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Servicer Evaluation: PGIM Real Estate Loan Services Inc.

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Ranking Overview

Servicing category	Overall ranking	Subrankings		
		Management and organization	Loan administration	Ranking outlook
Commercial mortgage loan primary	STRONG	STRONG	STRONG	Stable
Commercial mortgage loan master	AVERAGE	STRONG	AVERAGE	Stable
Commercial mortgage loan special	ABOVE AVERAGE	STRONG	ABOVE AVERAGE	Stable
Financial position				
SUFFICIENT				

Rationale

S&P Global Ratings' rankings on PGIM Real Estate Loan Services Inc. (PGIM RE Loan Services) are STRONG as a commercial mortgage loan primary servicer, AVERAGE as a commercial mortgage loan master servicer, and ABOVE AVERAGE as a commercial mortgage loan special servicer. On Dec. 2, 2022 we affirmed the rankings (see "PGIM Real Estate Loan Services Inc. Commercial Mortgage Loan Servicer Rankings Affirmed; Ranking Outlooks Stable," published Dec. 2, 2022). The ranking outlook is stable for each ranking.

Our rankings reflect PGIM RE Loan Services':

- Experienced senior management team and staff with significant company tenure;
- Institutional backing and financial support from PGIM Real Estate (PGIM RE) and its parent holding company, Prudential Financial Inc. (PFI);
- Lengthy track record of servicing loans from a variety of different capital sources;
- Comprehensive audit and quality control environment;
- Integrated and effective technology tools and systems;
- Declining volume and lack of commercial mortgage loan subservicer oversight in master servicing; and
- Decentralized special servicing organizational structure.

Since our prior review (see "Servicer Evaluation: PGIM Real Estate Loan Services Inc." published Feb. 19, 2021), the following changes and developments have occurred:

- The vice president of asset management left the company in the summer of 2022 and was replaced by two internal directors who now oversee two separate asset management groups: Core/Fannie Mae (FNMA)/Freddie Mac (FMAC) asset management (which includes commercial mortgage-backed securities, balance sheet, and third-party asset management oversight) and Federal Housing Administration (FHA)/Surveillance asset management (which includes construction management, loan surveillance, and special servicing oversight).

- The vice president of international servicing's role was expanded to include oversight of high yield servicing after the simultaneous departure of three members, including a director, of the high yield servicing group in first-half 2022.
- The general counsel of PGIM RE Loan Services left the company in first-half 2022 and has yet to be replaced. In the interim, PGIM RE Loan Services relies on legal assistance from PGIM Real Estate Debt's law department.
- Pramerica PFI's offshore business and technology solutions arm, which works closely with PGIM RE Loan Services, was rebranded to PGIM Ireland Limited (PGIM Ireland).
- PGIM RE's information technology (IT) department automated credit facility tracking and reporting.
- The IT department began to modernize PGIM RE's proprietary pipeline and asset management system, LoanConnect, including moving system servers to the cloud.
- PGIM RE Loan Services created tenant and property Power BI dashboards, utilizing data from the debt and equity sides of the business.
- PGIM RE Loan Services' borrower portal, BorrowerConnect, was enhanced to allow borrowers to upload loan documents online and submit requests to company contacts more easily.
- From June 30, 2020, to June 30, 2022, the primary servicing portfolio grew 13% by unpaid principal balance (UPB) while the loan count grew by less than 2%. The special servicing portfolio declined by 37% in UPB to \$284.3 million from \$448.5 million and 50% by loan count to six loans from 12 loans. Master servicing volume continued to decline slowly by both UPB and loan count.

The ranking outlook is stable for each ranking. PGIM RE Loan Services has a lengthy track record of servicing commercial and multifamily mortgage loans. The company has extensive institutional resources to help maintain a strong internal controls environment and has shown a dedication to servicing technology enhancements. Therefore, we expect that in the near term PGIM RE Loan Services will be able to continue to successfully handle any portfolio growth as well as any potential portfolio distress caused by rising interest rates and a recession.

In addition to conducting an on-site meeting with servicing management, our review includes current and historical Servicer Evaluation Analytical Methodology data through June 30, 2022, as well as other supporting documentation provided by the company.

Profile

Servicer Profile

Servicer name	PGIM Real Estate Loan Services Inc.
Primary servicing location	Dallas and Atlanta
Parent holding company	Prudential Financial Inc.
Loan servicing system	Strategy v. 19D

PGIM RE Loan Services, the commercial mortgage loan servicing arm of PGIM RE, is a subsidiary of PGIM Real Estate Finance LLC and an indirect subsidiary of parent holding company PFI. As part of PGIM, the investment management business of PFI, PGIM RE operates as a fully integrated real estate equity and debt platform offering global commercial

mortgage origination, asset management, and loan servicing. It had \$207 billion in assets under management and administration as of June 30, 2022.

PGIM RE Loan Services' servicing portfolio primarily includes loans from the PFI general account, government-sponsored entities (GSEs), other third-party companies, and CMBS portfolios. It also services a growing international portfolio with loans from 14 different countries, which is out of the scope of this review and not included in any of the tables in this report. PGIM RE Loan Services employs 151 professionals, mostly in Dallas and a PFI affiliate offshore office in Letterkenny, Ireland. As of June 30, 2022, PGIM RE Loan Services managed a primary and master servicing portfolio of approximately \$113.0 billion and a special servicing portfolio of \$284.3 million (see tables 1 and 2).

Table 1

Total Servicing Portfolio						
	UPB (mil. \$)	YOY change (%)⁽ⁱ⁾	No. of assets	YOY change (%)⁽ⁱ⁾	No. of staff	YOY change (%)⁽ⁱ⁾
Primary/master servicing						
June 30, 2022	113,017.9	0.8	4,531	(0.4)	151	0.7
Dec. 31, 2021	112,168.7	7.2	4,548	1.1	150	11.1
Dec. 31, 2020	104,650.8	6.4	4,499	0.2	135	(2.2)
Dec. 31, 2019	98,330.6	9.9	4,492	2.3	138	(3.5)
Dec. 31, 2018	89,432.5	6.8	4,391	(2.1)	143	(0.7)
Special servicing						
June 30, 2022	284.3	(12.9)	6	(14.3)	1	0.0
Dec. 31, 2021	326.5	(20.6)	7	(22.2)	1	(50)
Dec. 31, 2020	411.3	829.5	9	80.0	2	0.0
Dec. 31, 2019	44.3	(55.3)	5	(37.5)	2	0.0
Dec. 31, 2018	99.0	(28.8)	8	(27.8)	2	0.0

(i) June 30, 2022 YOY change based on the prior year end. YOY--Year-over-year. UPB--Unpaid principal balance.

Table 2

Portfolio Overview										
	June 30, 2022		Dec. 31, 2021		Dec. 31, 2020		Dec. 31, 2019		Dec. 31, 2018	
	UPB (mil. \$)	No.	UPB (mil. \$)	No.	UPB (mil. \$)	No.	UPB (mil. \$)	No.	UPB (mil. \$)	No.
Primary loans	111,726.5	4,394	110,849.3	4,396	103,490.7	4,315	96,851.4	4,253	87,899.6	4,123
Master (SBO) loans	1,291.4	137	1,319.4	152	1,160.2	184	1,479.2	239	1,532.8	268
Total servicing	113,017.9	4,531	112,168.7	4,548	104,650.8	4,499	98,330.6	4,492	89,432.5	4,391
Average loan size	24.9	--	24.7	--	23.3	--	21.9	--	20.4	--
Special servicing										
Loans	284.3	6	326.5	7	411.3	9	44.3	5	99.0	8
REO properties	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Total special servicing	284.3	6	326.5	7	411.3	9	44.3	5	99.0	8

Totals may not add due to rounding. SBO--Serviced by others. REO--Real estate owned. UPB--Unpaid principal balance.

Table 3

Primary/Master Portfolio Breakdown By Property Type And State(i)				
	UPB (mil. \$)	UPB (%)	No. of properties	Properties (%)
Type				
Multifamily	56,066.3	49.6	2,485	44.3
Warehouse	12,535.7	11.1	1,011	18.0
Office	12,381.3	11.0	261	4.7
Retail	7,311.8	6.5	236	4.2
Healthcare	6,315.7	5.6	249	4.4
All Other	18,407.1	16.3	1,369	24.4
Total	113,017.9	100.0	5,611	100.0
State				
CA	31,645.1	28.0	1,345	24.0
TX	11,189.7	9.9	630	11.2
NY	9,185.2	8.1	275	4.9
FL	5,109.1	4.5	305	5.4
GA	4,899.9	4.3	227	4.0
All Other	50,988.9	45.1	2,829	50.4
Total	113,017.9	100.0	5,611	100.0

Totals may not add due to rounding. (i)As of Jun. 30, 2022. UPB--Unpaid principal balance.

Table 4

Primary/Master Portfolio By Investor Product Type(i)				
Loan Type	UPB (mil. \$)	Loan count	UPB (%)	Loan (%)
On own or parent's balance sheet	49,555.6	1,709	43.8	37.7
Fannie Mae	22,792.1	978	20.2	21.6
Other third party investors (REITs, Investment Funds, etc.)	18,801.2	510	16.6	11.3
Freddie Mac K-Series	10,654.0	475	9.4	10.5
FHA & Ginnie Mae	5,681.9	494	5.0	10.9
CMBS/CDO/ABS	2,029.1	192	1.8	4.2
Freddie Mac (exclude "K-Series" deals)	1,954.3	131	1.7	2.9
Life insurance companies	1,549.6	42	1.4	0.9
Total	113,017.9	4,531	100.0	100.0

Totals may not add due to rounding. (i)As of Jun. 30, 2022 UPB--Unpaid principal balance.

Management and Organization

The management and organization subrankings are STRONG for primary, master, and special servicing.

Organizational structure, staff, and turnover

The president of PGIM RE Loan Services has more than 30 years of industry experience and significant company tenure. The group is organized into six functional departments servicing two separate asset management departments (CORE/FMAC/FNMA and Surveillance/FHA), investment operations, business strategy and support, and

international and high yield servicing—with each group head reporting to the company president. PGIM RE Loan Services receives organizational support from PGIM RE's information technology, human resources, compliance, vendor management, internal audit, legal, and finance departments.

The servicing department's responsibilities include overseeing non-credit-related borrower consents, new loan setup, early-stage collections for delinquent loans, cash management, and tax and insurance monitoring. The asset management departments, among other responsibilities, monitor covenant compliance, order and review property inspections, conduct watchlist monitoring and special servicing, and oversee credit-related borrower requests. Investment operations responsibilities include investor reporting, loan fee accounting, and bank reconciliations, while the business strategy and support department oversees quality control and metrics, administers the business continuity plan, and performs quality assurance testing on the servicing portfolio. Finally, international and high yield servicing performs servicing and asset management on high touch portfolios that cumulatively totaled approximately \$12.8 billion as of June 30, 2022.

PGIM RE Loan Services utilizes both an offshoring and outsourcing strategy. At PGIM Ireland 32 employees provide both offshore international and high yield servicing, accounting, and investor reporting as well as support on PGIM RE Loan Services other domestic portfolios. Since our last review, Pramerica was rebranded to PGIM Ireland Limited shortly after most of its employees, though not those who supported PGIM RE Loan Services, became employees of Tata Consultancy Services. Also, since our last review, management changed reporting lines so that the employees in Letterkenny now report through the different PGIM RE Loan Services Dallas department heads instead of having a separate offshore department. Most of the overall staff growth since our last review (see table 1) occurred in PGIM Ireland where the staff increased from 21 to 32. New PGIM Ireland employees were hired to service the high yield servicing and international portfolios as well as to support PGIM RE Loan Services in other departments. PGIM Ireland recently acquired a new office building in Letterkenny that will allow for future staff growth.

PGIM RE Loan Services outsources other servicing and asset management functions to two third-party providers based in India. One vendor performs insurance support, including insurance accord and policy data entry and verification, while the other performs property financial and rent-roll data entry, quality risk rating support, reserve disbursement preparation and set-up, and investor reporting support, among other responsibilities. The outsourced servicing responsibilities to the two vendors do not include any borrower-facing activities and PGIM RE Loan Services provides quality control on a significant percentage of the work completed by the vendors. Overall, we found the offshore and outsource processes and scope to be well-defined and thoroughly monitored.

PGIM RE Loan Services' primary and master management team and staff exhibit levels of industry experience and company tenure that are higher than or in line with similarly ranked servicers with STRONG management and organization subrankings (see table 5). PGIM RE Loan Services only has one employee fully dedicated to special servicing, a senior manager from PGIM RE's Atlanta office who has extensive industry experience and company tenure. This senior employee reports to the head of asset management (Surveillance/FHA).

Table 5

Years of Industry Experience/Company Tenure(i)								
	Senior managers		Middle managers		Asset managers		Staff	
	Industry experience	Company tenure	Industry experience	Company tenure	Industry experience	Company tenure	Industry experience	Company tenure
Primary/Master	33	15	19	12	N/A	N/A	13	7
Special	39	19	N/A	N/A	39	19	N/A	N/A

(i)As of Jun. 30, 2022

Although there is only one employee dedicated to special servicing, this individual works closely with and is supported by PGIM RE for important special servicing tasks, including real estate-owned (REO) asset accounting when needed. According to PGIM RE Loan Services, it can readily add special servicing staff if needed by adding experienced employees from PGIM RE's origination department and PGIM RE Loan Services' asset management teams. In our opinion, PGIM RE Loan Services benefits from the flexibility afforded by organizational depth; however, a decentralized structure, while suitable for the current special servicing portfolio, is not suitable for high-volume special servicing portfolios.

During 2021, when many ranked servicers experienced elevated levels of turnover, PGIM RE Loan Services' 10.5% overall turnover rate (11.1% excluding PGIM Ireland staff) was in line with previous years and lower than ranked peers. During the first half of 2022, the combined primary and master turnover rate was 8.7% (11.3% excluding PGIM Ireland staff) which, though elevated compared to 2021, is in line with the turnover of ranked peers. We note, however, that despite the low to moderate overall turnover rates, seven senior and middle managers left the company since our last review including the vice president of asset management, the director who oversaw high yield servicing, and the general counsel. There was no turnover in the small special servicing group since our last review.

Training

PGIM RE Loan Services provides its management and staff with a variety of ongoing, formal internal and external training. It has established annual training targets of 40 hours for employees with less than three years of tenure and 30 hours for all other employees. Servicing employees averaged 60 hours and 31 hours of training, respectively, during 2021 and in the first half of 2022.

Other aspects of PGIM RE Loan Services' staff training program include that:

- The myLearning training system allows employees to personalize their training experience, providing a wide variety of training topics and pathways to improve skillsets. The system also allows social learning through the creation of training groups and the ability to follow a colleague in the system to see their training.
- Employee training hours are tracked through the training system.
- The business strategy and support department coordinates additional instructor-led cross training and virtual industry, soft skills, process, and technology training.
- PGIM RE Loan Services actively participates in various employee training and development initiatives offered by the Mortgage Bankers Association (MBA), Fannie Mae, Commercial Real Estate Women, the Commercial Real Estate Finance Council, and other industry organizations. Several senior members of the team also maintain the MBA's commercial certified mortgage servicer designation.

- As part of a large organization, PGIM RE Loan Services employees are required to take regular regulatory and compliance training courses, including privacy and information security awareness, anti-money laundering, and preventing workplace discrimination and harassment.

Systems and technology

PGIM RE Loan Services has effective technology to meet its primary, master, and special servicing requirements. The company continues to focus on technology enhancement projects to further streamline and automate servicing tasks across various loan administration functions. A dedicated technology staff of approximately 20 full-time employees support PGIM RE Loan Services and PGIM RE's origination platform. PFI has well-designed data backup routines and disaster recovery preparedness.

Servicing system applications

PGIM RE Loan Services' key systems include:

- McCracken's Strategy (Strategy) version 19D, a third-party loan accounting and servicing system used as the main system of record. PGIM RE Loan Services participates in and chairs McCracken's user feedback committees;
- LoanConnect, a proprietary pipeline and asset management system that PGIM RE uses to manage loans from origination through payoff. PGIM RE Loan Services uses LoanConnect to help manage servicing and asset management activities, including insurance, special servicing business plan management, and loan trigger monitoring;
- BorrowerConnect, a secure website for borrowers to access loan balance and payment information, billing statements, loan documents, and forms as well as submit requests to their PGIM RE Loan Services contact;
- DataConnect, a proprietary data warehouse containing data from the asset management and servicing systems for ad hoc reporting;
- IBM Content Manager, a document imaging and management system allowing users to search for documents by loan name, loan number, property name, etc.;
- InvestorView, a secure website for investors, rating agencies, and special servicers to access loan and portfolio information;
- PruXchange, a secure web portal used for exchanging documents with internal/external parties and tracking and managing loan documents;
- Microsoft Power BI, a reporting platform used for dashboard reporting and performing ad hoc queries using DataConnect; and
- myLearning, a third-party training system allowing employees to personalize their training experience.

PGIM RE Loan Services continues to enhance its systems and technology environment. Since our last review, PGIM RE Loan Services automated credit facility tracking and reporting and enhanced BorrowerConnect allowing users to more easily submit documents and requests to the proper PGIM RE Loan Services contact. Also, since our last review, PGIM RE Loan Services created property and tenant Power BI dashboards that utilized data from a data lake, a data repository that can accommodate both structured and unstructured data, from both the equity and the debt sides of

the business. Finally, PGIM RE began the process of modernizing LoanConnect including moving system servers to the Cloud.

Business continuity and disaster recovery

PFI maintains thorough disaster recovery (DR) and business continuity (BC) plans. PFI leverages its multiple data centers and Cloud solutions for data back-up and recovery. DR protocols for PFI's network and key systems include daily data tape backups and hourly server replication from the primary to the back-up data center. All internally developed applications, including LoanConnect and DataConnect, are housed at a production data center and replicated hourly to back-up data centers that are more than 25 miles from the production data center. PFI data centers have received tier III certification from the Uptime Institute, an advisory organization providing independent DR certification. This is the second-highest tier on its four-tier scale. The last corporate full systems test conducted in January 2021 cited no material issues. No test has been conducted in 2022 because PFI is in the process of moving its data centers to new locations. Management indicated that DR testing will resume in 2023. PGIM Real Estate Loan Services last conducted a seven-day failover test of its Mimix replication of the McCracken servicing system in November 2021 with no material items cited.

PFI maintains a centralized Enterprise Business Continuation Management (EBCM) group that develops standard operating procedures for BC across the company. EBCM oversees the BC plans of PFI's different business and corporate functions each of which must have a designated BC officer. PGIM RE Loan Services adjusted its BC plan after all of its employees were successfully able to work from home when its offices were almost entirely closed due to the COVID-19 pandemic. Since then, the company has maintained a remote work environment allowing most of its employees to work from home up to three days a week and allowing certain employees to work entirely virtually. Because PGIM RE Loan Services already has a remote work culture, the BC plan was adjusted to call for all employees to work from home in the event of another disaster preventing employees from going to their designated office location.

Cybersecurity

The corporate information security office executes PFI's information security program. The program includes ongoing virus and malware protection and data loss prevention and monitoring tools with 24/7 incident response capabilities.

Other aspects of cybersecurity at PFI include that:

- A corporate password policy calls for quarterly password changes in accordance with the policy guidelines and connecting to the network requires two-factor authentication.
- Rotating vendors perform network and penetration testing annually. The last test was conducted in June 2022.
- Internal vulnerability scans occur daily for externally facing IP addresses and weekly for internal infrastructure.
- PFI maintains a documented patch management process and subscribes to alert/patch notification services for all major vendors. System patch deployment occurs monthly at a minimum; however, patches can be escalated and deployed within 24 hours in a "code red" situation.
- PGIM RE Loan Services' business support department reviews and recertifies user access to servicing systems annually.
- Employees receive regular phishing simulation training emails to increase awareness on phishing attacks.

- PGIM RE receives electronic and computer crime policy insurance coverage through its Mortgage Bankers Bond policy.

Internal controls

PGIM RE Loan Services maintains strong internal controls, including policies and procedures (P&Ps), a thorough quality assurance program, internal audits, and frequent external audits.

Policies and procedures

PGIM RE Loan Services' P&Ps are accessible via LoanConnect's user documentation module, and each P&P has a designated owner who is a subject-matter expert. The appropriate department reviews company P&Ps at least every two years. While we note that most of PGIM RE Loan Services' peers review their P&Ps annually, we believe that PGIM RE Loan Services' P&Ps are comprehensive and well-written.

Quality assurance

As a part of its first line of defense, PGIM RE Loan Services maintains a proactive and diligent quality assurance program to measure regulatory compliance (e.g., compliance with the Sarbanes-Oxley Act [SOX], Regulation AB [Reg AB], HUD etc.), adherence to servicing agreements and P&Ps, timeliness, and accuracy. The business strategy and support department tracks more than 250 separate metrics on a monthly basis and continuously performs testing and process monitoring. Results are reported monthly to senior management and are available for employees to review in LoanConnect. The business and strategy support department also conducts separate quarterly control testing on a sample of loans from the HUD portfolio which is reviewed and signed off on by senior managers.

PFI's compliance department administers PGIM RE Loan Services' second line of defense which provides expertise, support, monitoring and testing and learning on risk related matters.

Internal and external audits

PGIM RE Loan Services' third line of defense is provided by PFI's internal audit department. PFI has a large internal audit group with 25 members dedicated to PGIM. A separate PFI dedicated group performs annual SOX compliance testing. The internal audit group includes subject matter experts, and certain audits are co-sourced with external parties when additional expertise is needed. The internal audit department is independent from the business unit and reports to the audit committee of the board of directors.

The internal audit group conducts an annual risk assessment evaluating each business unit's inherent risk and control effectiveness. PGIM RE Loan Services had been found to have a moderate level of inherent risk with a high level of control effectiveness. PGIM RE Loan Services indicated that they are audited every 12 months though the frequency of audits can vary based off the annual risk assessment. Internal audits are more targeted on specific processes than in the past and not all audits focus directly on PGIM RE Loan Services. Level 1 audits involve direct coverage of PGIM RE Loan Services, Level 2 audits occur at the PGIM Real Estate level and only indirectly cover PGIM RE Loan Services, and Level 3 audits are at the PGIM level. The internal audit rating scale is Satisfactory, Satisfactory with Limited Exceptions, Partially Satisfactory, and Unsatisfactory.

Year to date in 2022, the internal audit group conducted several Level 3 audits, including services and GDPR privacy programs. Level 2 and Level 1 audits were conducted in 2021 covering PGIM Real Estate Information Technology and Information Systems and the QRR and watchlist processes, respectively. The Level 1 audit had no exceptions while the Level 2 audit had exceptions that were also noted in PGIM's SOC 1 report and have since been remedied.

PGIM RE Loan Services is subject to numerous external operational audits and reviews, including Reg AB audits, SOC-1 audits, CMBS master servicer reviews, and Ginnie Mae, Freddie Mac, and Fannie Mae audits. The Reg AB audit for the year-ended Dec. 31, 2021, reported no findings. PGIM RE Loan Services also received satisfactory results on its most recent Fannie Mae audit, conducted in 2021, with no issues noted. The 2022 Ginnie Mae audit also noted no issues, however, the 2021 Ginnie Mae audit and Freddie Mac Lender Assessment, noted one medium and two minor findings, respectively. Finally, the 2022 SOC audit noted two exceptions which had previously been identified by internal audit. Typically, all business departments meet to discuss the results of third-party audits and formulate corrective action plans to address any findings.

Vendor management

PGIM RE Loan Services engages outside vendors for various primary/master and special servicing tasks, including financial statement processing, property inspections, insurance, appraisals, legal services, and property taxes. PGI's enterprise vendor governance office (EVGO) must approve all new vendor relationships and review any existing vendor relationships when a material change occurs in the vendor's scope of work. The EVGO utilizes a risk-rating tool that evaluates key factors, including financial loss, information security, risk management, and regulatory compliance.

Each vendor is assigned an internal vendor process manager who helps oversee the relationship. The business strategy and support department reviews process managers to ensure that they are upholding monitoring plans for their respective vendors. The monitoring plans include validating work completed by vendors, performing periodic quality control testing, holding periodic calls with vendors, and reviewing invoices.

Special servicing maintains approved vendor lists for appraisers, engineering and environmental firms, and attorneys. A separate group within PGIM RE closely monitors the performance of engineering and environmental firms.

Insurance and legal proceedings

PGIM RE Loan Services 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 the date of this report, there were no material servicing related pending litigation items.

Loan Administration – Primary Servicing

The loan administration subranking is STRONG for primary servicing.

Since our last review, PGIM RE Loan Services' primary servicing portfolio has grown steadily by UPB while loan count has remained relatively flat (see table 6), although each of UPB and loan count has remained largely flat during the first six months of 2022. The portfolio has a high level of geographic diversity and contains all major collateral property types, though there is a relatively high concentration of multifamily properties and properties located in California (see table 3). The servicing team has demonstrated experience with loans from a variety of different capital sources (see

table 4). The delinquency rate has remained low for the past five years, with a slight uptick during 2020 pertaining to COVID-19 related issues (see table 6).

Table 6

Primary Servicing Portfolio										
	June 30, 2022		Dec. 31, 2021		Dec. 31, 2020		Dec. 31, 2019		Dec. 31, 2018	
	UPB (mil. \$)	No.	UPB (mil. \$)	No.	UPB (mil. \$)	No.	UPB (mil. \$)	No.	UPB (mil. \$)	No.
Primary loans	111,726.5	4,394	110,849.3	4,396	103,490.7	4,315	96,851.4	4,253	87,899.6	4,123
Average loan size	25.4	--	25.2	--	24.0	--	22.8	--	21.3	--
Delinquent (%)										
30 days	0.0		0.0		0.1		0.0		0.0	
60 days	0.0		0.1		0.4		0.0		0.0	
90+ days	0.1		0.1		0.3		0.1		0.1	
Total	0.1		0.2		0.7		0.1		0.2	

Totals may not add due to rounding. UPB--Unpaid principal balance.

New loan boarding

Based on its stated practices and written procedures, PGIM RE Loan Services has an effective loan set up function. Control and other features of new loan setup include that:

- PGIM RE Loan Services boarded 270 loans during the first half of 2022 and 774 loans during 2021. Though it appears as of mid-year 2022 PGIM RE Loan Services was not on pace to board as many loans as the prior year, we note that PGIM RE Loan Services boarded a relatively high amount of loans in 2021 as compared to 2020 and 2019.
- A LoanConnect interface exports key loan data after loan closing to Strategy. LoanConnect is also used by PGIM RE's origination team.
- A servicing analyst reviews data imported automatically into Strategy and manually inputs any additional data if necessary.
- A second analyst performs a secondary review before the loan is passed to the Strategy production environment.
- Loans are targeted to be passed into production within two days of closing.
- Borrower welcome letters are issued within a few days of closing, although PGIM RE Loan Services has 15 days to issue welcome letters according to the service level agreement.
- The business strategy and support department utilize accuracy metrics to track data integrity.
- As of mid-year 2022, there were no trailing documents on loans boarded more than six months ago.

Payment processing

PGIM RE Loan Services' practices and integrated technology tools efficiently address payment processing for cash-managed and other complex loan structures with proper segregation of duties. Highlights of payment processing include that:

- As of June 30, 2022, approximately 99% of payments were processed electronically through a bank lockbox and automated clearing house.

- Accounting personnel reconcile payments posted on Strategy against the general ledger daily.
- Servicing personnel perform regular adjustable-rate audits.
- PGIM RE Loan Services continues to manage the transition away from LIBOR. To date, 140 loans tied to SOFR have been funded and 17 loans have been transitioned from LIBOR to SOFR. The company plans to transition the remaining LIBOR based loans to SOFR in the first half of 2023.
- The servicing department monitors suspense accounts daily. As of June 30, 2022, the number of items in its suspense accounts aged more than 90 days (excluding special servicing loans) was 16 which was not out of line with ranked peers.

Investor reporting

PGIM RE Loan Services is highly experienced with CMBS, GSE, and customized third-party reporting requirements. Investor reporting and operational accounting activities are properly segregated for reporting, remitting, and related account reconciliation processes. Other highlights include that:

- Investor reports for the variety of different investor types are generated directly from LoanConnect and Strategy.
- Monthly bank account statements are uploaded to LoanConnect for account reconciliation, which require review by a senior manager.
- The accounting area is responsible for releasing payments to trustees and investors via wire transfer.
- Disbursements are administered through LoanConnect. After setup, a designated approver must review and authorize the disbursement.
- PGIM RE Loan Services indicated that there were no remittance or reporting errors causing investor reporting re-calculation or restatement in 2021 and the first half of 2022

Escrow administration

PGIM RE Loan Services has effective controls for escrow administration activities. The servicing department administers tax and insurance activities covering all portfolios. It is assisted by a tax service vendor and a third-party vendor in India that performs insurance data entry. Key features of escrow administration include that:

- As of June 30, 2022, 35% of loans in the servicing portfolio were escrowed for taxes, and 60% were escrowed for insurance.
- A servicing analyst reconciles a tax report from Strategy against the vendor's system for loans with tax payments due within the next 30 days.
- Tax payments are wired to the vendor for payment to the tax authority after approval from the vice president or director of servicing.
- PGIM RE Loan Services reported a minimal amount of tax penalties during the first half of 2022 and none in 2021.
- Insurance notices are issued 45 and 10 days before expiration with demand letters and the threat of force-placed insurance issued 10 days post-expiration via certified mail.
- The insurance module in LoanConnect provides significant event reporting (i.e., from natural disasters) on properties in affected areas in accordance with the specifications outlined by the MBA.
- The insurance analyst reviews life-of-loan flood insurance certifications at loan setup and reviews flood coverage

and map changes annually.

- PGIM RE Loan Services force-placed policy provision has a 365-day look-back period for all perils other than flood coverage, which has a 120-day look-back provision, an increase from the time of our last review. There were four loans on force-placed coverage as of June 30, 2022.

Asset and portfolio administration

PGIM RE Loan Services has extensive procedures covering asset and portfolio administration tasks. The asset management department, with the assistance of the offshore team and a vendor, performs asset and portfolio administration on the servicing portfolio.

PGIM RE Loan Services outsources most of its property inspections to third-party vendors and requires annual inspections for all properties regardless of loan size. Inspection reports are uploaded to and deferred maintenance items are centrally tracked in LoanConnect for follow-up. Of the 708 property inspections performed on the portfolio in the first half of 2022, 5% were received 30 days past the due date, a higher percentage of late inspections reported than ranked peers.

System triggers capture borrower loan covenants in LoanConnect, which are monitored by asset management throughout the loan's term. On PGIM RE originated loans, PGIM RE Loan Services works with the origination team to standardize loan covenant terms and reporting to ease tracking and compliance.

PGIM RE Loan Services has well-defined P&Ps for portfolio surveillance. Property-level operating statements and rent rolls are collected, inputted, and analyzed with vendor assistance. Since our last review, the vendor has started to use an optical character recognition tool to automate some of the financial statement input process. By mid-year 2022, asset management received and analyzed 80% of the portfolio's year-end 2021 operating statements, a lower percentage reported than most of its ranked peers. Management noted that some borrowers have mid-year year-ends and the financials for those loans had not been collected yet. Also, to a lesser extent, there was some turnover in borrower contacts leading to delays in receiving year-end operating statements. As of year-end 2021, PGIM RE Loan Services collected and analyzed 95% of the previous portfolio's year-end operating statements indicating that collected and analyzed rates will increase by year-end 2022.

Watchlists are generated in LoanConnect for different loan investor types based on predetermined criteria. Asset managers review watchlist loans, provide commentary, and escalate loans to portfolio managers as necessary. Once performance has improved, the asset manager recommends removing the loan from the watchlist, and the loan is then reviewed per PGIM RE Loan Services' delegation of authority (DOA).

The servicing team monitors Uniform Commercial Code (UCC) administration using Strategy and LoanConnect. PGIM RE Loan Services has approximately 4,000 loans that require UCC filings and reported no lapsed refilings during the first six months of 2022 or in 2021.

Borrower requests

PGIM RE Loan Services addresses borrower requests in a proactive manner.

The asset management department handles any borrower requests with credit implications, and the servicing

department handles all other requests. PGIM RE Loan Services processed seven assumptions, 113 leasing consents, 57 property releases, 21 defeasance requests, 20 property management changes, one substitution of collateral, and 94 that fall into the "other" category during the first half of 2022. The asset manager completes a case plan for any request with credit implications, which must be approved per the internal DOA.

PGIM RE Loan Services emphasizes customer satisfaction and maintains a committee to develop best practices for all customer interactions. The company distributes borrower satisfaction surveys for the entire portfolio and evaluates and tracks the results. Management indicated that the servicing team maintained high and stable customer satisfaction ratings throughout the pandemic.

Early-stage collections

PGIM RE Loan Services' early-stage collections procedures are thorough. Features include that:

- The servicing department handles early-stage collections up to the 30th day of delinquency. After the 30th day, the loan is transferred to the asset management team for increased attention and review, except in the case of HUD loans, which are transferred directly to the Federal Housing Administration.
- Borrowers are called two days after the due date or expiration of the grace period if the payment is not received.
- Written notices are system-generated and sent 10 days after the payment due date.
- Collection comments are centrally stored in LoanConnect.

Loan Administration – Master Servicing

The loan administration subranking is AVERAGE for master servicing.

We based our subranking on PGIM RE Loan Services' P&Ps for subservicer oversight, prudent advancing procedures, and its ability to utilize primary servicing staff if there is any increase in the master servicing portfolio (due to shared skill sets). As of June 30, 2022, PGIM RE Loan Services served as a CMBS master or combined primary/master servicer on only nine loans aggregating \$25.3 million in UPB, as compared to 20 loans and \$96.1 million in UPB at the time of our last review. PGIM RE Loan Services does not have any CMBS loans where it is only the master servicer, and therefore, has no CMBS primary servicer oversight responsibilities. However, it has certain subservicer oversight responsibilities on some non-CMBS loans, mostly in its agriculture portfolio in conjunction with PFI agricultural field offices, though there are also a few affiliated B-notes or co-investments where another company is the servicer (see tables 2 and 7 for the subserviced loan portfolio).

Table 7

Master Servicing Portfolio										
	June 30, 2022		Dec. 31, 2021		Dec. 31, 2020		Dec. 31, 2019		Dec. 31, 2018	
	UPB (mil. \$)	No.	UPB (mil. \$)	No.	UPB (mil. \$)	No.	UPB (mil. \$)	No.	UPB (mil. \$)	No.
Master (SBO) loans	1,291.4	137	1,319.4	152	1,160.2	184	1,479.2	239	1,532.8	268
Subservicers	--	18	--	17	--	15	--	15	--	19
Average loan size	9.4	--	8.7	--	6.3	--	6.2	--	5.7	--

Table 7

Master Servicing Portfolio (cont.)										
	June 30, 2022		Dec. 31, 2021		Dec. 31, 2020		Dec. 31, 2019		Dec. 31, 2018	
	UPB (mil. \$)	No.	UPB (mil. \$)	No.	UPB (mil. \$)	No.	UPB (mil. \$)	No.	UPB (mil. \$)	No.
Delinquent (%)										
30 days	0.0		0.0		0.0		0.0		0.0	
60 days	0.0		0.0		0.0		0.0		0.0	
90+ days	0.0		0.0		0.0		0.0		0.0	
Total	0.0		0.0		0.0		0.0		0.0	

Totals may not add due to rounding. SBO--Serviced by others. UPB--Unpaid principal balance. Though PGIM RE Loan Services does not have any CMBS subservicer oversight; it performs consolidated reporting; approves credit actions; and reviews taxes, insurance, and UCCs as a master servicer for certain loans in its agriculture portfolio.

Subservicer accounting and reporting

PGIM RE Loan Services has the resources and procedures in place to monitor and aggregate remittances from subservicers and provide consolidated reporting. It currently only monitors payments from agricultural subservicers.

Subservicer oversight

Escrow administration

According to PGIM RE Loan Services' P&Ps, subservicers must submit quarterly reports on tax and insurance payments. The subservicer must provide documentation on the most recent escrow analysis and the current payment due dates as part of PGIM RE Loan Services' desktop review process. Quarterly reports from subservicers are reviewed by collateral management to ensure that all taxes and insurance are current and to ensure that insurance coverage is adequate.

Asset and portfolio administration

Subservicers are required to submit quarterly reports on UCCs to the collateral management group and property and borrower financials to the surveillance group. The servicing department reviews the information from the subservicer.

Audit and Compliance

According to P&Ps as a master servicer, PGIM RE Loan Services will conduct a desktop or on-site audit of subservicers that service more than 20 loans. All other subservicers must provide quarterly reports and provide annual USAP/RegAB attestations. PGIM RE Loan Services did not conduct any subservicer audits in 2021 or the first half of 2022.

Investor reporting, CMBS advancing, and special servicer interaction

An advancing review committee comprised of senior management meets monthly to make advance recoverability determinations based on several factors, including the total outstanding UPB of, collateral value of, and remaining assets in the securitization. The advance limit is 36% of the most recent appraised value for CMBS loans, though the advancing review committee will evaluate each unique situation and adjust as necessary. An advancing report is prepared and reviewed by the committee. The accounting team reconciles the general ledger against reported

advances, tracks the aging of advanced funds, and establishes reserves as necessary.

PGIM RE Loan Service communicates with external special servicers to discuss any problematic loans in its small CMBS portfolio.

Loan Administration – Special Servicing

The loan administration subranking is ABOVE AVERAGE for special servicing.

PGIM RE Loan Services has a lengthy track record of successfully managing and disposing troubled assets nationwide, though resolution activity in recent years has been relatively modest (see table 9). PGIM RE Loan Services manages special servicing from Dallas and another PGIM RE office in Atlanta. As of June 30, 2022, the active special servicing portfolio contained general account, GSE, and life insurance company loans collateralized by retail, office, and multifamily properties. PGIM RE Loan Services is no longer the named special servicer on any CMBS loans.

We believe that, despite PGIM RE having only one employee fully dedicated to special servicing, staffing is adequate given a portfolio of only six loans in special servicing as of June 30, 2022. When needed, management noted, PGIM RE Loan Services can draw resources from PGIM RE, including its originations team.

Loans with a risk rating of "closely monitored" or "not in good standing" are sent to special servicing for oversight. Closely monitored loans are included on the special servicing department's watchlist due to at least one of seven factors, including a high loan-to-value ratio or low debt service coverage, an uncooperative borrower, loans with a large insurance loss, and the breach of a material loan covenant. Loans in default or that have an established loss reserve are classified as "not in good standing". As of June 30, 2022, only one of the six loans was "not in good standing".

Table 8

Special Servicing Portfolio															
	June 30, 2022			Dec. 31, 2021			Dec. 31, 2020			Dec. 31, 2019			Dec. 31, 2018		
	UPB (mil. \$)	No.	Avg. age (i)	UPB (mil. \$)	No.	Avg. age (i)	UPB (mil. \$)	No.	Avg. age (i)	UPB (mil. \$)	No.	Avg. age (i)	UPB (mil. \$)	No.	Avg. age (i)
Active inventory															
Loans	284.3	6	12.7	326.5	7	11.8	411.3	9	7.8	44.3	5	13.2	99.0	8	15.5
Real estate owned	0.0	0	N/A	0.0	0	N/A	0.0	0	N/A	0.0	0	N/A	0.0	0	N/A
Total	284.3	6	12.7	326.5	7	11.8	411.3	9	7.8	44.3	5	13.2	99.0	8	15.5

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

Loan recovery and foreclosure management

PGIM RE Loan Services displays effective and proactive loan recovery and foreclosure management protocols to efficiently resolve nonperforming loans across a variety of different property types. Highlights include:

- The company has detailed procedures for monitoring potential problem assets and compiling resolution strategies.

- Borrowers are required to sign pre-negotiation agreements before PGIM RE Loan Services will enter into workout discussions.
- Loan business plans (known internally as asset strategy reports) are completed in the time frame outlined in the servicing agreement but at any event no longer than 60 days.
- Asset strategy reports include a description of the property, review of the borrower/guarantor, cash flow analysis, and net present value analysis of different resolution strategies.
- Key decisions require sign-off from PGIM RE Loan Services, PGIM, and PGIM RE management through a DOA matrix outlined in the business plans.
- A risk committee comprised of senior managers from PGIM meets quarterly to review specially serviced assets and associated asset strategy reports as presented by the asset manager. Asset managers must complete a foreclosure asset strategy report that includes a foreclosure bid worksheet and post-REO book value to determine bid price and request approval per the DOA.
- Prior to foreclosure, the asset manager begins interviewing possible property managers and makes a recommendation based on property type and location.

During 2021 and the first half of 2022, the special servicing group resolved 10 loans. There were two returned to master, five full payoffs, two foreclosures, and one discounted payoff/note sale (see table 9).

Table 9

Total Special Servicing Portfolio--Loan Resolutions															
	2022(ii)			2021			2020			2019			2018		
	UPB (mil. \$)	No.	Avg. age(i)	UPB (mil. \$)	No.	Avg. age(i)	UPB (mil. \$)	No.	Avg. age(i)	UPB (mil. \$)	No.	Avg. age(i)	UPB (mil. \$)	No.	Avg. age(i)
Resolutions															
Loans	213.4	4	16.3	135.4	5	9.9	58.2	6	17.8	76.2	5	22.0	47.0	8	22.7
Foreclosed loans	0.0	0	N/A	25.0	2	11.7	0.0	0	N/A	0.0	0	N/A	0.0	0	N/A
Total	213.4	4	16.3	160.4	7	10.4	58.2	6	17.8	76.2	5	22.0	47.0	8	22.7
Resolution breakdown															
Returned to master	204.0	3	21.0	0.0	0	N/A	30.3	4	12.7	30.5	3	21.9	38.7	7	25.7
Full payoffs	9.4	1	2.3	131.5	4	8.5	7.9	1	15.6	0.0	0	N/A	8.3	1	1.8
DPO or note sale	0.0	0	N/A	3.9	1	15.5	19.9	1	40.2	45.7	2	22.1	0.0	0	N/A
Foreclosed loans	0.0	0	N/A	25.0	2	11.7	0.0	0	N/A	0.0	0	N/A	0.0	0	N/A
Total/average	213.4	4	16.3	160.4	7	10.4	58.2	6	17.8	76.2	5	22.0	47.0	8	22.7

Totals may not add due to rounding. (i)Avg. 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. (ii) Data only includes the first six months of the year.

REO management and dispositions

PGIM RE Loan Services maintains P&Ps that describe proactive REO management and sales oversight even though it has not handled any REO dispositions recently. Notable aspects include that:

- REO business plans, known internally as property strategic plans (PSPs) are typically completed within 60 days of title transfer and are prepared by the same asset manager who worked on the asset before foreclosure.
- PSPs focus on active property management, marketing strategy, ongoing operations, and the capital budget.
- An REO committee comprising the PGIM RE Loan Services vice president of asset management and relevant PGIM RE portfolio manager (at a minimum) meets quarterly to review progress on REO assets as presented through PSPs.
- Asset managers must obtain a proposal from at least two possible brokers before listing the property for sale.

PGIM RE Loan Services has historically had a low volume of REO assets and sales. The company completed its last REO sale in 2015. In accordance with the industry standard, PGIM RE Loan Services does not handle any GSE REO dispositions.

REO accounting and reporting

PGIM RE Loan Services controls and procedures for property-level accounting and oversight are sound according to its P&Ps.

Third-party property managers prepare monthly reporting packages that include income statements, balance sheets, bank account reconciliations, and rent rolls. PGIM RE Loan Services has a standard contract to engage approved property managers, who typically present an operating budget for approval within 60 days of the asset becoming REO. The PGIM RE finance group then reviews the reporting package and communicates with the special servicing asset manager as necessary. Separate receipt and disbursement accounts for incoming rents and outgoing expenses are used, which we view favorably.

The special servicing asset manager keeps PGIM RE Loan Services' management and the PGIM RE finance group up to date on REO assets by providing various operating and sales reports from the property management and brokerage firms.

Legal department

Special servicing operations are supported by one in-house attorney from the PGIM Real Estate Debt Law department. A list of approved third-party law firms is maintained on LoanConnect, and asset managers utilize standard engagement letters when hiring outside counsel. The asset manager consults PGIM RE Loan Services' legal counsel division to assist in estimating legal costs before commencing foreclosure or other legal action. Asset managers review legal bills before authorizing payment. Overall, we believe that PGIM RE Loan Services' legal function is adequately controlled.

This report does not constitute a rating action.

Related Research

- Select Servicer List, Oct. 13, 2022
- Servicer Category Descriptions Expanded And Revised, Feb. 28, 2022

- Prudential Financial Inc., Dec. 8, 2021
- Servicer Evaluation: PGIM Real Estate Loan Services Inc., Feb. 19, 2021
- Servicer Evaluation Spotlight Report™: Environmental, Social, And Governance Factors Have Consistently Powered Our Servicer Evaluation Rankings, Nov. 16, 2020
- Analytical Approach: Global Servicer Evaluations Rankings, Jan. 7, 2019

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