the Marketplace auction platform;
- ConvergentRisk Insurance Agency LLC, which provides risk management and insurance services; and
- CWC Capital Markets LLC, which provides qualified deal flow, underwriting data and expediting services to capital providers, borrowers, and buyers to facilitate financing transactions.

Table 1

| Total Servicing Portfolio | | | | | | |
|----------------------------------|----------------------|-----------------------|---------------------|-----------------------|------------------------|-----------------------|
| Special servicing | UPB (mil. \$) | YOY change (%) | No. of loans | YOY change (%) | No. of staff(i) | YOY change (%) |
| June 30, 2019(i) | 2,171.2 | (16.5) | 93 | (20.5) | 49 | (2.0) |
| Dec. 31, 2018 | 2,601.5 | (20.6) | 117 | (37.1) | 50 | (28.6) |
| Dec. 31, 2017 | 3,276.0 | (42.5) | 186 | (39.6) | 70 | (11.4) |
| Dec. 31, 2016 | 5,695.3 | (25.1) | 308 | (18.9) | 79 | (20.2) |
| Dec. 31, 2015 | 7,605.4 | (45.6) | 380 | (29.5) | 99 | (11.6) |

(i) YOY change is from prior year end. UPB--Unpaid principal balance. YOY--Year-over-year.

Management And Organization

The subranking for management and organization is STRONG.

Organizational structure, staff, and turnover

CWCAM's principal offices are located in Bethesda, Md., where most of its 49 staff members reside. Certain personnel also operate out of Dallas. The president and chief operating officer (COO) of CW has more than 23 years of industry experience and maintains operating responsibility for CWCAM as well as several of its affiliates. He also reports to the CEO of CW, who has more than 30 years of industry experience. The special servicing business is supported by CW's administrative functions, including the IT, human resources, marketing, legal, insurance, finance, and accounting departments.

The key executives who report to the president and COO include:

- An MD who has more than 35 years of experience and maintains responsibility for CMBS and industry relationships, as well as internal risk assessment for CWCAM;
- An MD and associate general counsel who has more than 25 years of industry experience and, as a CW employee, oversees CWCAM's compliance, operations, and investor reporting;
- An MD of corporate operations for CW with approximately 25 years of industry experience who is responsible for managing and overseeing the office management, marketing, and human resources teams;
- The chief financial officer (CFO) of CW with 40 years of experience who oversees finance and accounting, as well as risk management and insurance functions;
- Two CWCAM SVP team leaders with more than 30 years and 13 years of experience, respectively, who together provide oversight of the special servicing asset management team;
- Two CWCAM executives (an SVP and a VP) in the valuations group, each with approximately 10 years of industry experience, who provide valuation and underwriting support.

The special servicing group primarily consists of two asset management teams. The teams consist of a cross section of asset management personnel who oversee loans and assets that were transferred to special servicing through resolution. In addition, as noted above, CWCAM has a separate group that provides valuations to support the workout process, performs surveillance on the named CMBS and CDO portfolios, and provides third-party underwriting services.

Table 2

| Years Of Industry Experience/Company Tenure(i) | | | | | | | | |
|------------------------------------------------|---------------------|----------------|---------------------|----------------|---------------------|----------------|---------------------|----------------|
| | Senior managers | | Middle managers | | Asset managers | | Staff | |
| | Industry experience | Company tenure |
| Special | 33 | 13 | 21 | 10 | 23 | 10 | 10 | 7 |

(i)As of June 30, 2019.

Senior and middle management possess a high average level of industry experience and company tenure (see table 2);

and despite the management departures previously noted, the metrics have remained fairly stable since our last review with some modest degradation in middle management and staff experience. Overall staffing declined from 70 to 49 full-time employees, largely due to attrition, as only 12 positions of the 33 departures were filled. These positions included the addition of CW staff to CWCAM-focused roles. Nonetheless, CWCAM reported a 35.7% turnover rate during 2018 and experienced an additional 16% of turnover during the first half of 2019. While the reduction in staffing is consistent with the decline in portfolio volume, we believe the servicer's loss of experienced talent has resulted in lower employee depth (i.e., bench strength) in the organization.

Nonetheless, CWCAM's special servicing loan and REO asset managers' industry and company experience, at 23 years and 10 years, respectively, compare favorably with those of its peers. Further, CWCAM reported an assets-to-asset manager ratio of 5.6 (measured by active loans plus REO assets, totaling 96), compared with a ratio of 6.9 as of our last review. We believe the asset manager ratio suggests CWCAM has ample capacity for new assignments. We also expect CWCAM's management and staff members will continue to exhibit the capacity, professional experience, and skills needed to effectively manage its portfolio in accordance with generally accepted industry servicing standards.

Training

CWCAM continues to maintain a solid employee training and professional development program, and its training committee has representatives from various departments in the company. The stated mission of this committee is to organize, plan, and continuously enhance all training programs to ensure targeted topics are covered and each employee achieves a minimum of 40 training hours annually.

Training is conducted by a mix of in-house and outside professionals with a mixture of in-person and intranet-based offerings in Bethesda, Md., along with phone and webinar participation for those in other locations. CWCAM also offers a self-guided, web-based intranet training platform that houses thousands of web-based video courses on various topics and professional development. A wide range of training topics are offered, with an emphasis on practical, hands-on education and high-level, strategic topics. Training participation is also a key element of employee reviews.

Employees new to CWCAM or the industry are provided with a formal onboarding program and orientation in the first two weeks of their hire date. Thereafter, training covers both fundamental and advanced topics related to the CMBS industry, special servicing, real estate, and analytics. Prescribed topics are determined by industry trends, committee members, and polling employees, with the goal of delivering interactive, pragmatic training through high-level, strategic topics that maximize companywide performance and results.

The primary focus on training for 2018 centered on in-house training, legal seminars, and Lynda.com. Among the topics offered and provided to staff in 2018 included: industry trends, REO sales processes, differences between 1.0 Legacy and 2.0 CMBS deals, commercial insurance, reading surveys and title commitments, leasing, and processing consents and assumptions. In 2019, CWCAM continued its focus on seminars that target industry trends and topics that are relevant to each employees' day-to-day work, including cybersecurity and case studies related to various assets handled by CWCAM.

The average hours of training per employee totaled 41 during 2018, with management reporting 17 hours during the first half of 2019. Compliance is monitored through an electronic tracking system that records all offered training. Furthermore, team leaders and senior staff can view reports so their respective teams' progress can be monitored in

real time.

Systems and technology

In our view, CWCAM maintains a well-developed technology platform that facilitates efficient collateral, loan and portfolio information, and data management. It continues to demonstrate a strong commitment to enhancing its systems and business applications.

Servicing system applications

Special servicing activities are managed and tracked through CAMS, which is web-enabled using XML web services. It is a full-function asset management platform capable of tracking CMBS and other assets seamlessly from loan inception (performing or nonperforming) until disposition.

CWCAM has customized CAMS special servicing functionality to meet its specific needs as detailed in the controlling Pooling and Servicing Agreements (PSA) as well its internal policies and procedures. The system allows CWCAM to track servicers and PSA abstracts, calculate servicing fees, prepare expense reimbursements, spread financial statements, generate operating statements, track appraisals, and import and export standard Commercial Real Estate Financial Council Investor Reporting Package (CREFC IRP) reports. It also provides a unique platform for asset management to perform pro forma analyses of various disposition strategies and to create and generate special servicing business plans.

Although CAMS is currently customized to meet the company's existing needs, its flexibility provides for future integration with future core business needs. We believe CWCAM's full use and customization of the CAMS system allows for efficient investor reporting and enhanced compliance with servicing contracts and internal policies and procedures.

Since our last review, CWCAM's IT department has rolled out many changes to streamline business communication, collaboration, and productivity, including the adoption of Microsoft Teams, OneDrive for Business, and SharePoint Online.

Additional key components of CWCAM systems include:

- The CAMS system produces reports using an ad hoc report writer and can be delivered in PDF, Excel, Word, or raw data formats. Over 200 pre-set reports are available in a report catalog.
- Additional applications used in the servicing operation include ARGUS Enterprise (Argus), Bloomberg, CoStar, Dunn & Bradstreet, INTEX, RCAnalytics, REIS, and Trepp.
- The use of Vendor Application Programming Interface and web services provides integration of additional products such as INTEX and Concur with CAMS.
- Property-level cash flow modeling is done through Argus or standard Excel templates, but both are imported through an interface into CAMS.
- Login is required to securely protect data and allow CWCAM to grant access rights sorted by any combination of user, role, assets, or group.
- All systems use the Microsoft Windows server and desktop operating systems.

CWCAM's RealINSIGHT affiliate, which developed CAMS for the company, has active third-party clients, including servicers, banks, and investors, for whom it has developed similar technology. RealINSIGHT recently launched a state-of-the-art cloud-based version of its system--which also has active third-party clients--and which CWCAM has started using for underwriting, due diligence, surveillance, and consent processing. It is also beginning to utilize this system for asset management functions. With respect to upcoming system development plans, CWCAM's primary focus will be to continue to convert to the new RealINSIGHT cloud-based platform for all post-crisis loans.

Business continuity and disaster recovery

CW supports disaster recovery and business continuity planning for CWCAM. Plans are documented and kept in a secure location with ease of access during a disaster, and they include comprehensive emergency response and business process recovery procedures. Target recovery time objectives range from one to two days, depending on the business process. CW also provides plan training and testing and maintenance, and it maintains dedicated business continuity plans (drafted by office management in Bethesda, Md.) that reflect business obligations and needs, as well as detailed checklists, guidance, and response times for each business activity located in Bethesda.

All key staff have high-speed internet (by cable or company-provided hotspots) and access company systems via input/output devices (smartphones, iPads, or company-supplied laptops). As a result, the plan provides for the below responses:

- Primary response: Bethesda, Md., staff operates remotely, utilizing Amazon Web Services (AWS), either from home or an alternative location;
- For key managers, CW contracted for 10 seats with Agility Recovery ReadyOffice, a national firm capable of providing access to over 40 Washington, D.C.-area office properties, with backup office capabilities that can be operational within 24 hours of event declaration; and
- In the event a smaller branch office is affected by a serious disaster event, office staff will operate similarly to Bethesda, Md., initially utilizing remote operations via AWS, followed by guidance from senior management as to next steps based on the extent of the event and anticipated duration of remote operations.

The plan is formally reviewed annually or whenever a significant business process change occurs, whichever is sooner. Plan testing occurs no less than annually. The latest testing in April 2019 was performed in two phases (remote operations and alternative office operations) and was considered successful.

All critical systems are protected by a combination of both backup and replication technologies. Backups are performed nightly and weekly using snapshot technology. These backups are uploaded to Amazon snapshot storage in the production region and then also replicated to the disaster recovery region for additional protection. In addition to routine backups, replication technologies are used where applicable to continuously protect systems on a real-time basis. By leveraging multiple technologies and layers of protection, the company believes it is prepared for any potential system failures or disasters, and has the ability to quickly recover with little to no data loss. Its recovery point objective is four hours.

Cybersecurity

In order to address potential cyber-attacks, an intrusion detection and intrusion prevention system is used to monitor real-time network traffic and provide automated security actions, alerts, escalations, and reporting. Employee phishing e-mails are sent quarterly and third-party network penetration testing is performed annually. The last full test was performed in the fall of 2018 and no material exceptions were noted. The company maintains cyber-insurance coverage and has access to outside counsel as needed for cybersecurity matters, albeit not on retainer.

Additionally, employee desktops and servers are secured with an advanced security platform, which utilizes artificial intelligence to block threats. CWCAM indicates these features are in addition to typical standard security measures such as firewalls and system monitoring. Periodic audits of user access are performed to ensure appropriate access across systems. Both desktops and servers have routine automated patching in place. For critical or high-priority patches, they are applied immediately.

Internal controls

We believe CWCAM has a solid control environment designed to mitigate operational risk and maximize recoveries for investors and clients. The control environment includes detailed policies and procedures (P&Ps), an internal compliance committee with a variety of internal audits (quarterly and annually), as well as an annual external audit of management's attestation of compliance with each of Reg AB and Uniform Standard Audit Program (USAP).

Policies and procedures

We believe CWCAM's special servicing P&Ps, which are available to all employees online via a shared network, are detailed and comprehensive. The P&Ps, which contain workflow charts to help supplement written explanation of policies, are updated as needed under the direction of the compliance committee. The most recent version was dated as of February 2019. CWCAM reviews, updates and/or creates its P&Ps throughout the year as needed to reflect any changing business practices, regulatory demands or general business practice refinements, and incorporates such changes into its manual. Refinements within the prior three years include the improvement of controls and procedures implemented for property cash flow, wiring instructions, and the expansion of unannounced property and employee audits.

Compliance and quality control

CWCAM's compliance committee is responsible for the company's overall internal framework. The compliance committee consists of various senior management, compliance, and reporting employees. These members include the MD of legal (i.e., associate general counsel), the two SVP team leaders in special servicing, the MD of relationship management and internal risk assessment, the SVP of reporting, the MD of corporate operations, and the CFO.

Internal and external audits

CW conducts quarterly reviews, the frequency of which we view favorably, to evaluate CWCAM's compliance with Reg AB along with related PSAs.

The 2018 quarterly reviews performed by CW's internal audit group contained no exceptions. However, the 2018 Reg AB report contained a material instance of noncompliance related to timely completion of bank reconciliations, which

was not identified during the quarterly reviews. Specifically, for five months of calendar year 2018 REO property-level bank reconciliations were not completed within the 30-day requirement of Reg AB. In response to the lack of adherence to company P&Ps, the compliance committee reviewed the reasons for noncompliance and added two additional procedures to supplement its existing procedures to prevent a recurrence. CWCAM's USAP report for 2018 contained no material exceptions.

In addition, in early 2019, CW restructured its internal audit function and decided to outsource the internal audit schedule to two external accounting firms: one that performs REO property audits (the same auditor that performs the external Reg AB audit) and another firm that is responsible for completing the remainder of the internal audit schedule, including the quarterly reviews. The change was made to improve the quality of the internal audit function, as there were lapses in discovering exceptions that should have been detected and reported as indicated above. We reviewed the initial quarterly reviews of the agreed upon procedures that was performed for the first and second quarters of 2019 and they contained a single minor exception in the first quarter.

As an additional control to improve compliance with PSAs and internal P&Ps, CWCAM uses an internal compliance module within CAMS. The module tracks the completion and delivery of all required third-party reports and other requirements, such as appraisal subordinate entitlement reduction calculations, business plans, and official notices. The results are available online to asset management staff in the form of reminders and ticklers, and exception reports are distributed to senior management. The prior internal audit regime performed the annual compliance review with respect to CWCAM's internal P&Ps as incorporated in CAMS in June 2018 with no exceptions noted.

Finally, CWCAM maintains P&Ps to ensure the appropriate treatment and recognition of ancillary and servicing fees governed by PSAs. The prior CW internal audit regime reviewed these procedures and performs an annual fee audit. The audit, which covered a nine-month period in 2018, contained no exceptions to the appropriate treatment and recognition of fees noted.

Insurance and legal proceedings

CWCAM has represented that its directors and officers, as well as its errors and omissions insurance coverage, is in line with the requirements of its portfolio size as of June 30, 2019.

Management reported two material legal matters outstanding against CWCAM. One was initiated by the trustee (the trustee litigation) in December 2015 under five PSAs, each of which held a pari passu interest in a \$3 billion mortgage. The petition requests the Southern District of New York (SDNY Court) to instruct the trustee, the trust beneficiaries, and any other interested parties as to the proper allocation of \$560 million of disputed proceeds that CWCAM considered to be penalty interest (and thus was paid to CWCAM as servicer compensation). The second legal matter, filed in the Supreme Court of the State of New York in June 2018, was initiated by a CDO bondholder pertaining to the same underlying \$3 billion mortgage and asserts claims against CWCAM for aiding and abetting, breach of fiduciary duty, conversion, and unjust enrichment.

Management denies the claims and indicated that it intends to vigorously contest each of these matters. Further, CWCAM does not provide for any accrual for any legal exposure in its financial statements. While we are concerned with the magnitude of the damages sought in the trustee litigation, our financial position assessment of SUFFICIENT for CWCAM assumes the servicer is successful in such litigation. S&P Global Ratings will continue to monitor the

litigation matters and will take ranking action as appropriate.

Loan Administration

The loan administration subranking for commercial mortgage special servicing is STRONG.

CWCAM has built a track record of successfully managing and disposing of troubled assets nationwide while handling complex assets collateralized by multiple property types. CWCAM manages special servicing from its headquarters in Bethesda, Md., and also has staff members located in Dallas. Of its 49 full-time employees, CWCAM reported that 17 were dedicated loan workout and REO asset management personnel.

In conjunction with improving market conditions, the company's active special servicing portfolio (see table 3) has declined dramatically in recent years and continued to drop during 2019. The June 30, 2019, portfolio was approximately 90% lower than the peak level.

Table 3

| Special Servicing Portfolio | | | | | | | | | | | | | | | |
|-----------------------------|------------------|-----|----------------|------------------|-----|----------------|------------------|-----|----------------|------------------|-----|----------------|------------------|-----|----------------|
| | June 30, 2019 | | | Dec. 31, 2018 | | | Dec. 31, 2017 | | | Dec. 31, 2016 | | | Dec. 31, 2015 | | |
| | UPB (mil. \$) | No. | Avg. age(i) |
| Active inventory | | | | | | | | | | | | | | | |
| Loans | 692.0 | 37 | 10.1 | 996.5 | 44 | 18.2 | 1,884.0 | 102 | 16.2 | 3,660.1 | 183 | 12.3 | 3,879.5 | 185 | 13.9 |
| Real estate owned | 1,479.1 | 56 | 27.3 | 1,605.1 | 73 | 23.7 | 1,392.0 | 84 | 35.7 | 2,035.2 | 125 | 42.5 | 3,725.9 | 195 | 42.0 |
| Total | 2,171.2 | 93 | 20.5 | 2,601.5 | 117 | 21.6 | 3,276.0 | 186 | 25.0 | 5,695.3 | 308 | 24.6 | 7,605.4 | 380 | 28.3 |

Totals may not add due to rounding. (i) Average age reflects the time in months from the date the loan first became specially serviced to the reporting date.

As highly seasoned loans have been resolved since our last review, the overall average hold time declined to 20.5 months from 25 months. This improvement resulted from the lower average hold time of 27.3 months for the REO portfolio (versus 35.7 months for the last review) along with a reduction in the average hold period for loans to 10.1 months (for 37 loans) from 16.2 months (for 102 loans). We have a positive view of the shortened hold time, particularly since CWCAM's average hold period for its remaining REO assets is now the lowest of all STRONG-ranked CMBS special servicers (other than those with a de minimis portfolio).

Loan recovery and foreclosure management

CWCAM displays comprehensive and proactive loan recovery and foreclosure management protocols to efficiently resolve nonperforming loans across a broad spectrum of property types. Highlights of its processes are described below.

Following a transfer to special servicing, the asset manager will conduct a preliminary assessment of the asset, including identification of all entities involved with the asset. The asset manager works with the legal department to determine whether the mortgage loan issuer breached any representations or warranties that would allow for a

put-back claim to the loan issuer. The asset manager will also review the collateral and loan files within two weeks of file receipt. The goal of the preliminary assessment is to develop an understanding of the lender's rights under the loan documents and the conditions that led to the loan's default.

Utilizing pre-approved lists, CWCAM's operations team will order the necessary third-party reports (i.e., inspections, appraisals, property condition, and environmental reports) required under a PSA, consulting with the asset manager when selecting the vendors that will receive the engagement.

The asset manager will contact the borrower and, either personally or through a third-party vendor, will conduct a site inspection within 60 days of loan transfer. If an asset manager performs the site inspection personally, he/she is expected to make every effort to meet with the borrower while on-site in order to establish a dialogue for resolving the current default. CWCAM requires borrowers to sign a pre-negotiation agreement before commencing any workout discussions. In cases where a third-party inspector is engaged, the asset manager is expected to make every effort to be sure that appropriate borrower-related personnel are on site to provide complete access.

Asset managers dealing with monetary defaults will generally employ a dual track workout strategy. Under the dual track approach, the asset manager aggressively pursues legal remedies, while actively negotiating with the borrower to cure the monetary default. Nonetheless, CWCAM bases its workout and liquidation strategies on net present value calculations and takes the potential for litigation into consideration.

Asset managers must complete initial asset status reports (ASRs) within PSA guidelines, and an ASR process workflow chart is included in the P&Ps. Subsequently, asset managers complete a full asset business plan within 90 days of transfer using information and analysis gathered after the transfer. This process includes support from CWCAM's valuations team to establish the collateral's target recovery value as well as the fair value of the loan, to the extent required under a PSA. The business plan establishes a target timeframe for the manager to resolve the loan or asset through a loan reinstatement, restructure, payoff, foreclosure, or sale. Asset managers follow more intensive valuation procedures for loans with UPB in excess of \$50 million.

Business plans are presented for approval to the weekly CWCAM credit committee, according to certain delegations of authority. Business plans require an analysis demonstrating that the requested action will maximize the net present value recovery to the trust, with at least two scenarios modeled.

Credit committee members include the two team leaders, the associate general counsel (who oversees legal, compliance/operations, and reporting), and the head of the valuations team. For loans of \$75 million or more, the president of CWCAM must also sign off on the business plan. We believe the inclusion of the associate general counsel is a best practice because it enhances adherence with real estate mortgage investment conduit rules, servicing standards, company procedures, and servicing contracts. Following committee approval, additional consent is sought by the appropriate controlling class representatives under the governing documents.

If it is determined that a strategy should be altered or a new one undertaken, the asset manager may be required to produce a new business plan (depending on the extent of the change). All plans are updated as required under PSAs, but generally no less than every 12 months from the last approved plan or when a material change has occurred to the asset or its strategy.

In the event that CWCAM's approved strategy is foreclosure, the asset manager is responsible for coordinating the foreclosure with outside counsel and obtaining all of the appropriate internal and trust approvals. Major asset manager responsibilities prior to foreclosure include:

- Working with the legal department to update title and survey and to secure appropriate title insurance protection;
- Working with the legal department to create a single purpose entity that will take title to the property;
- Ensuring that appropriate insurance is in place;
- Ensuring that all PSA-required third-party reports (i.e., environmental site assessment, property condition report, appraisal, etc.) are ordered and reviewed, as applicable;
- Establishing that there are no adverse environmental or structural conditions affecting the property;
- Identifying and hiring the property manager and leasing agent; and
- Overseeing the foreclosure sale, including executing the bid strategy approved in the loan business plan.

Table 4 provides a history of CWCAM's loan resolution activity. In the first half of 2019, CWCAM's loan resolution dollar volume of \$787.8 million included 31 loans (\$510.5 million UPB) with an average resolution time of 20.3 months, which represented a multi-year high. Discounted payoff/note sale resolutions comprised 48% of the resolution and took a relatively lengthy 30.4 months on average. The discounted payoff/note sale resolution time was skewed by several workouts which were highly litigious, including a nine-year bankruptcy case that went to the U.S. Supreme Court before being resolved in January 2019. While overall average time of resolution has increased since our last review, the servicer has reported an improved average foreclosure time of 11.4 months, albeit on a smaller sample size relative to prior years of nine.

All resolution strategies were utilized during the first half of 2019, including a representations and warranty claim settlement. The number of CWCAM's loans returned to master servicers' (i.e., loan modifications) continue to be modest, which is consistent with industry trends.

Table 4

| Total Special Servicing Portfolio--Loan Resolutions | | | | | | | | | | | | | | | |
|------------------------------------------------------------|---------------------|-----|-----------------|------------------|-----|-----------------|------------------|-----|-----------------|------------------|-----|-----------------|------------------|-----|-----------------|
| | 2019(i) | | | 2018 | | | 2017 | | | 2016 | | | 2015 | | |
| | UPB (mil. \$) | No. | Avg. age(ii) | UPB (mil. \$) | No. | Avg. age(ii) |
| Resolutions | | | | | | | | | | | | | | | |
| Loans | 684.5 | 22 | 23.9 | 814.3 | 37 | 21.8 | 2,720.5 | 160 | 9.7 | 2,286.7 | 137 | 7.9 | 3,789.2 | 215 | 11.6 |
| Foreclosed loans | 103.4 | 9 | 11.4 | 391.4 | 41 | 13.4 | 1,067.5 | 65 | 12.4 | 595.5 | 57 | 17.9 | 700.7 | 70 | 15.3 |
| Total | 787.8 | 31 | 20.3 | 1,205.7 | 78 | 17.4 | 3,788.0 | 225 | 10.5 | 2,882.1 | 194 | 10.9 | 4,489.9 | 285 | 12.5 |
| Resolution breakdown | | | | | | | | | | | | | | | |
| Returned to master | 149.6 | 4 | 8.6 | 29.0 | 2 | 16.0 | 290.0 | 21 | 9.5 | 825.9 | 26 | 11.9 | 1,915.6 | 62 | 13.1 |
| Full payoffs | 20.3 | 2 | 14.0 | 60.6 | 9 | 6.4 | 1,357.0 | 81 | 5.8 | 823.0 | 74 | 5.1 | 1,065.5 | 81 | 5.6 |
| DPO or note sale | 510.5 | 15 | 30.4 | 724.7 | 26 | 27.6 | 1,073.5 | 58 | 15.3 | 637.8 | 37 | 10.9 | 808.1 | 72 | 17.0 |

Table 4

| Total Special Servicing Portfolio--Loan Resolutions (cont.) | | | | | | | | | | | | | | | |
|-------------------------------------------------------------|-------|----|------|---------|----|------|---------|-----|------|---------|-----|------|---------|-----|------|
| Removed through R&W claim settlement | 4.0 | 1 | 7.2 | 0.0 | - | - | 0.0 | - | - | 0.0 | - | - | 0.0 | - | - |
| Foreclosed loans | 103.4 | 9 | 11.4 | 391.4 | 41 | 13.4 | 1,067.5 | 65 | 12.4 | 595.5 | 57 | 17.9 | 700.7 | 70 | 15.3 |
| Total/average | 787.8 | 31 | 20.3 | 1,205.7 | 78 | 17.4 | 3,788.0 | 225 | 10.5 | 2,882.1 | 194 | 10.9 | 4,489.9 | 285 | 12.5 |

Totals may not add due to rounding. (i)Data only include the first six months of the year. (ii)Average age reflects the time in months from the date the loan first became specially serviced to the reporting date. UPB--Unpaid principal balance. DPO--Discounted payoff. R&W--Representations & warranties.

REO management and dispositions

CWCAM demonstrates extensive REO management and sales oversight. Notable aspects are described below.

Loan asset managers generally continue to handle assets following foreclosure and conversion to REO status. Nonetheless, for certain assets--primarily large hospitality assets, large multifamily assets, regional malls, and large office buildings--CWCAM may utilize REO asset managers with particular expertise with the property type upon a foreclosure. In such instances, the REO asset manager has the following duties:

- Before the foreclosure, the REO asset manager and the loan asset manager will retain a property manager and leasing agent to operate the asset. The REO asset manager will attempt to initiate this process at least 30 days prior to the foreclosure date to allow sufficient time to interview managers and agents, set up bank accounts, evaluate service contracts, and negotiate the management agreement.
- The REO asset manager will endeavor to inspect the property at least 30 days prior to the foreclosure date, but no later than 90 days (up from 30 days since our last review) after title transfer.

CWCAM has specific P&Ps for asset managers to determine the exit strategy for all REO assets following title transfer. These include the following:

- The property manager is required to submit an annual operating and capital budget to the asset manager within 60 days (up from 30 days since our last review) of asset takeover. The budget will form the foundation for the REO business plan.
- Asset managers must prepare a REO business plan within 90 days of a foreclosure or transfer of title to the trust. The REO plan outlines in detail the operating, repositioning, and liquidation strategies that are expected to produce the highest net present value recovery for the trust. Once approved, the REO plan also provides the asset manager with the budget authority required to implement the strategy.
- The selected strategy specified in the REO plan must be based on a thorough analysis of the property, its surrounding location, and existing market conditions. Among other functions, the REO plan serves as an internal control by enabling senior management to review and approve each recommended plan. The credit committee must approve REO plans in accordance with an established approval matrix.
- REO business plans must be updated annually, or when a material change occurs.

CWCAM maintains specific P&Ps associated with its REO disposition actions. Highlights are noted below:

- REDS leads, coordinates, and manages all CWCAM disposition actions for both loan sales and REO.

- Once the asset manager determines the disposition goal in terms of timing and sale price, and receives credit committee and external approval, the asset manager notifies REDS and CWCAM's president and a team leader will select a broker to market the REO asset.
- REDS will notify the asset manager that the sale methodology, broker, and respective fee structure have been approved. The asset manager consults with the credit committee to establish a minimum sale price and, once the asset manager receives controlling holder approval, REDS initiates the formal sale process. The president, the team leaders, the asset manager, and REDS are all involved in reviewing bids and selecting the purchaser.

As noted in table 5, CWCAM has substantial REO disposition experience. In particular, since 2013 CWCAM has sold more than 900 assets for aggregate net sales proceeds of over \$14 billion, CWCAM's overall REO sales have largely been consistent with market value (an outsized sale inflated the ratio during 2015). Further, since our last review, CWCAM has reported a substantially improved REO average hold period for properties it has liquidated, declining from more than 29 months in 2017 to below 20 months during 2018 as well as through the first half of 2019.

Table 5

| Total Special Servicing Portfolio--Real Estate Owned Sales | | | | | | | | | | | | | | | |
|------------------------------------------------------------|---------------------|-----|-----------------------------------------|---------------------|-----|-----------------------------------------|---------------------|-----|-----------------------------------------|---------------------|-----|-----------------------------------------|---------------------|-----|-----------------------------------------|
| | 2019(i) | | | 2018 | | | 2017 | | | 2016 | | | 2015 | | |
| | Amount (mil. \$) | No. | Avg. REO hold period (mos.) |
| Estimated market value | 223.1 | 36 | 10.6 | 971.6 | 99 | 19.5 | 1,131.2 | 107 | 29.2 | 1,371.2 | 130 | 33.8 | 4,853.8 | 149 | 31.9 |
| Net sales | 225.0 | -- | -- | 1,020.2 | -- | -- | 1,039.9 | -- | -- | 1,366.4 | -- | -- | 6,149.5 | -- | -- |
| Sale/market value (%) | 100.9 | -- | -- | 105.0 | -- | -- | 91.9 | -- | -- | 99.7 | -- | -- | 126.7 | -- | -- |

(i) Data only includes the first six months of the year. REO--Real estate owned.

REO accounting and reporting

CWCAM's controls and procedures for property-level accounting and oversight are sound. Noteworthy aspects are described below.

Asset managers are responsible for ensuring that the property operating accounts are opened when a property is transferred to REO and the CWCAM cash controls are established immediately. CWCAM establishes a single operating account for rent collections and payment of property operating expenses. The accounts, which require dual signature authority within the property management company, are held at a federally insured bank and opened in the name of the trust or the special-purpose entity.

Property managers deposit all funds into the operating account within 24 hours of receipt and pay operating expenses from funds in the account to the extent that they are consistent with an approved budget. A maximum permitted operating account balance is established, and property managers wire excess funds to CWCAM for delivery to the trust on a monthly basis. If insufficient funds exist to pay expenses or capital expenditures, the property manager must submit an advance request to the asset manager, along with supporting information. Pursuant to approvals under the delegations of authority, CWCAM's accounting department will instruct the master servicer to advance funds to the

operating account.

Property managers must submit a monthly financial reporting package to CWCAM generally no later than the third week of each month, all of which are distributed to CWCAM electronically. The asset manager must review and approve each package to ensure that it is complete and meets any specific requirements stated in the property management agreement. Variance reports, which the asset managers review, are included in the monthly packages.

In addition, CWCAM has developed and implemented a formal REO property management and audit program. The company uses audit results to streamline contractual agreements and improve oversight. Historically, regular ongoing testing was performed on various properties by CW's internal audit department. In conjunction with the restructure of its internal audit function, management indicated that an external accounting firm will be handling this function going forward. Management provided us with the initial audit conducted by the external accounting firm.

Subcontracting management

CWCAM handles the management and oversight of subcontractors in a controlled and effective manner and follows formal guidelines. Contracting for third-party reports (i.e., appraisals, environmental assessments, and property condition reports) is centralized under designated staff on the operations and compliance team. We view this as best practice because it allows CWCAM to closely monitor performance and improve the speed with which the contractors are engaged, and reports are distributed to the appropriate PSA parties. The legal department manages attorney engagements and REDS manages co-broker engagements.

CWCAM maintains an approved vendor list for appraisers, environmental consultants, attorneys, property management firms, and receivers. Qualifications, market knowledge, and fees based on particular locations and property types are taken into consideration in the engagement process. The use of any vendor not already included on the list is approved specifically by the appropriate managing director.

Property managers are discussed, reviewed, and selected by the asset manager. In concert with the legal department, a management agreement is negotiated and executed using CWCAM's standard management agreement for the property type.

As previously discussed, CWCAM uses its REDS subsidiary to aid in special servicing property and note sale brokerage disposition services. Selection of sales co-brokers, which is handled centrally via REDS, also requires concurrence and approval by CWCAM's president. REDS also utilizes the RealINSIGHT Marketplace affiliate platform to conduct property and note auctions, which are also collaboratively marketed with third-party real estate brokers.

In order to manage the conflict of interest, inherent in using affiliates, CWCAM engaged an independent third party to conduct a market survey to the reasonableness of fees charged by REDS. Results from the most recent engagement during 2018 led to the third parties' conclusion that the use of the REDS platform and the fees paid for the services by CWCAM to its affiliate are consistent with customary industry practices. Management anticipates performing similar fee studies on an annual basis to continue to manage the conflict of interest.

Performing loan surveillance

CWCAM has a three-person performing loan surveillance team that monitors loan portfolios where the company is the appointed special servicer. The team focuses on identifying problem loans or loans approaching maturity that contain

refinance risk. Its surveillance practices encompass Freddie Mac deals and new issue conduit transactions.

Responsibilities include:

- Reviewing Freddie Mac deal performance on a monthly basis, utilizing the RealINISGHT data team which loads a third-party data feed into CWCAM's system and data warehouse to consolidate the collateral detail from various CREFC reports.
- Generating a variety of reports including an operating statement report, a portfolio recommended watchlist report, a comprehensive watchlist report, a comparative financial status report and a stress DCR report.
- Producing and distributing questions to the master servicer that address financial performance, capital projects, and any other issues that affect properties on the watchlist.
- Conducting quarterly conference calls with master servicers to discuss loans of concern to create a better understanding of ongoing asset and portfolio issues.
- Communicating as necessary with controlling class representatives to keep them abreast of ongoing issues and to obtain consent for loan servicing actions, such as calling for the transfer of a loan in the event that circumstances warrant such action.
- Assisting with the transfer of information to CWCAM special servicing personnel.

We believe CWCAM's active surveillance allows for early detection of property issues, which enhances timely action to help mitigate or lessen potential loan losses.

Borrower requests

CWCAM integrates the processing of performing loan consent requests within the same asset management team that handles active specially serviced assets.

A CAMS module is used to track all consent requests received. P&Ps indicate that CWCAM strives to process the various requests within 15 days of receipt of the required documentation from the borrower. Consent requests are underwritten according to established P&Ps, which vary by consent type (i.e., loan assumption, lease approval, partial release of collateral, etc.) and a case recommendation is prepared according to standardized templates. The approval process follows well-controlled and established delegations of authority procedures.

In the first half of 2019, CWCAM reported that it processed 104 borrower requests as a special servicer. Leasing consent activity represented 53% of all request types, loan assumptions comprised 28%, and partial releases of collateral comprised the bulk of the balance with 15%. Average internal processing time was well within its internal target.

Legal department

CWCAM has a full-time, four-person dedicated legal team that is fully integrated in the day-to-day special servicing and loan management process, and is managed under sound controls. Highlights of key processes are noted below.

CWCAM selects outside counsel from an approved counsel list that groups the attorneys by geographic location and specialty. While asset managers may recommend outside counsel from the approved list, the legal department makes the final decision on engagements. In all cases, the asset manager will provide outside counsel with information to

avoid conflicts of interest, including the exact name of the borrower, the name, and address of the collateral property, and the names of any guarantors or principals. If the firm passes the conflict check, the legal department will issue CWCAM's standard engagement letter. The engaged firm will then provide a legal budget, which the asset manager must approve. The asset manager also reviews all invoices the outside counsel submits for conformance with the engagement letter. The legal team also reviews and approves (or revises, as needed) each legal invoice. Approvals are tracked in CAMS.

Financial Position

The financial position is SUFFICIENT.

Related Research

- CWCcapital Asset Management LLC STRONG Commercial Mortgage Loan Special Servicer Ranking Affirmed; Outlook Is Stable, Oct. 15, 2019
- Select Servicer List, Sept. 13, 2019
- Analytical Approach: Global Servicer Evaluations Rankings, Jan. 7, 2019

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