FitchRatings

PNC Bank, National Association

Ratings[a]

Commercial Master Servicer	CMS2+
Commercial Primary Servicer	CPS2+
Commercial Special Servicer	CSS2+

[a]Last Rating Action: Affirmed Jan. 4, 2024

Rating Outlooks[b]

Commercial Master Servicer	Stable
Commercial Primary Servicer	Stable
Commercial Special Servicer	Stable

[b]Rating Outlooks assigned Jan. 4, 2024.

Applicable Criteria

Criteria for Rating Loan Servicers (December 2022)

Criteria for Rating North American Commercial Mortgage Servicers (December 2022)

Related Research

Fitch Affirms PNC Bank's Commercial Servicer Ratings (January 2024)

Fitch Affirms PNC Financial Services Group, Inc. at 'A+'; Outlook Stable (October 2023)

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PNC Bank, National Association's commercial real estate (CRE) servicing platform does business as Midland Loan Services (Midland, or the company) and is the commercial mortgage servicing division of PNC Bank, N.A. (PNC). Midland maintains diversified primary, master and special servicing portfolios, with a primary and master portfolio totaling $569.4 billion (down from $627.6 billion the prior year) as of June 2023, of which $244.4 billion comprises nonsecuritized loans on behalf of institutional investors (57% by loan count), agency (19%) and life company clients (23%), among others. The company's securitized servicing portfolio of master servicing for 486 transactions represents $311.0 billion of securitized multiborrower, single-asset–single-borrower (SASB), agency and single-family rental (SFR) transactions as of June 2023.

Midland also provides third-party servicing through its shared services program for PNC Agency Finance and a specialty finance CRE originator and servicer whose portfolios collectively represented $120.0 billion and 5,262 loans as of March 2023. The company also provides servicing technology services through its Enterprise!SM loan management (Enterprise!) system to approximately 16 clients with a cumulative balance of $1.5 trillion and more than 110,000 loans as of June 2023, excluding its own portfolio.

As of June 2023, Midland was named special servicer for 428 securitized transactions totaling $184.7 billion, comprised of multiborrower (40% by count), alternative ABS (27%), SFR (21%), SASB (9%) and CRE-CDOs (1%). It was named special servicer for 45 new securitizations during the 12 months ended in March 2023, including 20 SFR, seven SASB, five multiborrower and 13 alternative ABS transactions. Also during the same time period, Midland resolved 104 securitized loans totaling $1.9 billion, of which 52 loans were returned to the master servicer as corrected loans, 20 loans were paid in full, 28 were discounted payoffs/note sales and four were real estate-owned (REO) sales.

Servicer Ratings

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

Key Rating Drivers

Company/Management: While predominately a third-party servicer, Midland is considered an important component in maintaining a moderate risk profile and diverse revenue stream for PNC Bank. The company provided material servicing support for several PNC affiliates for more than 3,500 loans totaling $40.8 billion as of June 2023. PNC provides capital to support Midland's investment in commercial and multifamily mortgage servicing rights, funding for advances and significant infrastructure and support services, including legal, technology, human resources, finance, compliance and risk management. PNC has dedicated capital and technology resources to a multiyear project to enable Midland's infrastructure to support more dynamic enhancements and modernize Enterprise! The company made material progress on the project during 2023.

Staffing and Training: As of June 2023, Midland maintained a total servicing staff across primary, master and special servicing of 520 employees, consistent with the prior year, as the company actively replaced employee departures and rebalanced employee allocations between primary/master and special servicing in response to changes in the portfolio. The majority of employees are fully dedicated to supporting servicing functions and are located in Overland Park. Turnover among primary/master servicing employees declined materially to 11% for the 12 months ended in June 2023, from 20% the prior year. Notwithstanding turnover, 17 employees were added to support primary servicing through new hires and internal transfers, the majority of which were staff level.

Turnover within the special servicing group remained high for the second consecutive year, increasing to 51% during the 12 months ended in June 2023, from 38% the prior year. Excluding internal transfers, turnover was 32%. Fitch noted that the number of special servicing employees had decreased by 26% since the prior review, due largely to an 18% decline in the number of named and a 38% decline in active specially serviced loans. As of the same date, Fitch identified 12 special servicing employees as asset managers who averaged 17 years of industry experience and nine years of tenure. The ratio of assets to asset managers increased to 15:1 from 10:1 in the prior period, although the portfolio includes 16 loans of less than $3.0 million that are secured by SFR assets. Turnover among asset managers was 56% during the 12 months ended in June 2023, an increase from 24% the prior period.

In 2022, primary/master servicing employees completed approximately 61 hours of training, while special servicing employees completed 51 hours. Through 2023, Midland transitioned from a formal hourly training requirement for employees in favor of measuring learning completions.

Technology: Midland utilizes Enterprise! as its primary servicing system, as well as several proprietary support applications and, as of March 2023, it was using Enterprise! version 20220.4.62. Special servicing asset management and performing loans surveillance functions are performed within AM Insight℠, a proprietary asset management module of Enterprise! that is exclusive to Midland.

The company is in year four of a multiyear initiative to modernize its technology platform and has increased the cadence of technology enhancements through quarterly releases. Recent technology enhancements include full implementation of a new client portal for borrowers with significantly improved functionality, allowing for better workflow management and self-service options. Midland has also made technology enhancements to its investor reporting, cash management and insurance administration functions, and it now uses document automation tools to support financial statement, rent roll and insurance ACORD 25 data extraction and analysis. No enhancements have been made to technology supporting special servicing functions for several years and none are currently planned.

Procedures and Controls: Midland maintains high-level servicing policies supplemented by detailed desktop procedures that are updated annually. The internal control infrastructure consists of a dedicated risk, compliance and quality assurance group (RCQ) that is responsible for maintaining over 200 comprehensive internal servicing controls, the coordination of annual internal audits from PNC and external audits, among other responsibilities.

Midland has had three consecutive years of clean Regulation AB (RegAB) audits and continues to make progress toward remediating internal control deficiencies. Recent internal audits have resulted in satisfactory opinions, with no material findings pertaining to servicing functions. Fitch found that Midland's quality control framework, inclusive of dedicated and independent compliance testing, clearly identified controls and demonstrates robust monitoring and reporting consistent with best practices.

Company Experience Since:

CRE Servicing	1991
CMBS Servicing	1992
Overseeing Primary Servicers	1992
CRE Loan Workout	1991
CMBS Workout	1992

Source: Midland Loan Services

Operational Trends

Business Plan	■	Stable business plan with steady flow of new business offsetting portfolio declines
Servicing Portfolio	▼	Less than 10% year-over-year growth by loan count or runoff in the portfolio
Financial Condition	■	Stable Rating Outlook
Staffing	■	Staffing changed less than 12% +/–
Technology	▲	Improving technology
Internal Controls	■	Stable control environment; no material audit findings
Servicing Operations	■	Stable operations; no material changes year-over-year

Source: Fitch Ratings

Most Recent Management Meeting:

Aug. 16–17, 2023	Overland Park, KS

Financial Condition: Fitch maintains Long-Term and Short-Term Issuer Default Ratings (IDRs) for The PNC Financial Services Group, Inc. and its primary operating subsidiary, PNC Bank, N.A., of 'A+'/'F1' with a Stable Rating Outlook.

Loan Administration: Midland does not maintain separate primary and master servicing teams, as servicing functions are performed by distinct servicing operations and servicing solutions groups. The company leverages technology to integrate and monitor compliance with loan servicing functions and workflow processes. Midland utilizes more third-party vendor support than other Fitch-rated primary/master servicers to provide additional capacity.

While the company maintains oversight and quality control of outsourced functions, outsourcing includes some core functions, such as loan covenant testing, setup for cash-managed loans, SFR payoff calculations, loan conversions and borrower contact for consent requests and insurance verification.

Defaulted/Nonperforming Loan Management: Midland maintains a dedicated team of special servicing asset managers that has demonstrated proficiency in working out CRE loans through multiple cycles and managing REO assets. Special servicing business plans are reviewed and formally updated annually, consistent with industry best practices, and material decisions require the approval of a formal asset review working group. Asset managers utilize a proprietary asset management system built around its policies and procedures, with imbedded internal controls. A dedicated group of analysts monitors performing loans irrespective of Midland being the primary servicer, and additional staff are responsible for performing loan consents requests.

PNC REAL ESTATE

MIDLAND LOAN SERVICES

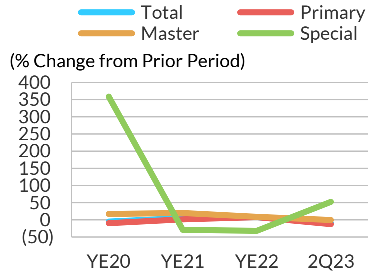
Company Overview

Servicing Portfolio Overview

($ Mil.)	6/30/23	% Change	12/31/22	% Change	12/31/21
Total Servicing					
UPB	569,359.5	–10	634,684.0	8	589,550.2
No. of Loans	21,691	–14	25,131	1	24,970
Primary Servicing					
UPB	439,526.4	–13	505,850.0	8	469,124.6
No. of Loans	16,329	–18	19,794	–1	19,921
Master Servicing					
UPB	310,995.5	–1	313,158.8	9	288,464.5
No. of Loans	12,859	–2	13,104	3	12,711
Special Servicing — Named					
UPB	185,353.5	–7	222,182.3	–1	224,665.3
No. of Loans	4,516	–34	6,884	–15	8,072
Special Servicing — Active[a]					
UPB	6,917.5	52	4,556.5	–32	6,674.6
No. of Loans	181	–5	191	–34	291

UPB – Unpaid principal balance
Source: Midland Loan Services

Servicing Portfolio



Note: Special servicing includes loans actively in special servicing (including REO). Total excludes special servicing.
Source: Midland Loan Services

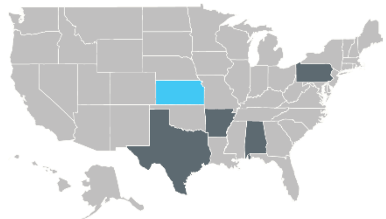
Midland, the commercial mortgage servicing division of PNC Real Estate, is considered an integral part of the business servicing PNC-originated loans and generating servicing revenue from PNC's diverse service and product lines. PNC Real Estate has more than 1,100 employees, inclusive of Midland, across the U.S., with approximately $35.9 billion in outstanding CRE exposure as of June 2023. PNC Real Estate funded $3.1 billion of agency originations in 2022 and $38.8 billion in CRE balance sheet and other originations. Other than Midland, PNC Real Estate business segments include real estate banking, agency finance and tax credit solutions.

Midland is considered an important component in maintaining a moderate risk profile and providing a diverse revenue stream for PNC Bank. Commercial loan servicing functions performed by Midland provide material support for several PNC business lines, including PNC balance sheet CRE lending, community development banking and new market tax credits, with PNC Agency Finance collectively representing more than 3,500 loans totaling $40.8 billion as of June 2023. Servicing functions performed by Midland vary from full primary servicing to payment processing, accounting and reporting with no borrower contact.

PNC provides capital to support Midland's investment in commercial and multifamily mortgage servicing rights, funding for servicing advances and significant infrastructure and support services, including legal, technology, human resources, finance, compliance and risk management to Midland.

As of June 30, 2023, Midland's $569.4 billion CRE servicing portfolio consisted of: $284.4 billion in CMBS, $138.4 billion for institutional clients, $50.0 billion in SFR, $25.0 billion in agency, $21.1 billion in government and $78.5 billion in alternative ABS (specialty finance and whole business securitizations). Included in Midland's servicing portfolio are 121 Canadian securitized loans representing $1.1 billion secured by collateral outside of the U.S. as of March 2023, along with 62 loans totaling $7.6 billion in various foreign countries.

Office Locations



Primary Office: Overland Park, KS

Midland receives special servicing assignments through its relationships with investors and provides due diligence services to subordinate investors. As a third-party servicer, changes in the special servicing portfolio are driven primarily by control shifts in securitized transactions as losses are incurred or controlling class holders' preferences.

Headquartered in Overland Park, KS, Midland maintains satellite offices in:

- Little Rock, AR (technology services);
- Birmingham, AL (investor reporting, asset management, operational accounting, covenant administration and CMBS servicing);
- Dallas, TX (investor reporting, asset management, covenant administration, agency servicing, interim servicing, collateral surveillance and reserve administration); and

All special servicing functions are centralized in Overland Park, although the number of remote employees has increased and includes two in Birmingham and one in Dallas.

Midland added satellite offices in Dallas, TX and Birmingham, AL to provide access to experienced servicing professionals outside of Kansas City, MO.

Financial Condition

On Oct. 16, 2023, Fitch affirmed the Long-Term and Short-Term IDRs of The PNC Financial Services Group, Inc. (PNC) and its primary operating subsidiary, PNC Bank, N.A., at 'A+'/'F1'. The Rating Outlook is Stable.

Key Rating Drivers

Ratings Affirmed: The affirmation of PNC's and PNC Bank, N.A.'s ratings reflects their solid operating performance, successful integration of BBVA USA and a diverse and growing business profile that will continue to support consistent results despite Fitch's reduction of the operating environment score for U.S. banks to 'aa–' from 'aa'. Moreover, Fitch continues to characterize PNC's risk profile as generally superior to those of most large regional banks and supportive of the bank's relatively high rating.

Strong Business Profile: Fitch views PNC's franchise as strong given its national and diversified business mix, solid deposit base and steady noninterest income. PNC is the sixth-largest bank by deposit market share, at 2.5% as of 2Q23, and is the fourth-largest by branch count, with 2,303 branches. PNC's branch footprint historically covered the Mid-Atlantic, Midwest and Southeast regions, but with the June 2021 acquisition of BBVA, it expanded to the Southwest and Western U.S. Full integration of BBVA's operations was completed in October 2021.

Superior Risk Profile: Fitch views PNC's risk profile as generally superior to those of most banks in its peer group given its robust risk controls and underwriting standards, which support its relatively high ratings. Fitch generally views PNC's underwriting standards as stronger than peers, as the bank focuses on lower-risk borrowers and segments. PNC's loan portfolio diversification by borrower, sector and geography is also high. This credit strength is reflected in PNC's most recent Dodd-Frank Act Stress Test (DFAST) results from the Fed, with the bank's projected portfolio loss rate under stress being the lowest among its peer group.

Solid Asset Quality Metrics: Similar to peers, PNC's credit quality remains strong. The bank has demonstrated measured growth and has strong underwriting practices, which have historically resulted in credit quality outperformance compared with large regional peers. PNC's impaired loans/gross loans ratio deteriorated slightly, to 1.15% as of 2Q23, although this ratio remained below its four-year average of 1.27% and well within the benchmarks for its 'a' category score. Fitch expects PNC's impaired loans ratio to remain relatively stable and credit costs to remain manageable in the context of earnings and capital given the bank's loan mix and conservative stance in underwriting.

Stable Earnings: PNC's operating profit to risk-weighted assets (RWAs) of 1.79% as of 1H23 was above its four-year average and in line with other large regional banks. Results continue to benefit from PNC's diversified sources of relatively steady revenue in Consumer, Corporate and Institutional Banking and Asset Management. PNC's net interest margin (NIM) has expanded, while its broad mix of noninterest income has yielded balanced income. Expenses remain fairly steady and closely managed, while credit losses are tracking below average. Fitch expects PNC's earnings to remain steadier than peers, aided by NIM expansion, continued revenue synergies and cost efficiencies gained in the 2021 BBVA USA acquisition.

Adequate Capitalization: PNC's common equity Tier 1 (CET1) ratio increased to 9.8% as of 3Q23, from 9.3% at 2Q22, exceeding the bank's long-term CET1 target of 8.5%–9.0%. Fitch assesses PNC's capital and leverage score at 'a–', above its implied 'bbb' category score, to account for the bank's conservative risk profile. In 2Q23, PNC paused its share repurchase program in response to market stress and pending regulatory capital requirements following a more aggressive approach in 2022. Based on its 3Q23 balance sheet, PNC estimates Basel III Endgame will reduce its CET1 ratio by 230-240 bps but expects it to be at or above 9.0% through the phase-in period. Its regulatory capital minimum is 7.0%.

Strong Liquidity: Fitch views PNC's liquidity and funding profile as among the strongest in its large regional peer group. The bank's loans-to-deposits ratio was 75% as of 3Q23. Although this is significantly higher than levels reached during the peak of the pandemic, the ratio is reverting toward pre-pandemic levels, reflecting sustained loan growth in 2022 and a modest decline in deposit balances, consistent with market trends. Fitch expects PNC to manage liquidity in its historically conservative manner.

Holding Company Notching: PNC's holding company Viability Rating (VR) is equalized with PNC Bank N.A.'s VRs due to strong liquidity management. PNC's common equity double leverage is below 120% and it maintains a solid liquidity buffer at the holding company to cover upcoming cash outflows.

Employees

As of June 30, 2023, Midland maintained a total servicing staff across primary, master and special servicing of 520 employees, consistent with the prior year, as the company actively replaced employee departures and rebalanced employee allocations between primary/master and special servicing in response to changes in the portfolio. As of the same date, Midland was actively recruiting 14 primary/master servicing and five special servicing employees. The majority of employees are fully dedicated to servicing operations and do not support other Midland business lines or PNC.

Employee Statistics

	2023				2022			
	No. of Employees	Average Years Industry Experience	Average Years Tenure	% Turnover	No. of Employees	Average Years Industry Experience	Average Years Tenure	% Turnover
Primary/Master Servicing								
Senior Management	10	26	22	11	8	26	23	22
Middle Management	86	20	17	7	83	20	17	23
Servicing Staff	392	8	6	11	380	8	6	19
Total	**488**	—	—	**11**	**471**	—	—	**20**
Special Servicing								
Senior Management	3	21	21	33	3	20	20	0
Middle Management	8	20	14	38	8	20	14	53
Servicing Staff	21	10	5	57	32	12	5	38
Total	**32**	—	—	**51**	**43**	—	—	**38**

Source: Midland Loan Services

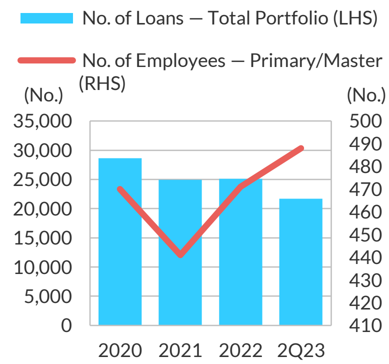
Primary/Master Servicing

Midland does not maintain separate primary and master servicing teams given overlap in servicing functions, which are performed by distinct servicing operations and real estate servicing solutions groups. Servicing operations is a functional approach to common tasks such as investor reporting, accounting and treasury, conversions, transaction processing and payoffs, among others. The operations team is split by product type, with specific teams responsible for borrower relationships involving shared servicing client portfolios, as well as insurance, agency, portfolio and lending clients. There are also specialized teams for complex loans, borrower services, SFR and interim servicing. The real estate solutions team includes the surveillance, loan covenant administration, performing asset management and reserve administration servicing functions, as well as special servicing and balance sheet asset management.

Aggregate turnover among primary/master servicing employees declined materially to 11% in 2023 and 8% excluding internal transfers. Since June 2022, the company has hired 43 employees with an average of four years of industry experience, offsetting departures and increasing the number of primary/master servicing employees, primarily at the staff level.

Aggregate turnover among master/primary servicing declined materially to 11% for the 12 months ended in June 2023, from 20% the prior year, due to approximately 50 employee separations, all but 17 of which were located in Overland Park. The majority of employee separations were voluntary (71% by count), followed by internal transfers (24%). Excluding internal transfers, aggregate turnover was 8%, down 50% from the prior year adjusting for internal transfers. Notwithstanding turnover, 17 employees were added to support primary/master servicing functions through new hires and internal transfers, with the majority of increased resources at the staff level. During the 12 months ended in June 2023, Midland hired 43 staff level primary/master servicing employees with an average of four years of industry experience. Approximately one third of new hires occurred outside of Overland Park, primarily in Dallas.

Loan and Employee Counts



Source: Midland Loan Services

The senior management team consists of 10 managers averaging 26 years of industry experience and 22 years with Midland. Turnover among the team declined to 11% during the 12 months ended in June 2023, from 22% the prior year, due to one internal transfer within the business development group who was replaced by another internal transfer within the group. Simultaneously, managers from the asset management and risk and compliance groups were promoted, resulting in two additional senior managers joining the team since Fitch's prior review. The three new senior managers collectively average 25 years of industry experience and more than 20 years with the company. The team is comprised of leaders from the executive management, business development, asset management, risk and compliance and loan servicing business lines. The average tenure and experience of the senior management team compares favorably with those of other highly rated servicers.

There were 86 middle managers, up three from the prior year, with an average of 20 years of industry experience and 17 years of tenure, unchanged from the prior year. Turnover among middle managers also declined materially to 7%, from 23% in 2022 and 15% the prior year, due to four voluntary separations and two internal transfers. Given that middle manager separations were backfilled from existing staff promotions, there have been no new management hires since Fitch's prior review, resulting in consistent tenure and experience levels of middle managers yoy. The combined senior and middle management team of 96 managers, up from 91 the prior year, provides sufficient management depth to staff employees, with an average of about one manager for every five staff-level employees.

Servicing staff averaged eight years of industry experience and six years of tenure, unchanged from the prior year. Turnover among staff employees declined to11% in 2023, from 19% the prior year. The majority of additions to servicing occurred at the staff level, with 12 employees (3.2%) added since Fitch's prior review. The majority of staff-level departures during the 12 months ended in June 2023 were voluntary (73%), followed by internal transfers (20%), also consistent with the prior year.

Approximately 79% of Midland's master/primary servicing staff is located in Overland Park, down from 82% and 93% the prior two years, respectively, as the company continues to geographically diversify its employee base to find experienced hires and mitigate turnover. Outside of Overland Park, approximately 6% are located in Dallas and 4% are in the company's Pittsburgh and Birmingham offices. Employees in satellite locations support risk and compliance, collateral surveillance, covenant administration, investor reporting, reserve administration and business development functions, among others.

Senior managers of the commercial loan servicing group monitor the size, projected growth and complexity of Midland's servicing portfolio and adjust staffing levels and/or engage or increase support from third-party vendors. Functional servicing requirements for each department are monitored by senior management on a quarterly basis through exception reporting to measure potential operational weakness, particularly as servicing volumes fluctuate. Department workflow, backlogs and measured activity resolution times are also monitored by cost center managers and servicing directors to ensure an acceptable standard of servicing is maintained.

Special Servicing

Turnover among special servicing employees remained high, at 51% during the 12 months ended in June 2023, including 56% turnover among asset managers. The number of employees allocated to special servicing has decreased 26% since Fitch's prior review, largely due to a 44% decline in the number of named and a 38% decline in active specially serviced loans since YE21 due to portfolio transfers.

The special servicing group is part of the real estate solutions division and consists of multiple special servicing teams of asset managers and analysts. The real estate solutions division also includes performing loan surveillance, loan covenant administration, external special servicing liaisons, performing asset management, reserve administration, balance sheet asset management and certain loan administrations functions. The division also supports Midland's third-party due diligence services.

The special servicing team is divided into two teams of asset managers responsible for working out loans from default to disposition, as well as a collateral management services group responsible for underwriting, research and analysis. Midland does not currently maintain a dedicated REO group or teams specific to any one loan product or asset type given the current volume of specially serviced loans.

Senior managers of special servicing remained unchanged from Fitch's prior review and average 21 years of industry experience and 21 years of tenure. The team comprises the head of special servicing and the heads of real estate solutions, and collateral surveillance and covenant administration. Only one senior manager is fully dedicated to supporting special servicing, as two senior managers also have responsibilities for the operations and compliance, and real estate solutions groups.

The special servicing group is still staffed by eight middle managers irrespective of a second year of high turnover. The group saw four separations due to one internal transfer and two voluntary departures, resulting in 38% turnover. Excluding internal transfers, middle management turnover is 25%. The average tenure and industry experience of middle managers remained consistent with the prior review, as three new middle managers who average 21 years of industry experience were promoted. All but two middle managers are fully dedicated to supporting special servicing functions, with the two shared resources also supporting operations and compliance functions.

There are 21 staff-level employees with an average of 10 years of industry experience and five years with the company. Of staff-level employees, approximately half are fully dedicated to supporting special servicing, with the remainder having shared responsibility for loan administration and ABS account management. Staff-level employees experienced 57% turnover, up from 38% the prior year, largely due to nine voluntary separations (60%) and five internal transfers (33%). Twelve of the staff-level separations had three years or less of tenure. Notwithstanding employee separations, the special servicing group added two staff-level employees during the 12 months ended in June 2023 who average 13 years of industry experience.

Aggregate turnover among special servicing employees increased to 51%, from 38% the prior year, as a result of 11 voluntary separations and seven internal transfers. Excluding internal transfers, aggregate turnover is 32%, comparable to the same internal transfer adjusted turnover rate of 29% the prior year. As of June 2023, the special servicing group was recruiting for five open positions, including two asset managers.

Fitch identified 12 special servicing employees as asset managers, down from 20 yoy. Asset managers average 17 years of industry experience and nine years of tenure. Turnover among asset managers was high, at 56% during the 12 months ended in June 2023, up from 24% the prior period due to nine departures, including one manager no longer assigned assets and two internal transfers. Excluding internal transfers and the inactive managers, asset manager turnover is 38%. The reduction in asset managers through transfers and natural attrition is commensurate with a 38% decline in active specially serviced loans from YE21 through June 2023. The ratio of specially serviced assets to asset managers increased to 15:1 from 10:1 the prior period. While the ratio of assets to asset managers is high compared to other Fitch-rated servicers,

Senior managers of the special servicing group meet weekly to evaluate staffing levels, capacity issues and opportunities for increased efficiency. Midland addressed staffing needs through a combination of reassigning resources from/to other Midland/PNC departments — such as Midland's performing loan asset management group, to retain employees with CRE experience — and hiring experienced asset managers.

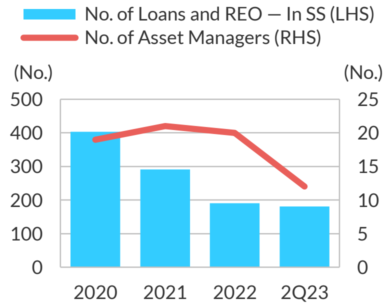
Training

Midland maintains a robust employee training program administered through PNC's 'iLearn' platform. iLearn is a self-directed learning and development portal that gives employees access to a wide library of skills training provided by LinkedIn Learning, Intuition, Bersin, TED and Pluralsight, among others. The platform includes several financial sector topics such as fixed income, derivatives, interest rate options, economics and treasury management. The platform allows management to push topical articles or videos directly to employees.

The goal of Midland's training program is to provide employees opportunities to increase on-the-job proficiency, skills development, industry education, personal and professional development and competitive intelligence. A former PNC learning and development consultant with more than 15 years of experience assumed responsibility for Midland's employee training in 2022.

Mandatory training assignments are communicated to employees quarterly and employees are given 60 days to complete the training. Compliance is monitored by the enterprise compliance program office

SS Loan and Employee Counts



REO – Real estate owned. SS – Special Servicing.
Source: Midland Loan Services

As of June 2023, Midland maintained 12 special servicing asset managers with an average of 17 years of industry experience and nine years of tenure. Asset managers average 15 default loan assignments per manager. Midland retained experienced asset managers through internal transfers who can be called upon if the number of special servicing assignments increases.

Employee training hours compare favorably with those of highly rated servicers, at 61 hours and 51 hours for master/primary and special servicing employees, respectively.

and line managers who receive monthly reports outlining completed and outstanding training requirements. Learning and development goals are included in annual performance reviews.

Midland no longer maintains a formal requirement for employees to complete a set number of training hours annually, having transitioned to measuring iLearn completions. For 2023, the company's goal was for employees to achieve 70 iLearn completions. In 2022, primary/master servicing employees completed approximately 61 hours of training, while special servicing employees completed 51 hours. Separately, primary/master servicing employees completed approximately 6,000 iLearn items in 2022, while special servicing employees completed 511 learning items.

The quality of training is monitored by the learning and development team through post-course surveys, manager feedback and employee check-ins. Senior managers also meet regularly to review training offerings relative to industry developments and feedback from employees.

In addition to iLearn, Midland supplements employee training through industry-focused education offerings from the Mortgage Bankers Association (MBA) and CRE Finance Council (CREFC). MBA CCMS level 1 and 2 courses are available to all employees. As of June 2023, seven Midland employees have achieved the professional CCMS designation from the MBA. Three employees also hold the Certified Treasury Professional designation and two hold a Commercial Investment Member designation.

PNC and Midland maintain several initiatives to address diversity, equity and inclusion (DE&I). PNC maintains an enterprise diversity and inclusion team that provides employees with resources such as monthly diversity and inclusion actions, a monthly inclusion podcast series and various iLearn courses.

In 2023, Midland sunset its legacy employee enrichment training program (MEET) and transitioned to its iLearn platform, which offers more self-directed learning and development opportunities as opposed to a structured curriculum.

Operational Infrastructure

Outsourcing

Midland engages third-party vendors to perform several servicing functions such as tax, Uniform Commercial Code (UCC) filings, property inspections and certain primary servicing functions not typically outsourced, including loan covenant testing, certain payoff quotes and waterfall loan setup. The company outsources customary tax monitoring and payment to three separate tax firms and UCC filing to a third party through PNC. Midland also uses two vendors to monitor flood insurance determinations and forced placement activities, as well as one bank in addition to PNC for treasury management services.

The company engages a third-party vendor to perform the initial underwriting of borrower consent requests such as lease approvals, assumptions, transfers of ownership and loan conversion, among others, along with loan covenant analysis and testing. The vendor is also engaged to perform the waterfall setup for cash-managed loans during high volume periods. The vendor currently performs approximately 80% of new loan waterfall setups, all of which are reviewed by Midland. In performing servicing functions on behalf of Midland, the vendor may contact borrowers directly to undertake lease reviews, assumptions, covenant testing, deferred maintenance follow-up and reserve draws.

Midland uses a longstanding outsourcing agreement with another third-party for collateral release processing, financial statement and rent roll data entry for nonsecuritized loans, insurance data entry, pursuit of invoice receipt, property inspection review and data entry, along with some financial statement analysis. The vendor may contact borrowers and insurance agents on behalf of Midland to pursue insurance invoices, evidence of insurance and receipts.

The company also maintains an engagement with a global financial services vendor to perform financial statement data entry, normalization and annualization, as well as data entry for rent rolls for securitized loans to reduce processing times. The vendor, who does not have borrower contact, works directly within the Enterprise! application, while Midland currently retains responsibility for financial statement analysis, quality control and borrower contact. Midland has been using the vendor, which uses a mix of onshore and offshore personnel, for approximately two years and currently performs a quality control review of approximately 40% of the work performed. The vendor's scope of services also includes calculating partial payoffs for SFR loans within Enterprise! The company reviews payoff quotes performed by the vendor prior to issuance to the borrower.

Consistent with other special servicers, the company engages third parties for property inspections, appraisals, brokerage services, property management and architectural, environmental and legal services associated with special servicing assignments. Contracts with outsourcing vendors generally

Midland utilizes more third-party vendor support than other Fitch-rated primary/master servicers to provide additional capacity. While the company maintains oversight and quality control of outsourced functions, outsourcing includes some core functions, such as loan covenant testing, setup for cash managed loans and borrower contact for certain reserve follow-up, consent requests and insurance verification.

do not have expiration dates and contain 60-day termination periods. Midland mitigates reliance on vendors by engaging multiple companies with the ability to expand the scope of services. The company also retains the ability to perform outsourced functions internally, although it would need to add staff resources if outsourced functions were brought in-house.

Midland is also an outsource provider of servicing for institutional investors, specialty finance companies and PNC through its "shared services" platform, for which Midland performs certain functions, while the named servicer retains oversight responsibility and borrower contact. Subservicing through its shared servicing platform consists of approximately 2,000 loans totaling $64.0 billion on behalf of two clients (down from 5,311 loans/$133.0 billion the prior year). The reduction in the shared servicing portfolio is the result of a client conversion to a hosted Enterprise! relationship in 2023. Approximately 63% of the loans are from a separate line of business within PNC Bank.

Midland and PNC undertook a strategic investment in the Enterprise! system in 2020. The goal of the three- to five-year initiative is to modernize the platform and transform the technology infrastructure to a cloud-based hosting environment, intended to allow for more frequent updates and open architecture to support automation.

Vendor Management

PNC maintains an enterprise third-party management program, which is coordinated with Midland's RCQ group. The program supports new vendor engagements and a formal oversight program, which includes formal risk assessments for each vendor correlating to formal oversight procedures, depending on the level of risk. Vendors are required to submit policies and procedures, technology and security questionnaires and, in some instances, audits. The RCQ group works with business managers on the selection and ongoing oversight of vendors.

The third-party management software (Archer) is currently used to monitor and manage third-party vendors. The software administers risk assessments ranging from broad scoping questionnaires to targeted follow-up assessments, as well as ongoing periodic oversight. Midland process owners are responsible for ongoing monitoring and oversight of the vendor relationships through exception reports and sample testing. All vendor work is monitored and tested to ensure compliance with Midland's and PNC's policies and procedures.

PNC has implemented a new enterprise third-party management program, Know Your Third Party (KY3P), for vendor management, which Midland expects to begin using in early 2024. Vendors used by Midland are currently being migrated from Archer to KY3P. The new system is expected to streamline the vendor management process and increase efficiency while maintaining the existing level of risk management. The system allows vendors to share information across clients and eliminate multiple requests.

Information Technology

Midland used Enterprise! version 20220.4.62 as its primary servicing system as of March 2023. The company undertakes upgrades no less than annually as enhancements are made. Enterprise! was developed by Midland and licensed to other servicers, and it is hosted by Midland. Enterprise! is integrated with several supporting applications, such as the proprietary asset management and special servicing system (AM Insight℠), Document Insight®, Cash Workstation Management, Automated Transaction Processing, Bank Account Reconciliation System and Waterfall Loan Management System applications.

Midland fully adopted a new client portal in 2023 and discontinued the use of Borrower Insight®. The new portal, which will replace CMBS Investor Insight® and Portfolio Investor Insight® in 2024, includes features that are common among highly rated servicers, such as allowing the borrower more self-service functionality and easier communication channels with the hopes of improving the borrower experience.

The company uses the following secondary systems to support primary servicing functions, the majority of which are integrated with Enterprise!:

- Waterfall Loan Management System (WLM) version 3.2.0: Receipt collections, prepare payment postings and remittances, approve money transfers, generate distribution statements and monitor loans with cash management agreements.
- Cash Workstation Management (CWM) version 2.1.2: Treasury application for cash administration and check printing.
- Automated Transaction Processing (ATP) version 3.22: Internal and external money movement workflow tool.
- Advanced Investor Reporting (AIR) version 2.5: Remittance calculator also used to calculate appraisal reduction amounts (ARA) and appraisal subordination entitlement reduction (ASER) amounts integrated within ATP.
- Bank Account Reconciliation System (BARS) version 3.5.1.1: Cash and bank account reconciliation application.

- Information portal.
- Client Portal version 1.7: Borrower web portal providing secure access to loan information, make payments, submit required documents and lender contact.
- CMBS Investor Insight® Portal version 20220.4.62: Securitized loan and transaction tool.
- Portfolio Investor Insight® Portal version 20220.4.62: Private investor web portal.
- Document Insight® Portal version 3.1.3: Proprietary digital document management tool.
- Dimensions version 2023.02: Internal data warehouse.

Special servicing is supported by Midland's proprietary asset management tool, AM Insight℠, which is a module of Enterprise! The browser-based application was introduced in February 2018 and is built around special servicing asset management workflows of defaulted loan workout and REO asset management for all property types. AM Insight℠ was further enhanced in November 2020 with the addition of a performing loan surveillance and analysis module. The surveillance module integrates data from a third-party provider and is used for monitoring performing loans, loan covenants and watchlist status where Midland is the named special servicer.

AM Insight℠ allows asset managers to create business plans, track compliance requirements, review loan terms, manage correspondence, analyze collateral, perform net present value (NPV) financial analyses of alternative resolution strategies and review and track operating budgets. No additional enhancements have been made to AM Insight℠ since 2020, which compares less favorably to more regular enhancements and new functionality observed at other highly rated special servicers with large portfolios.

Midland has increased the cadence of technology upgrades to quarterly. The most recent updates included the Enterprise!, Client Portal, WLM, AIR, ATP, CWM and insurance applications.

Since Fitch's prior review, Midland has sunset its legacy Investor Reporting Module, which was used for tracking portfolio-specific reporting requirements and calculating ASERs as functions transitioned to the new AIR application. Further, in May 2023 the company stopped using the Borrower Insight® portal, which was used to provide loan information to borrowers that have transitioned to the new Client Portal. Borrower Insight® is still a part of the Enterprise! technology platform and used by some Enterprise! application clients.

The Client Portal, first introduced in 3Q22, was created to be a dynamic interface to address numerous types of clients, and it has more modern architecture and enhanced security protocols, including multifactor authentication. Midland expects to consolidate its legacy portfolio and CMBS Investor Insight® and Portfolio Investor Insight® portals into the Client Portal to significantly reduce the infrastructure needs of maintaining three separate portals.

The borrower aspect of the Client Portal, which is available to all borrowers irrespective of loan type, has self-service functionality, including the ability to request reserve distributions and submit required documentation, upload and track financial statements and rent rolls, print billing statements and submit online payments. The portal also includes customer contact tools, including live chat with customer service representatives, as well as the ability to email servicer contacts. The portal also allows borrowers to give access to their loans to other users such as property managers or accounting staff. Midland expected to add additional functionality to support lease approval and payoff requests before YE23.

As of July 2023, the Client Portal had more than 3,800 registered users associated with nearly 6,000 loans and representing approximately half of eligible borrowers. Fitch found that the borrower aspect of the Client Portal is easy to navigate and that its functionally is robust and compares favorably with those of other highly rated Fitch servicers, particularly the new lender contact options and the ability to track the progress of reserve disbursement requests and focus on email communication. Recent Client Portal enhancements include allowing borrowers to edit ACH accounts, improved navigation for property data, the ability to submit reserve draw requests and import multiple invoices, and the addition of a borrower administrator role to oversee access delegations.

Midland continues to make incremental enhancements across its proprietary applications and technology infrastructure. The company has made considerable progress in improving its investor reporting process, cash management and insurance administration functions. Enhancements to loan covenant administration are expected to be fully implemented in 2024.

Investor reporting is performed within the AIR platform and Enterprise! and is supported by a dedicated group responsible for building and maintaining custom reports to supplement the more than 200 reports available in Enterprise! The company also maintains an internal data warehouse, Dimensions, which provides a centralized reporting environment outside of day-to-day servicing. It integrates data from multiple sources to support consolidated reporting and information outputs, providing reports in the areas of delinquency, portfolio statistics, runoff, deposits and special servicing for management and servicing operations. While the majority of data elements contained within Dimensions are day-end, several key data elements, including balances, loan status, transaction and workflow and loan accounting data, are updated every 15–30 minutes.

Midland began testing robotic processing automation (RPA) for servicing functions in 2019 and currently has seven RPA-assisted servicing processes, up from six since the prior review. RPA is utilized to retrieve and load flood determination data, upload subservicer operating statement analysis reports (OSARs) and update tax records, as well as for document imaging, investor reporting, processing payments remitted by subservicers and a master servicer reporting bot to extract financial statements, rent rolls and inspection files and load them to a SharePoint site for forwarding to pooling and servicing agreement (PSA) parties. The company's adoption of automation compares favorably with that of other highly rated servicers and has provided measurable process efficiencies where implemented.

Additional technology initiatives include the expanded use of optical character recognition (OCR) technology to refine the analysis of property financial statements and rent rolls. Through a combination of OCR and RPA tools, data are extracted from borrower-submitted documents, attached to a workflow item and loaded into Enterprise! The company is working to adapt the process to automating review of insurance ACORD 25 forms; this is expected to be completed by YE23. Simultaneously, enhancements are being made to the company's new covenant workflow module to add quality assurance functionality, document management functionality and consolidate debt service coverage ratio testing through 2023.

Future technology enhancements are expected to include continued evolution of the Enterprise! loan servicing platform architecture to support multi-tenant clients within an agnostic cloud-based environment, expansion of the Client Portal to support servicing clients and a new master servicing module to support subservicer data submissions via automated processes. The company is also actively making enhancements to its AIR application to support special servicer fee invoicing, loan-level cash reconciliations and money movement enhancements, among others. Additionally, Midland continues to develop and enhance APIs primarily to support Enterprise! client needs. Twenty new APIs have been introduced to address client needs since Fitch's prior review, and an additional 11 APIs are in development.

The company has a separate IT staff and, in conjunction with PNC technology, has approximately 140 employees responsible for supporting Midland technology. The PNC help desk is responsible for network and PC hardware issues, while Midland itself maintains responsibility for Enterprise! and its proprietary ancillary servicing application support. Second-level support groups include network services, system operations and software development groups.

Cybersecurity

PNC maintains a dedicated cyber operations team responsible for preventing and responding to cybersecurity events. There is a formal cybersecurity program focused on protecting data and technology resources by monitoring, tracking and responding to suspicious and malicious activity. The program is supported by ongoing awareness campaigns and formal employee training. Additionally, PNC reviews employee access rights quarterly to confirm that employees have access only to the systems and data necessary for their role.

While Midland did not provide the results of recent vulnerability and penetration tests, it reported that no cybersecurity incidents impacted its technology environment during the 24 months ended June 30, 2023. PNC maintains cyber liability insurance and there have been no claims that impacted Midland's technology environment.

Disaster Recovery/Business Continuity Plan

As part of the PNC enterprise, Midland maintains a business continuity program that includes testing of critical and noncritical systems, including Enterprise!, based on established recovery time objectives. The program includes a business impact analysis to assess the effect of potential business interruptions, a risk assessment to evaluate the impact of potential threats, planning and mitigation to address business continuity and periodic recovery testing. Critical servicing systems, including Enterprise!, ATP, BARS and CWM, are expected to be operational within 24 hours of a failure. PNC's treasury management application has a six-hour recovery time objective. The most recent test occurred in March 2023, and all applications were successfully recovered well within the company's 24-hour objective with no significant issues identified during the exercise.

The majority of Midland employees work hybrid schedules, mixing remote and in-office days. Remote work and the use of two regionally diverse satellite offices, in Dallas and Birmingham, provide continuous testing of the company's out-of-region business continuity capabilities.

Midland's technology environment currently resides within the PNC corporate technology environment. The PNC environment consists of two datacenters operated by third-party vendors in different geographic locations. Data is replicated in real time between the two centers, resulting in less than 15 minutes of possible data loss. The company is in the process of transitioning certain technology applications, including Enterprise!, out of the PNC environment and to a virtual cloud environment. Initial proof of concepts and a full impact analysis have been completed to develop a transition plan with the goal of transitioning Midland's use of Enterprise! to an Azure environment, followed by third-party clients.

The company's disaster recovery plan identifies key management personnel across the enterprise as members of a business resiliency management team responsible for overseeing operational recovery in the event the Overland Park office is either not operational or inaccessible. Business continuity procedures include a work-from-home strategy, as is common among Fitch-rated servicers, and relocation of business operations to the company's Dallas, Birmingham or Little Rock offices, the closest of which is approximately 380 miles away and can accommodate approximately 85 employees.

Midland expanded its geographic footprint in 2022 with the addition of satellite offices in Dallas and Birmingham, bringing the total number of satellite offices to three, excluding other PNC offices. Satellite offices house dedicated servicing staff covering all key servicing functions, allowing Midland to continue operations in the event of a prolonged disruption of service in the Kansas City market.

Governance

Midland maintains a multifaceted internal control environment consistent with those of large institutional banks following the three-lines-of-defense methodology, consisting of the RCQ group, independent risk management and internal audit groups. Controls are established by documented policies and procedures built around servicing agreement and regulatory requirements. The effectiveness of controls is monitored quarterly via management certifications.

Midland demonstrates a proficient control environment over servicing functions through manager oversight of more than 200 internal controls and multiple levels of independent review, including quality assurance, compliance and internal audit groups.

Policies and Procedures

Midland's policy is to review and update policies and procedures on an annual basis or as necessary to address process or regulatory changes. Department managers are notified of pending annual reviews and are responsible for updating policies and procedures for their respective groups. A secondary review is performed by their manager prior to implementation. Policies and procedures are maintained in a central PNC Real Estate SharePoint site and are accessible by all employees. Desktop procedures are maintained at the department level and are likewise accessible to all employees via a shared directory. Changes are communicated during department meetings, through email or during company meetings, depending on the scope of the change. Formal training is provided for new employees and may be supplemented to include policy and procedure changes, depending on scope.

The company currently maintains approximately 1,900 procedures across its servicing and technology functions. Compliance with policies and procedures is maintained via controls tied to each procedure. Controls are monitored through management reporting and may in some instances be key performance indicators.

In 2023 Midland transitioned all procedures to a new standard template, adding the ability to track the most recent review date, manager signoff and a change log. Changes to policies and procedures were less formally tracked historically. Since Fitch's prior review, material changes have been made to asset management, collateral management services and covenant policies to provide procedural clarifications and conversion to the new template. No other material changes to policies and procedures were disclosed to Fitch. Policy and procedure documents provided to Fitch were largely in the new template format, which includes a description of the process, how often it is performed and by whom, the responsible department and the most recent approval date of the procedure owner and manager. Procedure descriptions vary in detail among departments and likewise include varying degrees of step-by-step instructions and illustrations.

Fitch reviewed primary servicing policies and procedures for delinquency collection, covenant administration, releases, recording UCC filings, the property inspection process and financial statement collection. Procedures sampled by Fitch evidenced recent reviews.

Special servicing policies remain in legacy templates containing a description of the policy and background, high-level procedural steps, references to related forms, documents and procedures where necessary, as well as data from the most recent review. Midland's special servicing policies and procedures continue to be less detailed than those of other highly rated servicers and lack illustrations to guide users through specific tasks within the company's asset management system; however, there is a separate and more detailed user manual for Midland's proprietary asset management and special servicing system. Special servicing policies and procedures reviewed by Fitch included appraisals, fair value determinations, annual business plan creation, return of corrected loans and payoff quotes, with each reflecting recent reviews and no material updates.

Compliance and Controls

Fitch found that Midland's quality control framework, inclusive of dedicated and independent compliance testing, clearly identified controls and had robust monitoring and reporting, consistent with best practices.

The RCQ group is dedicated to quality assurance oversight and is independent of the servicing operations and technology divisions, reporting to the executive vice president and chief operating officer of PNC Real Estate. The group of 18 fully dedicated employees provides oversight and support for PNC Real Estate business areas in addition to Midland and consists of a director, three managers and a support staff of 14, as well as one external consultant. The director of RCQ has more than 20 years of industry experience and tenure with Midland. Collectively, senior and middle managers of RCQ average 15 years of industry experience and 14 years of tenure.

The RCQ group provides quality assurance validation, audit coordination, control monitoring, testing and completion of various operations reviews and subservicer reviews. The group also provides regulatory compliance direction and support in the areas of corporate governance, asset protection, compliance verification and strategic guidance.

The core of Midland's internal control environment consists of approximately 200 comprehensive internal controls in servicing processes and functions, as well as 30 controls for regulatory compliance, identified by management and assigned to control owners in the lines of business. In 2H22, Midland added approximately seven controls over servicing processes or technology functions. Controls are integrated into PNC's Archer application, which is the official system of record for control oversight.

Fourteen of the internal controls address special servicing asset management and workout cash control functions. The RCQ group oversees the administration of the controls as a whole, while each control is assigned to an owner who evaluates their control on a quarterly basis. The executive vice president and head of Midland is required to certify to the operating effectiveness of the entire control environment. In addition to formal controls, individual departments have department-level controls that are structured around their workflow procedures.

A summary of the control results is provided to senior management for evaluation quarterly and contains a summary of controls, new and removed controls and color-coded indicators to identify performance declines either monthly or quarterly. Fitch reviewed the 1Q23 control summary report, which clearly illustrates the effectiveness of controls and tracks the number of controls added and removed each quarter.

As of May 2023, Midland had one medium and one low self-identified outstanding control issue. These issues were expected to be remediated by YE23. Three issues have been closed and four issues are pending validation to confirm remediation. The number of outstanding control issues is low compared to prior years.

At the enterprise level, PNC maintains an independent risk management compliance function comprised of the enterprise compliance and sanctions risk groups. The enterprise compliance function is led by the chief compliance officer of PNC, while the chief anti-money laundering (AML) officer oversees the bank secrecy act/AML and sanctions risk group. Both officers report to the chief risk officer of PNC. The enterprise compliance group performs an annual compliance plan that includes risk assessments, compliance monitoring programs and a review of risk management policies. The plan includes annual testing of various groups, which may include servicing operations, depending on the scope. Separately, PNC's corporate ethics office monitors servicing employee compliance with the bank's conflicts of interest policy.

Enterprise compliance has a dedicated corporate and institutional banking (C&IB) compliance group that is responsible for managing compliance in conjunction with the enterprise compliance group. Led by a senior vice president, the C&IB compliance group includes 15 employees that provide compliance support to Midland and other C&IB businesses. The group leverages subject expertise from PNC's privacy office, bank secrecy act/AML and sanctions risk group, independent risk management compliance testing and the regulatory change group to support Midland.

Separate from enterprise testing services, the independent risk management and compliance testing team (ETS team) provides assistance in developing and monitoring risk-based testing across the procedures and controls of select areas, as needed. Testing varies annually based on risk assessment changes, industry and environmental factors and prior test results. The scope of annual tests is approved by the compliance risk committee and reviewed by the chief compliance officers of PNC. The ETS team comprised 15 employees focused on compliance activities, inclusive of Midland, as of June 2023.

Internal Audit

Midland's commercial servicing operations and technology divisions are audited by the internal audit division of PNC. The internal audit division reports directly to the Audit Committee of the PNC Board of Directors and is independent of the Midland division. The enterprisewide internal audit team, comprised of approximately 475 employees, is responsible for confirming risks are appropriately identified and managed; assets are protected; employees follow established policies and procedures and regulatory and investor requirements; and material financial, managerial and operating information is accurate, reliable and timely.

Midland's servicing operations have been subject to two internal audits since Fitch's last review. Both audits resulted in 'Satisfactory' opinions with no high-risk findings. Each audit identified one minor finding that has been fully remediated and closed.

The scope and frequency of audits are determined by PNC's internal audit function and are designed to ensure risks are appropriately identified, assets are properly protected, employee actions are in compliance with corporate policies and procedures and applicable regulatory and investor requirements, and significant financial, managerial and operating information is accurate, reliable and timely.

Audits are structured around the group's strategic objectives; financial and operational information; effectiveness and efficiency of operations, programs, assets and policies and procedures; and compliance with laws, regulations, policies and procedures and contract requirements. PNC's 2022 risk assessment identified Midland for an audit every three years, through five engagements consisting of loan services, specialized servicing, real estate solutions, investor reporting and operational accounting and client solutions. Regular annual audits and risk assessments compare favorably with those of other Fitch-rated servicers, although some key functions many be reviewed every three years based on their current risk assessment and considering strong internal controls.

PNC's internal audit group performed two audits encompassing Midland during the 12 months ended in June 2023, consistent with three audits during the prior review period, albeit with a different scope. The Midland Loan Servicing audit scope included operational processes related to loan servicing activities and compliance with certain applicable federal laws, including flood-related laws. The audit, covering loan servicing activities from July 2021 through June 2022, resulted in a "Satisfactory" opinion, with one low risk issue pertaining to a control validation process that has subsequently been remediated and closed.

The Midland Portfolio Servicing audit reviewed operational processes related to complex loan and borrower services activities and Enterprise! for the 12 months ended in March 2023. This audit also resulted in a "Satisfactory" opinion and contained one medium-risk, self-identified issue pertaining to certain bank fees that has since been resolved by the Treasury Management team and closed.

Midland formally tracks control exceptions noted during internal audits and external audits or which are self-identified. Since Fitch's prior review the company has continued to resolve outstanding issues, having fully resolved and closed three issues and addressed four additional issues that are pending validation review. Only one low-risk and one medium-risk self-identified issue remain outstanding; these issues were scheduled to be fully remediated by YE23. The number of control exceptions continues to decline yoy, demonstrating a strengthening of the internal control environment.

External Audit

Midland is subject to various external audits as a servicer and technology provider. The company was subject to RegAB, SOC-1 and SOC-2 audits by PricewaterhouseCoopers LLP, as well as third-party reviews by government-sponsored enterprises and other servicers.

Fitch reviewed the company's RegAB audit for YE22, dated Feb. 17, 2023; it did not contain any material noncompliance findings. The SOC-1 audit for the 12 months ended in September 2022 resulted in an unqualified opinion of compliance. The audit identified two control exceptions that were sufficiently addressed by management and determined by Fitch to be immaterial to servicing operations. The SOC-2 audit, covering the same period, also identified an unqualified opinion of compliance but noted the same two control exceptions observed during the SOC-1 audit.

Midland was also subject to Chapter 6 and Chapter 7 U.S. Department of Housing and Urban Development (HUD) audits for 2022. There were no operational findings in the audits pertaining to Midland or commercial loan servicing functions.

Primary Servicing

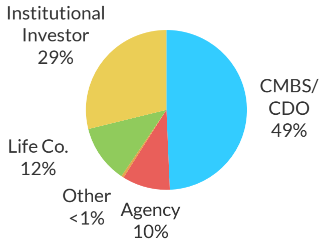
Midland performs commercial mortgage servicing and subservicing for CMBS trusts, portfolio lenders, institutional investors, financial institutions, specialty finance companies, mortgage bankers and multifamily agency seller/servicers. As of June 30, 2023, Midland acted as primary servicer for approximately 8,000 securitized loans representing $195.1 billion in outstanding balance and 8,270 nonsecuritized loans with an unpaid balance of $224.4 billion. The 28% decline in the number of nonsecuritized loans in 2023 reflects the conversion of a shared services client to a hosted technology client, as well as small client terminations by Midland.

Primary Servicing Portfolio Overview

($ Mil.)	6/30/23	% Change	12/31/22	% Change	12/31/21
Securitized					
No. of Transactions — Primary Servicer	502	1	496	7	462
UPB — Primary Servicing	195,099.2	–1	197,690.8	10	180,441.9
No. of Loans — Primary Servicing	8,059	–3	8,282	1	8,229
Nonsecuritized					
UPB	244,427.2	–21	308,159.0	7	288,682.7
No. of Loans	8,270	–28	11,512	–2	11,692

UPB – Unpaid principal balance
Source: Midland Loan Services

Primary Servicing Product Type
As of June 30, 2023



Source: Midland Loan Services

As of May 2023, Midland's portfolio included 1,856 loans totaling $75.7 million that are scheduled to mature through May 2024.

New Loan Setup

Midland regularly receives new loans either individually or through bulk data transfers, with each scenario following a different initial process but undergoing the same quality control review. Midland's new loan setup procedure includes a full file scrub for each new loan to ensure all loan covenants, terms and structures are identified, tracked and monitored. Account managers are responsible for working with the servicing transfer department to board new loans that are not part of a bulk transfer. The account manager acts as the point person for all documents and forwards them to the servicing transfer department, where they are inventoried, logged, imaged and loaded into Enterprise!

Setting up new loans is the responsibility of the servicing transfer department, which logs new loan requests into a setup database and assigns an analyst to complete the setup process. Once the initial loan setup process is completed, a senior analyst performs a quality control review and activates the loan. Accurate and timely boarding is controlled through segregation of duties between setup, quality control and exception report monitoring. Individual new loans are set up within two days of receipt and activated within 15 days in the servicing system.

While Midland records all loan-level covenants in Enterprise! with a tickler function to monitor compliance dates, the company is the only Fitch-rated servicer that outsources covenant testing.

Bulk data transfers are the most common new loan setup for securitized loans and the company performs bulk loan transfers more frequently than any other Fitch-rated servicer, averaging two to six bulk transfers a month, typically comprised of 20–500 loans. Midland requests critical data elements that are then reviewed and code interpreted for transition into Enterprise! Bulk uploads are typically initially recorded within five days of closing and active in the servicing system within 10 days of loan closing.

The servicing transfer administration group conducts an audit of all converted information against critical information shown on the trustee's annex of loan information. New loans are uploaded to Enterprise! once all data discrepancies are resolved. Once data are transferred to Enterprise!, additional audits are performed by the ARM/accrual department of financial terms, while the servicing transfer group audits nonfinancial terms. Both audits verify that data agree with the terms of the loan documents and identify covenants and other servicing responsibilities.

Accounting and Cash Management

Loan payments are posted daily by Midland's treasury operations department using the ATP application that automatically matches cash receipts to expected receivables and posts payments to the appropriate loan. The ATP application is also used to process automated bank files and manual transactions. The treasury operations department, comprised of 14 employees, performs daily

% Payment Collections

ACH	19
Lockbox	14
Wire	66
Other	1

ACH – Automated Clearing House
Source: Midland Loan Services

reconciliations of cash receipts, comparing money totals and bank account files with money posted to the ATP application.

The treasury department is also responsible for monitoring contractual account requirements for banks holding custodial servicing deposits. A staff member performs a monthly review of bank rating requirements for compliance with servicing agreements and submits a report to management for verification and signoff. Midland has a dedicated complex loan administration group consisting of 34 employees (up from 21) who are responsible for calculating and processing waterfall allocations of cash-managed loans. The company began using a third-party vendor to perform setup and assist with the review of cash-managed loans. Midland is currently the only Fitch-rated servicer that outsources cash-management setup.

The treasury department is responsible for maintaining and operating the payment collection network, which includes ensuring lockboxes are established and maintained in accordance with governing documents. Depending on the requirements of the loan agreement, the complex loan administration group also remits excess funds to borrowers or wires funds to the mezzanine servicer.

The operational accounting department, staffed by 14 employees (up from 12), is responsible for reconciling all custodial bank accounts daily. Midland's proprietary Enterprise! bank account reconciliation system is used to compare the servicing system ledger balance for principal and interest, escrows, reserves and suspense accounts to the bank balance for all custodial bank accounts.

As of June 2023, Midland serviced approximately 2,722 loans with active cash management agreements, as well as approximately 5,112 loans with springing lockboxes for which it has activated 245 lockbox accounts in the past 12 months. Midland monitored 125 LOCs totaling approximately $971.0 million as additional loan collateral as of the same date.

Midland uses two large financial banking institutions (including PNC Bank) to hold funds on behalf of securitized transactions. Both financial institutions meet Fitch's minimum counterparty rating criteria of 'A'/'F1' for Fitch-rated structured finance transactions. The ratings of financial institutions are reviewed by a treasury employee monthly to confirm compliance with rating requirements contained within servicing agreements. A treasury manager also performs a secondary review.

Escrow Administration

The property tax group is responsible for researching and establishing real estate tax information for all loans serviced by Midland. This responsibility includes paying escrowed tax bills, verifying the adequacy of escrow amounts, monitoring non-escrowed loans to verify tax payments and customer service for tax inquiries. Midland uses three tax service providers, which supply Midland with data on loans with taxes due that are uploaded into Enterprise! Any inconsistencies in tax payments are researched and resolved, with the tax team leader responsible for monitoring progress and approving disbursements prior to payment.

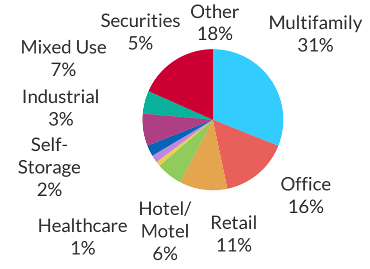
Midland incurred de minimus tax penalties in 2022 for seven loans, consistent with the prior year, as a result of incorrect setup or payment instructions not being addressed in a timely manner. During 1H23, the company incurred penalties on four loans totaling less than $1,000. Tax and insurance escrow analysis is performed on an annual basis during the month following the most recent tax or insurance disbursement. If analysis shows an increase or decrease in the escrow payment is needed, the borrower is provided with a minimum of 30 days' notice prior to the adjustment. Management monitors the timely and accurate escrow analysis using exception reports.

Midland's insurance group monitors the maintenance and payment of insurance premiums to ensure compliance with the loan documents. Insurance policy information, policy premiums, payment frequency, due dates and payment status are maintained in Enterprise!. Insurance oversight is performed via a weekly report that tracks premiums paid from escrow accounts, receipt of proper insurance documentation and premium payments outstanding. Midland follows up with borrowers and insurance agents on all loans until discrepancies are resolved.

Midland maintains force placed insurance coverage to protect the interests of the lender in the event of a lapse in coverage. As of June 2023, approximately 64 loans were covered under the policy, the majority of which were SFR loans. Loans are typically placed under forced placed coverage for an average of 90 days due to a borrower's failure to provide evidence of the required coverages.

UCC records are maintained on the servicing system by a separate UCC group. The group monitors UCC expirations six months in advance and utilizes a third-party vendor to prepare and file

Securitized Primary and Master Servicing Property Type
As of March 31, 2023



Source: Midland Loan Services

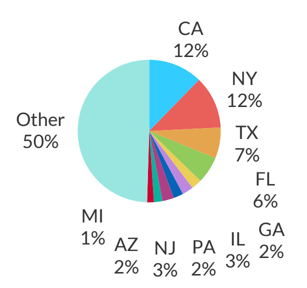
% Portfolio Escrowed

Taxes	65
Insurance	37

Source: Midland Loan Services

As of June 2023, Midland maintained forced place commercial insurance on 64 properties, the majority of which are SFR properties.

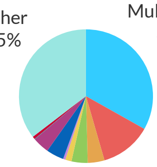
Securitized Primary and Master Geographic Distribution
As of March 31, 2023



Source: Midland Loan Services

continuation statements. The group is also responsible for UCC terminations and amendments, as well as changes to secured party and collateral/legal descriptions. Midland reported three UCC filing lapses during the 12 months ended in June 2023, up from one the year prior, due to inaccurate data recorded in Enterprise! The UCCs were subsequently filed without any loss of lien position.

Nonsecuritized Primary and Master Servicing Property Type
As of March 31, 2023



Source: Midland Loan Services

Investor Reporting

Midland maintains a dedicated investor accounting group staffed by 55 employees, up from 51 the prior year, who are responsible for remittance calculations, servicing advances, bank account reconciliation and interfacing with other servicers to determine remittances, realized losses and compliance functions.

The majority of investor reporting functions are automated by utilizing data extracts from Enterprise! on the determination date. Investor accounting analysts, assigned specific portfolios, validate transactions and review key financial terms, servicing data and collection account funding. In addition, analysts review advances for delinquent loans, advance recovery, trust expenses and asset subordinated expense reimbursement accounts. Midland's investor review process includes 50 quality control checks to validate key data elements, including cash remittance fields and loan and property data for monthly CREFC reporting.

Reporting errors and restatements are formally tracked and reviewed to identify the source of each error and identify opportunities to enhance controls. During the 12 months ended in June 2023. Midland had 13 instances of restatements or redistributions due to appraisal reduction amounts, incomplete CREFC reporting files or loan modifications. In addition, investor reporting reviews trustee reports for transactions with potential issues or complex remittances to confirm accuracy. The company does not have a standing policy to review a sampling of trustee reports for accuracy on a regular basis. Midland also monitors monthly interest distributions in conjunction with advance and expense recovery, particularly for highly concentrated transactions or those with large significant advances or a large number of specially serviced assets.

Asset Administration

Delinquent payments are monitored by Midland's collections department, which begins contacting borrowers both by phone and a payment reminder mailing within two days of the expiration of the grace period. All collection attempts are recorded in Enterprise! and follow-up dates are scheduled based on borrower response.

Midland's policy is to review and update CREFC watchlist commentary at least every 60 days, which is consistent with highly rated primary servicers.

Formal collection letters are mailed when a loan is 30 days past due. Responsibility for transferring loans to special servicing lies with the asset management group, which uses a dashboard to evaluate loans against pending transfer mitigants such as loan forbearance. Management reports monitor the number of collection calls, borrower contacts and payment arrangements made.

The collateral surveillance department is responsible for the collection and analysis of operating statements. Financial statements and rent rolls are imaged upon receipt and transferred to third-party vendors for data entry and analysis. The average time to complete the financial statement entry and analysis was 18 days for YE22 statements, up slightly from 16 days for YE21 statements. Quality control oversight is the responsibility of the assigned portfolio analyst, who will review 20%–100% of the vendors' analysis, paying particular attention to watchlist and top 10 loans.

Midland is the only large volume, Fitch-rated primary servicer that outsources financial statement and rent roll data entry, as well as some financial statement analysis. Nevertheless, the company maintains sufficient controls around the process, with dual quality control reviews. Processes for financial statement data entry and analysis continue to evolve as servicers increasingly adopt automated tools using OCR, RPA and machine learning. Midland began adopting automation tools in 2Q22 and continues to expand their use to include financial statements, rent rolls and ACORD 25 forms to reduce vendor usage.

The company maintained a consolidated financial statement reporting tool portfolio for loans with multiple collateral, addressing a prior concern noted by Fitch's surveillance group. Midland enters and maintains tenant rent roll data electronically for all tenants to monitor tenant rollover.

Midland utilizes CREFC Investor Reporting Package watchlist criteria in addition to its own internal criteria for an internal watchlist. The creation and management of the watchlist is the responsibility of the collateral surveillance department. Oversight of the watchlist is performed monthly by a formal watchlist group comprised of representatives from the collateral services, surveillance and collection departments.

The group is responsible for determining appropriate actions for watchlist loans, determining the materiality of a problem loan, overseeing additions, deletions or changes in the status of the watchlist and facilitating accurate and timely communication with investors and servicers. Watchlist comments are reviewed on a monthly basis and updated at least every 60 days. Fitch's surveillance group has observed that Midland maintains timely and relevant watchlist commentary relative to other Fitch-rated master servicers.

Midland is responsible for performing CRE property inspections annually utilizing four third-party contractors. The company does not typically perform any property inspections itself. Borrowers are notified in advance of a property inspection, which includes a property management interview, a rent roll review and market and physical property assessments to identify potential risks. Inspection reports are reviewed by analysts, who summarize any deferred maintenance issues. These issues are tracked and communicated to the borrower by a third-party vendor for remediation.

Customer Service

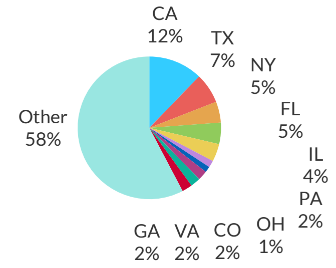
Midland has a dedicated borrower services group for non-CMBS loans consisting of five employees, consistent with the prior year. The group reports to an operations manager and is responsible for borrower communication via phone calls, mail correspondence or the Client Portal. A department manager or senior staff member regularly monitors phone calls as a quality control measure.

There is a separate CMBS Servicing group consisting of 23 staff and one middle manager to provide a central point of contact for CMBS borrowers through the life of a loan.

Requests for a loan payoff must be submitted by the borrower in writing and are formally tracked and assigned a response due date. Payoffs are calculated by analysts in accordance with the loan documents. All payoff quotes are reviewed by a second analyst for accuracy. While Midland maintains a benchmark seven-day turnaround for payoff requests (up from three days previously), the turnaround time in 2022 was approximately five days. Midland monitors borrower satisfaction through periodic customer surveys and input from senior account and portfolio representatives who are in regular contact with borrowers and major clients.

Midland performs annual borrower satisfaction surveys, the most recent of which occurred in October 2022, involving approximately 3,700 borrowers. The survey had a response rate of approximately 6% and Midland expects that staffing increases and the new Client Portal will help to address common issues.

Nonsecuritized Primary and Master Geographic Distribution
As of March 31, 2023



Source: Midland Loan Services

Master Servicing

As of June 30, 2023, Midland was named master servicer for 486 securitized transactions totaling $311.0 billion, with more than 12,800 loans. Master servicing assignments include traditional legacy and recent vintage securitized transactions, as well as whole business, Canadian securitizations and cell tower and SFR transactions. Also as of the same date, Midland oversaw 31 third-party primary servicers responsible for servicing approximately 5,300 loans totaling $129.6 billion. The company does not maintain master servicing-specific functional groups as master servicing duties are generally performed in conjunction with primary servicing functions.

Fitch's CMBS surveillance group found that Midland is responsive to inquiries and that loan commentary is up to date.

Master Servicing Portfolio Overview

($ Mil.)	6/30/23	% Change	12/31/21	% Change	12/31/20
No. of Transactions — Master Servicer	486	2	478	9	437
UPB — Master Servicing	310,995.4	−1	313,158.8	9	288,464.5
No. of Loans — Master Servicing	12,859	−2	13,104	3	12,711
No. of Primary Servicers Overseen	31	—	31	—	31

UPB – Unpaid principal balance
Source: Midland Loan Services

Primary Servicer Oversight

The RCQ group is responsible for annual oversight of primary servicers through annual desktop or onsite reviews. The type of review performed is based on prior review findings, feedback from Midland's subservicer oversight group, results of third-party reports, servicing volume and number of top 10 loans serviced. The review of primary servicers comprises a detailed audit template addressing insurance, flood insurance, reserves, UCCs, asset management, waterfall administration and covenant surveillance functions, among others. The RCQ group also tracks bank account requirements for primary servicers against transaction requirements. Compliance is verified during primary servicer reviews and via quarterly monitoring of bank ratings. Information is gathered through samples testing and a questionnaire. The results of primary servicer reviews, including any findings, are communicated back to the primary servicer and material findings are followed up on to confirm remediation.

Midland reviewed all primary servicers during the 18 months ended in June 2023, inclusive of 15 onsite reviews. This demonstrates a high proficiency of master servicing, consistent with highly rated master servicers. Midland "shadow services" loans, comparing expected principal and interest payments to those received from the primary servicer to proactively identify any discrepancies.

Feedback to servicers is communicated through email correspondence, resulting in more limited documentation compared to servicers that prepare more formal reports or conclusion memorandums to communicate feedback.

Separately, Midland maintains a subservicer oversight group, comprised of one dedicated employee and three analysts, that is responsible for daily oversight of primary servicers. The group generates reports of expected payments each month, which are reconciled with primary servicer remittances. The group also monitors timeliness of remittances and any payment variances, as well as tax and insurance compliance reports from primary servicers. The group tracks expected inspections, financial statements and rent roll deliverables from primary servicers and special servicers. Additionally, the oversight group monitors annual RegAB and/or Uniform Single Attestation Program (USAP) audit compliance among primary servicers.

Primary servicer oversight was enhanced in 2023 to include reviewing the processing time of property inspections to confirm material deferred maintenance or that life safety issues are communicated to borrowers in a timely manner. Midland is the first Fitch-rated master servicer to add inspection notice timing to its scope of primary servicer oversight.

Midland performed 12 onsite and 14 desktop primary servicer reviews in 2022 and had completed three onsite and two desktop reviews through June 2023. An additional seven desktop reviews were expected to be complete by YE23. Fitch notes that Midland had reviewed all primary servicers in the 18 months ended in June 2023, including a material number of onsite reviews, consistent with master servicers demonstrating the highest level of proficiency in oversight. Fitch views annual primary servicer reviews, periodically in person, as an industry best practice. None of the reviews completed by Midland identified substandard servicer performance, with observations or exceptions noted as isolated incidents.

Advancing

The Servicing Advance Review Group (SARG) is responsible for monitoring and controlling the amount and credit quality of advances made by Midland, with the goal of eliminating nonrecoverable advances. The group, which meets monthly, comprises senior representatives from investor reporting, real estate solutions, legal, transaction management and PNC credit. Advances are categorized based on four levels, reflecting the dollar amount advanced relative to potential recovery, the length of time advances outstanding, transaction-level exposure and the special servicer. All advances and recoveries made by Midland are tracked in Enterprise! and reviewed by the advance administrator as part of the monthly remittance and reporting process.

Midland's outstanding advances for securitized loans were approximately $470.8 million as of March 2023, up from $440.4 million as of March 2022. Increased advancing includes principal and interest and property protection advances, as well as interest on advances. This has increased commensurate with the Prime rate, which has more than doubled over the same period.

Midland does not have any programmatic thresholds for determining nonrecoverability, as each asset is reviewed monthly in the context of the loan, property and transaction. The SARG considers the business plan of the special servicer and the availability of information, including multiple property valuations, when making nonrecoverability determinations. Midland advises special servicers to provide it with monthly status updates on specially serviced loans. The company carefully monitors advance recoverability relative to the number of loans remaining in a transaction, total outstanding advances and potential loan resolutions or payoffs, which affects Midland's ability to recover advances without causing interest shortfalls to investment grade bonds in securitizations.

During the 12 months ended in June 2023, Midland deemed 11 loans as nonrecoverable to limit advancing exposure, generally due to lower property valuations.

Investor Reporting

The CMBS surveillance group is the primary liaison between Midland's operational groups and investors, primary servicers, trustees and rating agencies. The group has a dedicated mailbox that is monitored hourly for incoming requests. The group responds to all inquiries via email or phone. Information typically provided includes loan and property performance updates, financial data, OSARs, property rent rolls and site inspections.

The surveillance group is also responsible for monitoring all CMBS portfolios and detecting emerging issues and changes in loan or property performance. The group also conducts monthly conference calls with special servicers to provide up-to-date information on underperforming properties or loans of concern.

Monthly investor reporting is the responsibility of the investor reporting group, which assesses reporting due dates monthly to ensure sufficient employee resources are allocated to meet reporting deadlines. The group uses Midland's automated investor reporting tool to review and process monthly remittances for securitized and nonsecuritized assets. Reporting packages are distributed to trustees or third-party clients via websites or email and are also made available on Midland's dedicated investor website when allowed by the investor reporting group. The investor reporting group periodically reviews trustee reports to confirm accurate reporting and to monitor the application of funds to securitizations with potential shortfalls or complex loan modifications.

Special Servicing

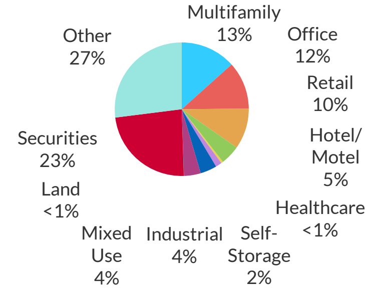
Special Servicing Portfolio

As of June 30, 2023, Midland was named special servicer for approximately 4,500 securitized loans totaling $184.7 billion in 428 transactions. As of the same date, the company had 166 actively specially serviced loans with an outstanding balance of $6.6 billion while managing five REO assets with an associated balance of $114.7 million.

There are also 10 nonsecuritized loans totaling $228.8 million in special servicing in the company's named $642.0 million nonsecuritized portfolio. Midland's nonsecuritized portfolio comprises sub- and nonperforming CRE assets for investment funds, investment banks, balance sheet lenders and government agencies. The company has a long history of demonstrated proficiency working out distressed CRE loans across all asset types, locations and complex loan structures. Recent growth in nonsecuritized special servicing is the result of a single SFR loan for a third-party balance sheet client.

Named Securitized Special Servicing Property Type

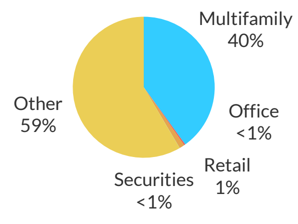
As of June 30, 2023



Source: Midland Loan Services

Named Nonsecuritized Special Servicing Property Type

As of June 30, 2023



Source: Midland Loan Services

Special Servicing Portfolio Overview

($ Mil.)	6/30/23	% Change	12/31/22	% Change	12/31/21
Securitized					
No. of Transactions — Special Servicer	428	−18	520	5	495
UPB — Special Servicer	184,711.4	−17	221,490.3	−1	224,564.6
No. of Loans — Named Special Servicer	4,461	−35	6,828	−15	8,014
UPB — Actively Special Servicer (Non-REO)	6,574.0	50	4,368.9	−33	6,498.3
No. of Loans — Actively Special Servicer (Non-REO)	166	−8	180	−35	278
UPB — REO Assets	114.7	−36	178.0	9	163.0
No. of REO Assets	5	−38	8	—	8
Nonsecuritized					
UPB — Named Special Servicer	642.0	−7	692.0	588	100.6
No. of Loans — Named Special Servicer	55	−2	56	−3	58
UPB — Actively Special Servicing (Non-REO)	228.8	2,592	8.5	−30	12.2
No. of Loans — Actively Special Servicing (Non-REO)	10	400	2	−50	4
UPB — REO Assets	—	—	1.0	—	1.0
No. of REO Assets	—	—	1	1	1

REO – Real estate owned. UPB – Unpaid principal balance.
Source: Midland Loan Services

Midland was named special servicer for 45 new securitizations during the 12 months ended in March 2023, including 20 SFR, seven SASB, five multiborrower and 13 alternative ABS transactions. For the 12 months ended in March 2023, Midland resolved 104 securitized loans totaling $1.9 billion, of which 52 loans were returned to the master servicer as corrected loans, 20 loans were paid in full, 28 were discounted payoffs/note sales and four were REO sales.

Midland transitioned its special servicing liaison to the real estate solutions group in 2022 to improve communication with special servicers. The company also holds monthly calls with most special servicers and recently provided updated contacts and escalation contacts to increase the timeliness of responses. Fitch notes that Midland's efforts to improve communication have been positive.

Loan Administration

Midland boards all loans for which it is named special servicer in Enterprise! to support performing loan surveillance and transition to special servicing in the event of a default. Loan surveillance consists of numerous queries and reports to identify watchlist loans, maturing loans and loans with deteriorating conditions using data compiled from a third-party data provider, as Midland may not be the primary servicer for all loans for which it is named special servicer. Midland's named securitized special servicing portfolio includes 276 transactions secured by CRE assets, for which the company is also named master servicer for 67% by transaction count.

In May 2023, one of Midland's largest third-party CMBS clients transferred approximately 2,000 loans totaling $33.5 billion across more than 30 securitizations to a recently established captive special servicer affiliate.

Surveillance tools within AM Insight[SM] allow the company to quickly assess the impact of potential credit events such as tenant bankruptcies, store closings and natural disasters. The company has recently placed greater focus on maturing loans and increased communication with master servicers to identify potential maturity defaults or loan covenant breaches. The real estate solutions team maintains contact with all master servicers to facilitate the review of borrower consents and maintains an open dialogue on potential loan transfers. In addition, members of the real estate solutions and collateral management services teams are in frequent contact with master servicers on potential transfer and performing loan consent matters; as such, there is an open dialogue on issues of potential concern or transfer.

Defaulted/Nonperforming Loan Management

The special servicing group has established effective procedures with external master servicers for the transfer of loans to Midland as special servicer. Transfer packages are received by a servicer liaison team that then updates Enterprise! to begin CREFC reporting. Asset managers are assigned based on factors such as the size of the loan, the skillset of the asset manager, prior experience in the market for the collateral and the complexity of the asset.

Midland's policy requires asset managers to perform an initial file review through AM Insight℠ within 10 days of transfer. The purpose of the initial file review is to familiarize the asset manager with the details of the loan documents, identify any incomplete or missing documentation, document applicable property and loan-specific information, determine an initial plan of action and provide a basis for initial discussions with the borrower and guarantors. The completed initial file review is approved by the asset manager's direct manager.

Upon transfer of a loan to special servicing, the asset manager will also conduct an inspection and analysis of the property, financial statements, market conditions and other factors that may affect the property value. The asset manager may obtain personal credit reports on individual borrowers/guarantors; research PACER, LexisNexis or other databases to which Midland subscribes; and/or access available records through the internet. Asset managers typically create an asset status report (ASR) within the first 45 days of transfer, or earlier if required by the PSA, that outlines the proposed disposition method based on initial information.

Generally, Midland pursues a dual-track resolution strategy of pursuing foreclosure while negotiating with the borrower. The asset manager also reviews the PSA to ensure compliance with the default, foreclosure and REO provisions in the event a consensual workout with the borrower cannot be reached and foreclosure is necessary. The ASR is forwarded to the directing certificate holder for their review and/or approval, as required by the PSA.

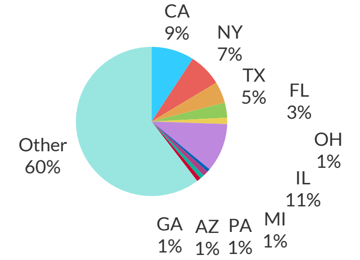
Once the initial diligence on the asset and borrower has been completed, the asset managers, in consultation with their manager, develop a resolution strategy, which is outlined in a request for approval case and approved based on Midland's delegations of authority. In evaluating possible resolution strategies, such as reinstatement, forbearance, modification, discounted payoff, foreclosure, receivership sale of collateral, guarantor pursuit, REO sale, REO stabilization, note sale or a combination thereof, asset managers prioritize alternative strategies based on the highest NPV achieved.

Day-to-day asset management monitoring is performed by an oversight manager who meets with asset managers monthly to review the progress of each specially serviced loan and compliance with Midland's policies. In addition, asset managers enter key dates and resolution milestones such as appraisal and inspection dates, comments, ASRs and alerts into AM Insight℠, which generates exception reports for senior managers. Asset managers also utilize the task management functionality within Enterprise! to track interim activities such as budgets, lease approvals, property management changes and franchise changes, among others. The use of task management allows greater oversight and tracking functionality, with outstanding items reviewed monthly by senior managers.

Midland maintains a delegated authority matrix for approval of all resolution recommendations and document execution, which requires an approval for each action by a senior manager not responsible for daily management of the asset or oversight of the asset manager. Additionally, managers who perform asset management oversight cannot be members of Midland's asset review working group, which reviews recommended actions, according to Midland's delegation of authority for loans in excess of $15 million. The asset review working group is chaired by the senior vice president of the real estate solutions group and comprises 12 senior servicing and special servicing managers and members of the legal, compliance, performing asset management and client solutions groups. The working group meets twice weekly and requires a quorum of four members and the secretary for decisions.

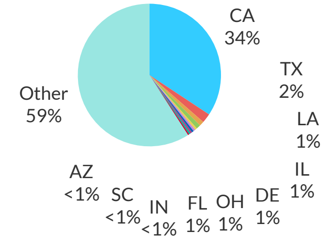
Senior managers monitor ongoing workout progress. Additionally, Midland introduced an annual business plan update and review procedure in 2023 to address changes that may occur during protracted workouts to confirm the initial approved resolution strategy remains the best recovery in

Named Securitized Special Servicing Geographic Distribution
As of June 30, 2023



Source: Midland Loan Services

Named Nonsecuritized Special Geographic Distribution
As of June 30, 2023



Source: Midland Loan Services

Midland adopted a new procedure in 2023 requiring annual updates and management approval of special servicing business plans to address changes that may occur during protracted resolution timeframes. Fitch views formal annual updates to business plans as an industry best practice, consistent with highly rated servicers.

the current market. Annual updated plans require review and approval from the head of special servicing.

As a third-party special servicer, Midland is required to seek controlling class approval of asset disposition plans and workout strategies. To obtain timely approvals and avoid potential conflicts with controlling class holders, asset managers maintain an open dialogue with controlling class holders throughout the workout process. The company has not had any material objections or lack of approval from controlling class holders to proposed workouts.

As of March 2023, active special servicing included four REO properties that had been held for more than 36 months, which required an IRS extension. Assets have an associated balance ranging from $50 million to $10 million.

REO Management

Midland currently does not have a separate REO group given the limited number of REO assets. Responsibility for foreclosure and liquidation remains with the original asset manager. When foreclosure is required, the asset manager prepares a foreclosure case that describes the property and its environmental condition and identifies a property manager and broker should the trust be the successful bidder at the foreclosure sale. Similar to ASRs, the foreclosure case is approved prior to taking title to an asset, according to Midland's delegation of authority.

Midland does not maintain separate loan workout and REO teams given the current volume of five REO assets.

The REO business plan describes the property and local market in detail and includes Midland's recommended disposition strategy based on an analysis of the alternative resolution strategies that include, at a minimum, as-is brokered sales, stabilized brokered sales and property auctions. The business plans also include operating and maintenance plans and budgets, if necessary. The asset manager also obtains current broker opinions of value and appraisals as required.

After sufficient marketing and competitive bidding, the asset manager prepares an REO disposition case recommending the sale of the property. The disposition case outlines the marketing process and results, along with sale terms, and estimates the loss due to the sale, together with an analysis of alternative strategies. This case is also approved subject to Midland's delegations of authority or asset review working group depending on the outstanding balance.

Midland's special servicing business plans compare well to those of other highly rated special servicers. Asset managers were found to be knowledgeable and able to provide current market and valuation insights relative to the disposition strategy.

Third-party property managers and brokers are identified and interviewed based on their local experience with the subject property type and are retained using standard form agreements that are terminable by either party with 30 days' notice or in the event of a sale. Property managers are required to provide monthly operating statements, account reconciliations and rent rolls for each property, which are reviewed and reconciled by the collateral management services team and the asset manager.

Governance and Conflicts of Interest

Managing Potential Conflicts

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

Midland currently performs securitized special servicing exclusively for third-party controlling class holders that have the right to appoint special servicers. While Midland, its parent or direct affiliates currently do not invest in CMBS B-pieces or subordinate loans for which Midland would be appointed special servicer, third-party controlling class holders' desire to effectuate a particular workout strategy also creates the potential for conflicts of interest.

The company's stated conflict management philosophy is to identify and document potential conflicts of interest for every transaction, communicate areas of potential conflicts of interest with all transaction parties and monitor ongoing potential conflicts. Midland employees are required to comply with PNC enterprisewide policies and procedures. These include a code of business conduct and ethics policy and an employee conduct policy. Employees are required to certify their compliance with policies and procedures and complete annual compliance training. In addition, the PNC compliance and risk management departments provide ongoing surveillance and oversight of the policies and employee compliance.

With respect to third-party controlling class holder clients, Midland's stated policy for special servicing is to pursue the resolution strategy that presents the highest recovery on an NPV basis for all investors in the transaction, consistent with the servicing standard for securitized loan workouts.

Fitch reviewed a random sample of more than 10 business plans for active specially serviced assets and discussed the status of workouts, recent valuations, market conditions and disposition expectations with asset managers. Business plans are generally well documented, containing a description of the loan and asset, workout milestones, valuation, legal and environmental analysis and disposition strategy. Asset managers were knowledgeable about the assets, local markets and efforts made to resolve the loans. Senior managers review workouts with asset managers monthly and asset managers are required to document monthly updates within AM Insight[SM] outside of business plans. Business plans of non-REO contained an NPV analysis of alternate resolution strategies where appropriate.

Affiliate Companies

Midland has used the PNC Capital Markets structured products group (SPG) within PNC to broker note sales in some instances. Midland does not have a specific policy regarding the engagement of SPG for note sales; however, it will only do so with controlling class holder consent and discloses the sale of the asset through an affiliate via CREFC reporting. No additional note sales have been brokered by SPG in the past six years.

Neither Midland nor PNC currently uses affiliate companies that provide real estate management services or CRE property brokerage services. Affiliated PNC entities may provide CRE financing options to maturing CMBS loans.

SOLICITATION & PARTICIPATION STATUS

For information on the solicitation status of the ratings included within this report, please refer to the solicitation status shown in the relevant entity's summary page of the Fitch Ratings website.

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