PENNYMAC
MORTGAGE INVESTMENT TRUST

2022 Annual Report

PennyMac Mortgage Investment Trust (NYSE: PMT) is a specialty finance company that invests primarily in residential mortgage loans and mortgage-related assets. As a real estate investment trust (REIT), our objective is to provide attractive risk-adjusted returns to our shareholders over the long-term, primarily through dividends and secondarily through capital appreciation.

Our investment focus is on mortgage-related assets that we create through our industry-leading correspondent production activities, including mortgage servicing rights (MSRs). In correspondent production, we acquire, pool and securitize or sell newly originated prime credit quality loans. Our interest rate sensitive investments include the MSRs, mortgage-backed securities and related hedge instruments. Our credit sensitive investments primarily consist of credit risk transfer investments related to loans sourced through our correspondent production that were delivered to Fannie Mae.

PMT is managed by PNMAC Capital Management, LLC, a wholly-owned subsidiary of PennyMac Financial Services, Inc. (NYSE: PFSI), and an investment adviser registered with the Securities and Exchange Commission that specializes in mortgage assets. Our correspondent production operations are conducted on a fee-for-service basis by another PennyMac Financial subsidiary, PennyMac Loan Services, LLC, which also services most of the loans in our investment portfolio and the loans for which we retain the obligation to service.

Dear Fellow Shareholders,

2022 proved to be a challenging year for the mortgage industry and mortgage REITs overall, including PMT. The Federal Reserve's tightening of monetary policy in response to high inflation drove a rapid and significant increase in mortgage rates, which ended 2022 at the highest levels observed in the last 15 years. While these higher interest rates drove strong financial performance for PMT's interest rate sensitive strategies, the results were more than offset by related tax provisions attributable to fair value changes on investments held in its taxable REIT subsidiary as well as fair value declines in its credit sensitive strategies as market credit spreads widened due to the uncertain impact higher rates may have on the broader economy. Additionally, the steep decline in the size of the origination market from $4.4 trillion in unpaid principal balance (UPB) in 2021 to an estimated $2.3 trillion in 2022, according to *Inside Mortgage Finance*, led to lower volumes and income in PMT's correspondent production segment. For the full year, PMT reported pre-tax income of $63 million. However, net of tax provisions, PMT reported a net loss of $73 million; and after distributions to preferred holders, the net loss to common shareholders was $115 million or $1.26 per common share. PMT declared and paid dividends of $1.81 per common share, which combined with the net loss resulted in a reduction in book value per common share to $15.78 at year-end from $19.05[1] at year-end 2021. While overall performance last year did not meet our expectations, the underperformance was largely driven by fair value changes of our investments and hedges. However, the fundamentals underlying PMT's diversified investment portfolio remain strong and we are confident in the earnings potential of the platform over the longer term.

In 2022, PMT created nearly $700 million of new mortgage servicing rights (MSR) and credit sensitive investments sourced primarily from $37 billion in UPB of conventional correspondent production designated for its own account. Though the mortgage origination market is expected to remain constrained in 2023 due to higher prevailing mortgage rates, we believe PMT is well-positioned given its historical orientation towards purchase money loans, which are expected to comprise the majority of originations over the next several years. Additionally, the exit of Wells Fargo, a long-term and well-respected competitor in this channel, provides opportunities for smaller community banks, credit unions and independent mortgage companies across the country to benefit by partnering with PMT, who can provide the products,

---

[1] As described in Note 3 of PMT's Annual Report on Form 10-K for the year ended December 31, 2021, an accounting change required that beginning in 2022, the portion of PMT's senior notes that were exchangeable for PMT common shares of beneficial interest originally allocated to additional paid-in capital were reclassified to the carrying value of exchangeable senior notes. Giving effect to this change on a pro forma basis, PMT's book value as of December 31, 2021 would have been $18.60.

stability and support they need to successfully navigate the current mortgage market. The investments we have made in our correspondent lending platform in recent years have made the business extremely scalable, and we stand ready and able to absorb the volumes left behind by Wells Fargo and others who have decided to exit or reduce their participation in the channel without a meaningful increase in associated expenses.

This management team has a long and successful track record of investing in and managing credit sensitive investments. Although PMT's financial performance in 2022 was negatively impacted by fair value declines in its credit sensitive strategies due to wider market credit spreads, the same market dynamics generated opportunities to deploy capital into additional credit assets at attractive risk-adjusted returns. In fact, during 2022 we created or invested in more than $200 million of new credit investments, and looking ahead to 2023 we expect additional investment opportunities to arise. Further, our front-end lender risk share investments, which comprise a large portion of our credit sensitive strategies, consist of loans originated by PMT from 2015 to 2020. Since borrowers with loans underlying these investments have built up a significant equity position in their homes as a result of seasoning and strong home price appreciation in recent years, we ultimately expect realized losses to be limited. Additionally, the vast majority of financing arrangements we maintain against those assets are term notes that do not contain margin call provisions, which has served us extraordinarily well in recent history, providing stable financing for these investments as their fair values fluctuated. While our discussions around the resumption of front-end lender risk share transactions with Fannie Mae and Freddie Mac continue, the GSEs' priorities have shifted towards the expansion of affordable home ownership, and therefore we do not expect to aggregate loans for delivery into a new front-end lender risk share transaction with the GSEs for some time.

PMT's interest rate sensitive strategies, primarily consisting of MSRs paired with Agency mortgage-backed securities, performed well in 2022 as interest rates increased meaningfully throughout the year. We expect performance in 2023 to remain strong, as the sensitivity to changes in interest rates of MSR fair values has declined meaningfully given the significant reduction in prepayment speeds from prior years and earnings from placement fees on custodial balances have increased along with short term interest rate levels.

While PMT's equity allocation to credit sensitive strategies has declined due to runoff and decreases in fair value, the allocation to interest rate sensitive strategies increased meaningfully given net new investments and fair value gains related to higher interest rates. In order to more proactively allocate equity among credit sensitive and interest rate sensitive segments, and to maintain capital for new opportunistic investments, in the fourth quarter of 2022 PMT began selling certain of its conventional correspondent loans to its manager and services provider, PennyMac Financial Services, Inc. (NYSE: PFSI), a mutually beneficial transaction for both companies that highlights the benefits of their synergistic relationship.

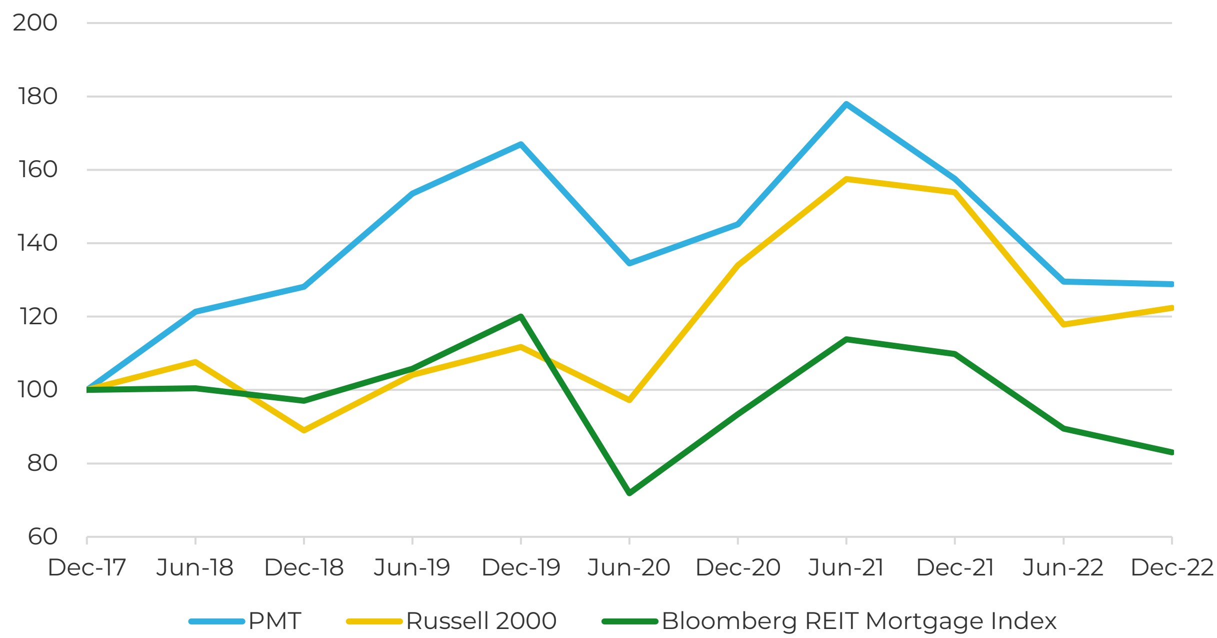
While 2022 was a year of transition for PMT, I am optimistic for improved financial performance in 2023 due to the material improvement in the credit markets year-to-date, which supports both the valuation of our credit sensitive investments and the broader structured product markets in general. I also believe PMT’s strength in correspondent lending, decreased volatility of MSR fair values, and our management team’s long, successful track record of disciplined risk management positions PMT well to deliver strong risk adjusted returns to its shareholders as we move forward. Thank you for your continued trust and confidence in PMT.

Sincerely,

David A. Spector
Chairman and Chief Executive Officer
April 21, 2023

SHARE PERFORMANCE GRAPH

The following graph and table describe certain information comparing the cumulative total return on our common shares of beneficial interest to the cumulative total return of the Russell 2000 Index and the Bloomberg REIT Mortgage Index. The comparison period is from December 31, 2017, to December 31, 2022, and the calculation assumes reinvestment of any dividends. The graph and table illustrate the value of a hypothetical investment in our common shares of beneficial interest and the two other indices on December 31, 2017.



	12/31/17	12/31/18	12/31/19	12/31/20	12/31/21	12/31/22
PMT	100	128	167	145	158	129
Russell 2000	100	89	112	134	154	122
Bloomberg REIT Mortgage Index	100	97	120	93	110	83

Source: PMT & Russell 2000 from S&P Global Market Intelligence. Bloomberg REIT Mortgage Index from Bloomberg Professional Services.

The information in the performance graph and table has been obtained from sources believed to be reliable, but neither its accuracy nor its completeness can be guaranteed. The historical information set forth above is not necessarily indicative of future performance. Accordingly, we do not make or endorse any predictions as to future share performance. The share performance graph and table shall not be deemed, under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, to be (i) “soliciting material” or “filed” or (ii) incorporated by reference by any general statement into any filing made by us with the Securities and Exchange Commission, except to the extent that we specifically incorporate such share performance graph and table by reference.

CORPORATE INFORMATION

Corporate Offices
3043 Townsgate Road
Westlake Village, CA 91361
818.224.7028
pmt.pennymac.com

2023 Annual Meeting
The 2023 Annual Meeting of Shareholders will be held at 11:00 a.m. Pacific Time on June 8, 2023, via a live webcast at www.virtualshareholdermeeting.com/PMT2023

Independent Registered Public Accounting Firm
Deloitte & Touche LLP
Los Angeles, CA

PennyMac Mortgage Investment Trust Securities
Traded: New York Stock Exchange
Common Share Symbol: PMT
Preferred Share Symbols: PMT PrA, PMT PrB, & PMT PrC

Transfer Agent
Computershare
150 Royall Street, Suite 101
Canton, MA 02021
Toll-Free 800.522.6645

Shareholder inquiries
The Annual Report on Form 10-K of PennyMac Mortgage Investment Trust filed with the SEC and other reports can be accessed via our website at pmt.pennymac.com or by emailing a request to investorrelations@pennymac.com.

As of March 31, 2023, we had approximately 139 common shareholders of record. This figure does not represent the actual number of beneficial owners of common shares because shares are frequently held in “street name” by securities dealers and others for the benefit of individual owners who may vote the shares.

Pursuant to Rule 303A.12 of the New York Stock Exchange Listed Companies Manual, each listed company CEO must certify to the NYSE each year that he or she is not aware of any violation by the company of NYSE corporate governance listing standards. David A. Spector’s annual CEO certification regarding the NYSE’s corporate governance listing standards was submitted to the NYSE on June 14, 2022.

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

Form 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2022

Or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _________ to _________

Commission file number: 001-34416

PennyMac Mortgage Investment Trust
(Exact name of registrant as specified in its charter)

Maryland (State or other jurisdiction of incorporation or organization)	**27-0186273** (IRS Employer Identification No.)
3043 Townsgate Road, Westlake Village, California (Address of principal executive offices)	**91361** (Zip Code)

(818) 224-7442
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Trading Symbol (s)	Name of Each Exchange on Which Registered
8.125% Series A Cumulative Redeemable Preferred Shares of Beneficial Interest, $0.01 Par Value	PMT/PA	New York Stock Exchange
8.00% Series B Cumulative Redeemable Preferred Shares of Beneficial Interest, $0.01 Par Value	PMT/PB	New York Stock Exchange
6.75% Series C Cumulative Redeemable Preferred Shares of Beneficial Interest, $0.01 Par Value	PMT/PC	New York Stock Exchange
Common Shares of Beneficial Interest, $0.01 Par Value	PMT	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer", "accelerated filer", "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act:

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of June 30, 2022, the aggregate market value of the registrant's common shares of beneficial interest, $0.01 par value ("common shares"), held by nonaffiliates was $1,249,688,052 based on the closing price as reported on the New York Stock Exchange on that date.

As of February 22, 2023, there were 88,892,107 common shares of the registrant outstanding.

Documents Incorporated By Reference

Document	Parts Into Which Incorporated
Definitive Proxy Statement for 2023 Annual Meeting of Shareholders	**Part III**

PENNYMAC MORTGAGE INVESTMENT TRUST
FORM 10-K
December 31, 2022
TABLE OF CONTENTS

		Page
Special Note Regarding Forward-Looking Statements		3
PART I		6
Item 1	Business	6
Item 1A	Risk Factors	18
Item 1B	Unresolved Staff Comments	47
Item 2	Properties	47
Item 3	Legal Proceedings	47
Item 4	Mine Safety Disclosures	47
PART II		48
Item 5	Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities	48
Item 6	Reserved	48
Item 7	Management’s Discussion and Analysis of Financial Condition and Results of Operations	49
Item 7A	Quantitative and Qualitative Disclosures About Market Risk	86
Item 8	Financial Statements and Supplementary Data	88
Item 9	Changes in and Disagreements With Accountants on Accounting and Financial Disclosure	89
Item 9A	Controls and Procedures	89
Item 9B	Other Information	91
Item 9C	Disclosure Regarding Foreign Jurisdictions that Prevent Inspections	91
PART III		92
Item 10	Directors, Executive Officers and Corporate Governance	92
Item 11	Executive Compensation	92
Item 12	Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	92
Item 13	Certain Relationships and Related Transactions, and Director Independence	93
Item 14	Principal Accounting Fees and Services	93
PART IV		94
Item 15	Exhibits and Financial Statement Schedules	94
Item 16	Form 10-K Summary	98
	Signatures	99

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K (“Report”) contains certain forward-looking statements that are subject to various risks and uncertainties. Forward-looking statements are generally identifiable by use of forward-looking terminology such as “may,” “will,” “should,” “potential,” “intend,” “expect,” “seek,” “anticipate,” “estimate,” “approximately,” “believe,” “could,” “project,” “predict,” “continue,” “plan” or other similar words or expressions.

Forward-looking statements are based on certain assumptions, discuss future expectations, describe future plans and strategies, contain financial and operating projections or state other forward-looking information. Examples of forward-looking statements include the following:

- projections of our revenues, income, earnings per share, capital structure or other financial items;
- descriptions of our plans or objectives for future operations, products or services;
- forecasts of our future economic performance, interest rates, profit margins and our share of future markets; and
- descriptions of assumptions underlying or relating to any of the foregoing expectations regarding the timing of generating any revenues.

Our ability to predict results or the actual effect of future events, actions, plans or strategies is inherently uncertain. Although we believe that the expectations reflected in such forward-looking statements are based on reasonable assumptions, our actual results and performance could differ materially from those set forth in the forward-looking statements. There are a number of factors, many of which are beyond our control that could cause actual results to differ significantly from management’s expectations. Some of these factors are discussed below

You should not place undue reliance on any forward-looking statement and should consider the following uncertainties and risks, as well as the risks and uncertainties discussed elsewhere in this Report and any subsequent Quarterly Reports on Form 10-Q.

Factors that could cause actual results to differ materially from historical results or those anticipated include, but are not limited to:

- changes in interest rates and other macroeconomic conditions;
- our ability to comply with various federal, state and local laws and regulations that govern our business;
- the impact to our CRT arrangements and agreements of increased borrower requests for forbearance under the Coronavirus Aid, Relief and Economic Security Act;
- changes in our investment objectives or investment or operational strategies, including any new lines of business or new products and services that may subject us to additional risks;
- the degree and nature of our competition;
- volatility in our industry, the debt or equity markets, the general economy or the real estate finance and real estate markets specifically, whether the result of market events or otherwise;
- events or circumstances which undermine confidence in the financial and housing markets or otherwise have a broad impact on financial and housing markets, such as the sudden instability or collapse of large depository institutions or other significant corporations, terrorist attacks, natural or man-made disasters, or threatened or actual armed conflicts;
- changes in general business, economic, market, employment and domestic and international political conditions, or in consumer confidence and spending habits from those expected;
- declines in real estate or significant changes in U.S. housing prices or activity in the U.S. housing market;
- the availability of, and level of competition for, attractive risk-adjusted investment opportunities in loans and mortgage-related assets that satisfy our investment objectives;
- the inherent difficulty in winning bids to acquire loans, and our success in doing so;
- the concentration of credit risks to which we are exposed;
- our dependence on our Manager and servicer, potential conflicts of interest with such entities and their affiliates, and the performance of such entities;
- changes in personnel and lack of availability of qualified personnel at our Manager, servicer or their affiliates;
- the availability, terms and deployment of short-term and long-term capital;

- the adequacy of our cash reserves and working capital;
- our substantial amount of debt;
- our ability to maintain the desired relationship between our financing and the interest rates and maturities of our assets;
- the timing and amount of cash flows, if any, from our investments;
- our exposure to risks of loss and disruptions in operations resulting from adverse weather conditions, man-made or natural disasters, climate change and pandemics such as the COVID-19 pandemic;
- unanticipated increases or volatility in financing and other costs, including a rise in interest rates;
- the performance, financial condition and liquidity of borrowers;
- the ability of our servicer, which also provides us with fulfillment services, to approve and monitor correspondent sellers and underwrite loans to investor standards;
- incomplete or inaccurate information or documentation provided by customers or counterparties, or adverse changes in the financial condition of our customers and counterparties;
- our indemnification and repurchase obligations in connection with loans we purchase and later sell or securitize;
- the quality and enforceability of the collateral documentation evidencing our ownership and rights in the assets in which we invest;
- increased rates of delinquency, default and/or decreased recovery rates on our investments;
- the performance of loans underlying mortgage-backed securities in which we retain credit risk;
- our ability to foreclose on our investments in a timely manner or at all;
- the degree to which our hedging strategies may or may not protect us from interest rate volatility;
- the effect of the accuracy of or changes in the estimates we make about uncertainties, contingencies and asset and liability valuations when measuring and reporting upon our financial condition and results of operations;
- our ability to maintain appropriate internal control over financial reporting;
- technology failures, cybersecurity risks and incidents, and our ability to mitigate cybersecurity risks and cyber intrusions;
- our ability to obtain and/or maintain licenses and other approvals in those jurisdictions where required to conduct our business;
- our ability to detect misconduct and fraud;
- developments in the secondary markets for our loan products;
- legislative and regulatory changes that impact the loan industry or housing market;
- changes in regulations that impact the business, operations or governance of mortgage lenders and/or publicly-traded companies or such changes that increase the cost of doing business with such entities;
- the Consumer Financial Protection Bureau and its issued and future rules and the enforcement thereof;
- changes in government support of homeownership;
- our ability to effectively identify, manage and hedge our credit, interest rate, prepayment, liquidity, and climate risks;
- changes in government or government-sponsored home affordability programs;
- limitations imposed on our business and our ability to satisfy complex rules for us to qualify as a real estate investment trust ("REIT") for U.S. federal income tax purposes and qualify for an exclusion from the Investment Company Act of 1940 and the ability of certain of our subsidiaries to qualify as REITs or as taxable REIT subsidiaries for U.S. federal income tax purposes, as applicable, and our ability and the ability of our subsidiaries to operate effectively within the limitations imposed by these rules;
- changes in governmental regulations, accounting treatment, tax rates and similar matters (including changes to laws governing the taxation of REITs, or the exclusions from registration as an investment company);

- our ability to make distributions to our shareholders in the future;
- our failure to deal appropriately with issues that may give rise to reputational risk; and
- our organizational structure and certain requirements in our charter documents.

Other factors that could also cause results to differ from our expectations may not be described in this Report or any other document. Each of these factors could by itself, or together with one or more other factors, adversely affect our business, results of operations and/or financial condition.

Forward-looking statements speak only as of the date they are made, and we undertake no obligation to update any forward-looking statement to reflect the impact of circumstances or events that arise after the date the forward-looking statement was made.

PART I

Item 1. Business

The following description of our business should be read in conjunction with the information included elsewhere in this Report. This description contains forward-looking statements that involve risks and uncertainties. Actual results could differ significantly from the projections and results discussed in the forward-looking statements due to the factors described under the caption "Risk Factors" and elsewhere in this Report. References in this Report to "we," "our," "us," "PMT," or the "Company" refer to PennyMac Mortgage Investment Trust and its consolidated subsidiaries, unless otherwise indicated.

Our Company

We are a specialty finance company that invests primarily in mortgage-related assets. We conduct substantially all of our operations, and make substantially all of our investments, through PennyMac Operating Partnership, L.P. (our "Operating Partnership") and its subsidiaries. A wholly-owned subsidiary of ours is the sole general partner, and we are the sole limited partner, of our Operating Partnership. Certain of the activities conducted or investments made by us that are described below are conducted or made through a wholly-owned subsidiary that is a taxable REIT subsidiary ("TRS") of our Operating Partnership.

The management of our business and execution of our operations is performed on our behalf by subsidiaries of PennyMac Financial Services, Inc. ("PFSI"). PFSI is a specialty financial services firm focused on the production and servicing of loans and the management of investments related to the U.S. mortgage market. Specifically:

- We are managed by PNMAC Capital Management, LLC ("PCM" or our "Manager"), a wholly-owned subsidiary of PFSI and an investment adviser registered with the United States Securities and Exchange Commission ("SEC") that specializes in, and focuses on, U.S. mortgage assets.
- Our loan production and servicing activities (as described below) are performed on our behalf by another wholly-owned PFSI subsidiary, PennyMac Loan Services, LLC ("PLS" or our "Servicer").

Our investment focus is on residential mortgage-backed securities ("MBS") and mortgage-related assets that we create through our correspondent production activities. Correspondent production activities include purchasing, pooling and selling newly originated prime credit quality residential loans ("correspondent production"). Through our correspondent production activities, we create and hold mortgage servicing rights ("MSRs"), non-Agency MBS, credit risk transfer ("CRT") agreements ("CRT Agreements"), and other CRT securities (together, "CRT arrangements").

Our business includes four segments: credit sensitive strategies, interest rate sensitive strategies, correspondent production, and corporate.

- The credit sensitive strategies segment represents our investments in CRT arrangements, subordinate MBS, distressed loans and real estate.
- The interest rate sensitive strategies segment represents our investments in MSRs, excess servicing spread ("ESS") purchased from PFSI, Agency and senior non-Agency MBS and the related interest rate hedging activities.
- The correspondent production segment represents our operations aimed at serving as an intermediary between lenders and the capital markets by purchasing, pooling and reselling newly originated prime credit quality loans either directly or in the form of MBS, using the services of PCM and PLS.

  We primarily sell the loans we acquire through our correspondent production activities to government-sponsored entities ("GSEs") such as the Federal National Mortgage Association ("Fannie Mae") and the Federal Home Loan Mortgage Corporation ("Freddie Mac") or to PLS for sale into securitizations guaranteed by the Government National Mortgage Association ("Ginnie Mae"). Fannie Mae, Freddie Mac and Ginnie Mae are each referred to as an "Agency" and, collectively, as the "Agencies."
- Our corporate segment includes management fee and corporate expense amounts and certain interest income.

Following is a summary of our segment results for the years presented:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Net investment income:			
Credit sensitive strategies	$ (106,772)	$ 323,121	$ (305,340)
Interest rate sensitive strategies	297,726	(204,665)	174,558
Correspondent production	111,078	298,925	597,222
Corporate	1,739	2,916	2,911
	$ 303,771	$ 420,297	$ 469,351
Pretax income:			
Credit sensitive strategies	$ (112,566)	$ 306,643	$ (317,143)
Interest rate sensitive strategies	207,802	(290,065)	105,697
Correspondent production	27,557	86,936	344,639
Corporate	(59,706)	(58,853)	(53,463)
	$ 63,087	$ 44,661	$ 79,730
Total assets at year end:			
Credit sensitive strategies	$ 1,614,977	$ 1,848,294	$ 2,920,558
Interest rate sensitive strategies	9,991,621	7,363,878	4,593,127
Correspondent production	1,936,797	4,325,750	3,781,010
Corporate	378,169	234,786	197,316
	$ 13,921,564	$ 13,772,708	$ 11,492,011

In our correspondent production segment, we purchase Agency-eligible and jumbo loans. A jumbo loan is a loan in an amount that exceeds the maximum loan amount for loans that are eligible for sale to the Agencies under their guidelines. We then either:

- sell Agency-eligible loans meeting the guidelines of the government-sponsored entities eligibility of loans for sale to Fannie Mae or Freddie Mac (“GSEs-Eligible Loans”) on a servicing-retained basis whereby we retain the related MSRs;
- sell government loans (insured by the Federal Housing Administration or guaranteed by the U.S. Department of Veterans Affairs or U.S. Department of Agriculture) and certain GSEs-Eligible Loans on a servicing-released basis to PLS, a Ginnie Mae approved issuer and servicer, for which we earn sourcing fees as described in Note 4 – *Transactions with Related Parties* to the consolidated financial statements included in this Report;
- create and issue structured MBS, retain a portion of the subordinate securities and sell the remaining senior MBS to nonaffiliates; or
- sell loans with certain specified characteristics to banks or other investors, generally on a servicing retained basis.

Our correspondent production segment involves purchases of loans from approved mortgage originators that meet specific criteria related to management experience, financial strength, risk management controls and loan quality. During 2022, we were the largest correspondent aggregator in the United States as ranked by Inside Mortgage Finance. As of December 31, 2022, we had 722 approved sellers with delegated underwriting authority, primarily independent mortgage originators and small banks located across the United States. PLS also serves as a source of correspondent production to us.

Following is a summary of our correspondent production activities:

	Year ended December 31, 2022	2021	2020
		(in thousands)	
Correspondent loan purchases at fair value:			
GSEs-Eligible Loans (1)	$ 41,575,252	$ 113,667,618	$ 106,472,654
Held for sale to PLS – Government insured or guaranteed (2)	46,562,853	67,702,945	63,574,547
Jumbo	5,029	—	—
Home equity lines of credit	132	—	2,569
	$ 88,143,266	$ 181,370,563	$ 170,049,770
Interest rate lock commitments issued	$ 91,031,903	$ 172,953,139	$ 185,414,040
Fair value of loans at year end pending sale to:			
Nonaffiliates	$ 1,662,262	$ 3,856,030	$ 3,085,910
PLS	159,671	314,995	460,414
	$ 1,821,933	$ 4,171,025	$ 3,546,324
Number of approved sellers at year-end (2)	722	768	714

(1) The Company sells or finances a portion of its GSEs-Eligible Loans production to or with other investors, including PLS.
(2) Includes only sellers with delegated underwriting authority.

The sale of loans to nonaffiliates from our correspondent production activities serves as the source of our investments in MSRs, CRT arrangements and subordinate non-Agency MBS which are summarized below:

	Year ended December 31, 2022	2021	2020
		(in thousands)	
Sales of loans acquired for sale:			
To nonaffiliates	$ 39,077,156	$ 110,919,477	$ 106,306,805
To PennyMac Financial Services, Inc.	50,575,617	67,851,630	63,618,185
	$ 89,652,773	$ 178,771,107	$ 169,924,990
Net gains on loans acquired for sale	$ 25,692	$ 87,273	$ 379,922
Investment activities resulting from correspondent production:			
Receipt of MSRs as proceeds from sales of loans	$ 670,343	$ 1,484,629	$ 1,158,475
Retention of interests in securitizations of loans secured by investment properties, net of associated asset-backed financings	23,485	42,256	—
Purchase of subordinate bonds backed by previously-sold loans secured by investment properties held in consolidated variable interest entities	—	28,815	—
Investments in CRT arrangements:			
Deposits securing CRT arrangements	—	—	1,700,000
Recognition of firm commitment to purchase CRT securities (1)	—	—	(38,161)
Change in face amount of firm commitment to purchase CRT securities and commitment to fund *Deposits securing CRT arrangements*	—	—	(1,502,203)
Total investments in CRT arrangements	—	—	159,636
Total investments resulting from correspondent activities	$ 693,828	$ 1,555,700	$ 1,318,111

(1) Initial recognition of firm commitment upon sale of loans.

We also invest in MBS and have historically invested in ESS on MSRs acquired by PLS and distressed mortgage assets (loans and real estate acquired in settlement of loans (“REO”)). We have liquidated our investment in ESS and substantially liquidated our investment in distressed mortgage assets.

Following is a summary of our acquisitions of other mortgage-related investments:

	Year ended December 31, 2022	2021	2020
		(in thousands)	
MBS, net of sales	$ 2,638,267	$ 932,270	$ 352,307
ESS, net of sale	—	(129,304)	2,093
	$ 2,638,267	$ 802,966	$ 354,400

Our portfolio of mortgage investments was comprised of the following:

	December 31, 2022	2021	2020
		(in thousands)	
Credit sensitive assets:			
CRT arrangements, net (1)	$ 1,144,078	$ 1,686,445	$ 2,617,509
Subordinate credit-linked mortgage-backed securities	177,898	—	—
Subordinate interests in loans held in VIEs, net of associated asset-backed financings	84,044	85,266	8,981
Distressed loans at fair value	3,457	4,161	8,027
Real estate acquired in settlement of loans	7,734	14,382	28,709
Other (2)	2,424	4,229	6,576
	1,419,635	1,794,483	2,669,802
Interest rate sensitive assets:			
Mortgage-backed securities	4,284,703	2,666,768	2,213,922
Mortgage servicing rights at fair value	4,012,737	2,892,855	1,755,236
Excess servicing spread	—	—	131,750
Net interest rate lock commitments	(478)	2,451	72,386
Net interest rate hedges (3)	77,483	(2,546)	(123,490)
	8,374,445	5,559,528	4,049,804
	$ 9,794,080	$ 7,354,011	$ 6,719,606

(1) Investments in CRT arrangements include deposits securing CRT arrangements, CRT strips, CRT derivatives and an interest-only security payable.
(2) Comprised of home equity lines of credit and a small balance commercial loan.
(3) Derivative assets, net of derivative liabilities, excluding interest rate lock commitments ("IRLCs") and CRT derivatives.

Over time, our targeted asset classes may change as a result of changes in the opportunities that are available in the market, among other factors. We may not continue to invest in certain of the investments described above if we believe those types of investments will not provide us with suitable returns or if we believe other types of our targeted assets provide us with better returns.

Investment Policies

Our board of trustees has adopted the policies set forth below for our investments and borrowings. PCM reviews its compliance with our investment policies regularly and reports periodically to our board of trustees regarding such compliance.

- No investment shall be made that would cause us to fail to qualify as a REIT for U.S. federal income tax purposes;
- No investment shall be made that would cause us to be regulated as an investment company under the Investment Company Act of 1940 (the "Investment Company Act"); and
- With the exception of real estate and housing, no single industry shall represent more than 20% of the investments or total risk exposure in our portfolio.

These investment policies may be changed by a majority of our board of trustees without the approval of, or prior notice to, our shareholders.

We have not adopted a policy that expressly prohibits our trustees, officers, shareholders or affiliates from having a direct or indirect financial interest in any investment to be acquired or disposed of by us or in any transaction to which we are a party or have an interest. We do not have a policy that expressly prohibits any such persons from engaging for their own account in business activities of the types conducted by us. However, our code of business conduct and ethics contains a conflicts of interest policy that prohibits our trustees and officers, as well as employees of PFSI and its subsidiaries who provide services to us, from engaging in any transaction that involves an actual or apparent conflict of interest with us without the appropriate approval. We also have written policies and procedures for the review and approval of related party transactions, including oversight by designated committees of our board of trustees and PFSI's board of directors.

Competition

In our correspondent production activities, we compete with large financial institutions, the government-sponsored enterprise cash windows and other independent residential loan producers and servicers such as Mr. Cooper, Rithm Capital Corp., Truist Financial, Western Alliance Bank and Ocwen Financial. We compete on the basis of product offerings, technical knowledge, loan quality, speed of execution, rate and fees.

In the acquisition of mortgage assets, we compete with specialty finance companies, private funds, other mortgage REITs, thrifts, banks, mortgage bankers, insurance companies, mutual funds, institutional investors, investment banking firms, governmental bodies and other entities such as Chimera Investment Corporation, Invesco Mortgage Capital Inc., Rithm Capital Corp., MFA Financial, Inc., New York Mortgage Trust, Redwood Trust Inc. and Two Harbors Investment Corp., which may also be focused on acquiring mortgage-related assets, and therefore may increase competition for the available supply of mortgage assets suitable for purchase.

Many of our competitors are significantly larger than we are and have stronger financial positions and greater access to capital and other resources than we have and may have other advantages over us. Such advantages include the ability to obtain lower-cost financing, such as deposits, and operational efficiencies arising from their larger size.

Some of our competitors may have higher risk tolerances or different risk assessments and may not be subject to the operating constraints associated with REIT tax compliance or maintenance of an exclusion from the Investment Company Act, any of which could allow them to consider a wider variety of investments and funding strategies and to establish more relationships with sellers of mortgage assets than we can.

Because the availability of mortgage assets may fluctuate, the competition for assets and sources of financing may increase. Increased competition for assets may result in our accepting lower returns for acquisitions of assets or adversely influence our ability to bid for such assets at levels that allow us to acquire the assets.

To address this competition, we have access to PCM's professionals and their industry expertise, which we believe provides us with a competitive advantage and helps us assess investment risks and determine appropriate pricing for certain potential investments. We expect this relationship to enable us to compete more effectively for attractive investment opportunities. Furthermore, we believe that our access to PLS servicing expertise provides us with a competitive advantage over other companies with a similar focus. However, we can provide no assurance that we will be able to achieve our business goals or expectations due to the competition and other risks that we face.

Cyclicality and Seasonality

The demand for loan originations is affected by consumer demand for home loans. Demand for home loans generally comes from the demand for loans made to finance the purchase of homes and the demand for loans made to refinance existing loans.

The demand for loans made to finance the purchase of homes is most significantly influenced by the overall strength of the economy, housing prices and availability and societal factors such as household formation and government support for home ownership.

The demand for loans made to refinance existing loans is most significantly influenced by movements in interest rates and to a lesser extent, to changes in property values and employment.

Our Financing Activities

Following is a summary of our financing, including borrowings and the assets pledged to secure those borrowings as of December 31, 2022:

Financing	Assets financed: MBS	Loans acquired for sale	Loans at fair value	CRT assets	MSRs (1)	REO	Total
				(in thousands)			
Borrowings							
Short term							
Assets sold under agreements to repurchase	$ 4,250,638	$ 1,678,554	$ 64,501	$ 237,835	$ 385,000	$ —	$ 6,616,528
Mortgage loan participation purchase and sale agreements	—	—	—	—	—	—	—
Long term							
Notes payable secured by CRT arrangements and MSRs	—	—	—	591,027	2,213,001	—	2,804,028
Asset-backed financings at fair value	—	—	1,414,955	—	—	—	1,414,955
Interest-only security payable	—	—	—	21,925	—	—	21,925
Total secured borrowings	4,250,638	1,678,554	1,479,456	850,787	2,598,001	—	10,857,436
Exchangeable senior notes							546,254
Total borrowings	$ 4,250,638	$ 1,678,554	$ 1,479,456	$ 850,787	$ 2,598,001	$ —	11,403,690
Shareholders' equity							1,962,815
Total financing							$ 13,366,505
Assets pledged to secure borrowings	$ 4,462,601	$ 1,801,368	$ 1,510,148	$ 1,326,556	$ 4,063,708	$ 3,297	$ 13,167,678
Debt-to-equity ratio:							
Excluding non-recourse debt							5.1:1
Total							5.8:1

(1) Amounts pledged to secure borrowings include pledged servicing advances.

Debt

Our current debt financing strategy is to finance our assets in such a way as to match the term of the liabilities used to finance them to the expected life of the underlying assets where we believe such borrowing is prudent, appropriate and available. Our borrowings are primarily collateralized borrowings in the form of sales of assets under agreements to repurchase, loan and security agreements, and loan participation purchase and sale agreements. We supplement these borrowings with long-term securitized notes, including secured term financing for our MSRs and our CRT arrangements.

Terms of our borrowings are summarized in Notes 14 and 15 to our consolidated financial statements included in this Report. A significant portion of our balance sheet is comprised of longer-lived assets - such as MSRs, servicing advances, CRT arrangements and distressed loans - that have historically been less liquid, and more difficult to finance than our newly originated mortgage loans and MBS. As a result, we have historically relied on shorter-term financing arrangements, primarily sales of the assets under agreements to repurchase, to finance our longer-lived assets. As we have grown, our ability to finance more of our assets under longer term arrangements that more closely align the term of the borrowings with the expected life of the corresponding assets, on terms that are economically viable for us, has increased.

Following is a summary of the types of debt we use to finance our investing and operating activities:

Short-term debt

Sales of assets under agreements to repurchase

Our largest source of debt financing is the sale of assets under agreements to repurchase. Under these agreements, we sell assets or participation certificates to a lender under a commitment to repurchase the asset or participation certificate within a specified period - generally ranging from 30 to 90 days for MBS and CRT assets, 60 to 120 days for mortgage loans and two to five years for participation certificates secured by MSRs.

During the period the agreement to repurchase is outstanding, our lender is generally contractually authorized to repledge the assets underlying the repurchase agreement. The repurchase agreements generally contain margin provisions that require us to maintain our borrowings at a specified percentage of the fair value of the assets pledged to secure the borrowings. As a result, we are subject to margin calls during the period the repurchase agreements are outstanding and, therefore, may be required to repay a portion of the borrowings before the respective repurchase agreements mature if the fair value (as determined by the applicable lender) of the assets securing those repurchase agreements decreases.

We are exposed to loss in the event a lender makes a margin call to us and we are unable to fund the margin call. In such a circumstance, the lender is contractually allowed to liquidate the assets securing the repurchase agreement and pursue repayment from us for any balance not satisfied through the sale of the collateral. To the extent we finance long-lived assets with repurchase agreements, we are also exposed to the risk of our being unable to refinance these assets under terms that are reasonable to us when the repurchase agreements mature.

Our repurchase agreement facilities include a mix of committed and uncommitted facilities. Committed facilities contractually bind the lender to purchase assets meeting the criteria of the credit facility up to a committed amount, whereas the lender is not required to fund repurchase agreements on uncommitted amounts. We pay a facility commitment fee to maintain committed amounts and endeavor to minimize our borrowing costs while maintaining adequate committed amounts to fund our expected loan inventory levels during the facility commitment period.

Mortgage loan participation purchase and sale agreements

We finance a portion of our inventory of loans acquired for sale using mortgage loan participation purchase and sale agreements. Under mortgage loan participation purchase and sale agreements, we sell participation certificates to a lender, representing undivided beneficial ownership interests in pools of loans deemed eligible to back pass-through MBS issued and guaranteed by Fannie Mae or Freddie Mac, while the pools are pending securitization and the sale of the resulting securities. As part of the sale of the participation certificates, we arrange to deliver the resulting securities to the lender, and assign the commitments between us and nonaffiliates to sell the securities.

Mortgage loan participation purchase and sale certificates generally have a term of up to 45 days based on the anticipated delivery date of the related MBS and are repaid when the nonaffiliated investors purchase the securities.

Our mortgage loan participation purchase and sale agreement facilities are both committed and uncommitted facilities. Mortgage loan participation certificates do not contain margin call provisions. However, in the event the purchasers of the securities fail to settle the purchase, we are obligated to purchase the securities from the lender.

Loan and security agreements

We finance our MSRs related to mortgage loans pooled into Freddie Mac securities using a loan and security agreement or similar credit agreements with terms to maturity of two years from their original effective dates. Under the agreements, we borrow amounts collateralized by the MSRs, the fair value of which is determined by the lender or a third-party agent, on a monthly basis, or at the discretion of the lender. The lender makes available both committed and uncommitted amounts, with the maximum maturity of borrowed balances not to exceed the maturity of the agreements.

The agreements include provisions that require us to maintain our borrowings at a level not to exceed a specified percentage of the fair value of the MSRs pledged to secure the borrowings. As a result, we are subject to margin calls during the period if any amount is outstanding under the agreements. We are exposed to loss in the event the lender makes a margin call to us and we are unable to fund the margin call. In such a circumstance, the lender is contractually allowed to liquidate any portion of the MSRs securing the agreements and pursue repayment from us for any balance not satisfied through their subsequent sale of the MSRs.

Long-term debt

Notes payable secured by CRT arrangements and MSRs

Our notes payable secured by CRT arrangements and MSRs represent long-term financing of our CRT and MSR assets and include:

- $1.1 billion in secured term notes issued to qualified institutional buyers under Rule 144A of the Securities Act of 1933, as amended (the “Securities Act”). The term notes are secured by MSRs on Fannie Mae loans that are pledged to a subsidiary trust that has also issued variable funding notes (“VFNs”) that may be financed with certain lenders in the form of sales of assets under agreements to repurchase. VFNs are typically used to finance a portion of the fair value of MSRs held by the subsidiary trust in excess of the fair value required to collateralize the secured term notes. The term notes include margin call provisions that require us to maintain a certain advance rate based on the fair value of the underlying MSRs. As the fair value of MSRs is subject to periodic fluctuation, we are required to either pledge additional MSRs or cash to the subsidiary trust when the fair value of the MSRs decreases even though the borrowings have a long-term maturity.
- $1.1 billion in various credit agreements secured by Freddie Mac MSRs
- $593 million of term notes secured by our investment in CRT assets issued to qualified institutional buyers under Rule 144A of the Securities Act. These term notes do not include margin call provisions. However, these term notes must be repaid based on the amortization of the CRT assets that collateralize them. These term notes have maturities ranging from March 2023 through October 2024. A portion of these term notes have terms that provide for optional extensions of two years under conditions provided in the respective agreements.

Asset-backed financings

We have participated in various transactions whereby we invest in subordinate securities issued in loan securitizations. These transactions are sponsored by us or a nonaffiliate. We acquire the loans underlying these loan securitizations through our correspondent lending activities. We then either sell the loans to a nonaffiliate which pools the loans into securities, or we pool the loans into securities issued by one of our subsidiary trusts. We purchase subordinate securities from nonaffiliate sponsored transactions and retain subordinate securities in the transactions we sponsored. Any mortgage servicing rights for the loans underlying these securities are owned by us, and sub-serviced by PLS for the subsidiary trusts issuing the securities.

Because we hold substantially all of the subordinate securities created in these transactions and we or PLS service the underlying loans, we include the assets of the issuing trust on our consolidated balance sheet, primarily in *Loans at fair value.* We also include the securities issued to nonaffiliates by the issuing trusts as *Asset-backed financings at Fair Value* on our consolidated balance sheet.

This debt is repaid by the issuing trust from the cash flows received on the loans underlying these subordinated securities. Cash flows from those loans represent the sole source of repayment of this debt and the holders of this debt have no recourse to other assets on our consolidated balance sheet. The maturities of these financings are based on the loan(s) with the latest maturity of the loans in the issuing subsidiary trusts.

Interest-only security payable

One of the classes of the securities issued by the trusts relating to our investments in CRT arrangements is an interest-only security that was offered to a nonaffiliate. As discussed in Note 6 – *Variable Interest Entities* to the consolidated financial statements included in this Report, we consolidate the trusts that issue the securities underlying our investments in the CRT arrangements. As part of the consolidation of the CRT arrangements, we recognize this interest-only security.

This debt is repaid by the issuing trust from the cash flows based on the reference loans underlying these securities. Cash flows from those loans represent the sole source of repayment of this security and its holder has no recourse to other assets on our consolidated balance sheet.

Exchangeable senior notes

We have $210 million in outstanding exchangeable senior notes due to mature on November 1, 2024, and $345 million in outstanding exchangeable senior notes due on mature on March 15, 2026. The exchangeable senior notes are unsecured obligations. The exchangeable senior notes are exchangeable into 40.101 PMT common shares per $1,000 principal amount for the notes maturing on November 1, 2024 and 46.1063 PMT common shares per $1,000 principal amount for the notes maturing on March 15, 2026, subject to adjustment upon the occurrence of certain events. The exchangeable senior notes bear interest at 5.50%.

Equity

Our shareholders' equity includes both common and cumulative preferred shares, partially offset by our accumulated deficit as summarized below:

	December 31,		
	2022	**2021**	**2020**
		(in thousands)	
Paid-in capital			
Preferred shares	$ 541,482	$ 541,482	$ 299,707
Common shares	1,948,155	2,082,706	2,097,886
	2,489,637	2,624,188	2,397,593
Accumulated deficit	(526,822)	(256,670)	(100,734)
	$ 1,962,815	$ 2,367,518	$ 2,296,859

We actively manage our equity financing and endeavor to obtain an equity structure that optimizes the returns to our common shareholders. This approach to managing our equity includes supplementing our common shares with issuances of preferred shares and common share repurchase activities. At December 31, 2022, we had $200 million of common shares available for issuance under our at-the-market equity offering program and $101.3 million authorized for share repurchases.

Following is a summary of our offerings and repurchases of common shares:

Year ended December 31,	Share offerings	Share repurchases
	(in thousands)	
2022	$ —	$ 87,992
2021	$ —	$ 56,855
2020	$ 5,597	$ 37,267

Our preferred shares are comprised of three series of $25 par value cumulative preferred shares that have dividend rates ranging from 6.75% to 8.125% of their par values and liquidation preferences totaling $560 million. Our preferred shares have no stated maturity, are not subject to any sinking fund or mandatory redemption and will remain outstanding indefinitely unless we redeem or repurchase the shares or the shares are converted into common shares in connection with a change of control by the holders of the preferred shares, as provided in the respective articles supplementary establishing the terms of each series of preferred shares. The preferred shares become redeemable between March 15, 2024 and August 24, 2026.

As a REIT, we face limits on our ability to finance our operations and investments with retained earnings, as we are generally required to distribute to our shareholders at least 90% of our taxable income each year for us to qualify as a REIT under the Internal Revenue Code of 1986 (the "Internal Revenue Code"). To the extent we satisfy the 90% distribution requirement but distribute less than 100% of our taxable income, we are subject to U.S. federal corporate income tax on our undistributed taxable income. We establish the level of our periodic common share distributions based on this requirement as well as our earnings, our financial condition and such other factors as our board of trustees may deem relevant from time to time.

Operating and Regulatory Structure

Taxation – REIT Qualification

We have elected to be treated as a REIT under Sections 856 through 860 of the Internal Revenue Code beginning with our taxable year ended December 31, 2009. Our qualification as a REIT depends upon our ability to meet on a continuing basis, through actual investment and operating results, various complex requirements under the Internal Revenue Code relating to, among other things, the sources of our gross income, the composition and values of our assets, our distribution levels and the diversity of ownership of our common shares. We believe that we are organized in conformity with the requirements for qualification and taxation as a REIT under the Internal Revenue Code, and that our manner of operation enables us to meet the requirements for qualification and taxation as a REIT.

As a REIT, we generally are not subject to U.S. federal income tax on the REIT taxable income we distribute to our shareholders. If we fail to qualify as a REIT in any taxable year and do not qualify for certain statutory relief provisions, we will be subject to U.S. federal income tax at regular corporate rates and may be precluded from qualifying as a REIT for the subsequent four taxable years following the year during which we lost our REIT qualification. Accordingly, our failure to qualify as a REIT could have a material adverse impact on our results of operations and amounts available for distribution to our shareholders.

Even though we have elected to be taxed as a REIT, we are subject to some U.S. federal, state and local taxes on our income or property. A portion of our business is conducted through, and a portion of our income is earned in, our TRS that is subject to corporate income taxation. In general, a TRS of ours may hold assets and engage in activities that we cannot hold or engage in directly and may engage in any real estate or non-real estate related business. A TRS is subject to U.S. federal, state and local corporate income taxes. To maintain our REIT election, at the end of each quarter no more than 20% of the value of a REIT's assets may consist of stock or securities of one or more TRSs.

If our TRS generates net income, our TRS can declare dividends to us, which will be included in our taxable income and necessitate a distribution to our shareholders. Conversely, if we retain earnings at the TRS level, no distribution is required and we can increase shareholders' equity of the consolidated entity. As discussed in Section 1A. of this Report entitled *Risk Factors*, the combination of the requirement to maintain no more than 20% of our assets in the TRS coupled with the effect of TRS dividends on our income tests creates compliance complexities for us in the maintenance of our qualified REIT status.

The dividends paid deduction of a REIT for qualifying dividends to its shareholders is computed using our taxable income as opposed to net income reported on our financial statements. Taxable income generally differs from net income reported on our financial statements because the determination of taxable income is based on tax laws and regulations and not financial accounting principles.

Compliance and Regulation

Our business is subject to extensive federal, state and local regulation. The Consumer Financial Protection Bureau ("CFPB") was established on July 21, 2010 under Title X of the Dodd-Frank Wall Street Reform and Consumer Protection Act. The CFPB is responsible for ensuring consumers are provided with timely and understandable information to make responsible decisions about financial transactions, federal consumer financial laws are enforced and consumers are protected from unfair, deceptive, or abusive acts and practices and from discrimination. Although the CFPB's actions may improve consumer protection, such actions also have resulted in a meaningful increase in costs to consumers and financial services companies including mortgage originators and servicers.

Our and our Manager's loan production and loan servicing operations are regulated at the state level by state licensing authorities and administrative agencies. Our Manager's employees who engage in regulated activities must apply for licensing as a mortgage banker or lender, loan servicer and debt collector pursuant to applicable state law. These state licensing requirements typically require an application process, the payment of fees, background checks and administrative review. Our Manager's servicing operations are licensed (or exempt or otherwise not required to be licensed) to service mortgage loans in all 50 states, the District of Columbia, Guam and the U.S. Virgin Islands. From time to time, we or our Manager receive requests from states and Agencies and various investors for records, documents and information regarding our policies, procedures and practices regarding our loan production and loan servicing business activities, and undergo periodic examinations by federal and state regulatory agencies.

The Secure and Fair Enforcement for Mortgage Licensing Act of 2008 (the "SAFE Act") requires all states to enact laws that require all individuals acting in the United States as mortgage loan originators to be individually licensed or registered if they intend to offer mortgage loan products. These licensing requirements include enrollment in the Nationwide Mortgage Licensing System, application to state regulators for individual licenses and the completion of pre-licensing education, annual education and the successful completion of both national and state exams.

We must comply with a number of federal consumer protection laws, including, among others:

- the Real Estate Settlement Procedures Act ("RESPA"), and Regulation X thereunder, which require certain disclosures to mortgagors regarding the costs of mortgage loans, the administration of tax and insurance escrows, the transferring of servicing of mortgage loans, the response to consumer complaints, and payments between lenders and vendors of certain settlement services;
- the Truth in Lending Act ("TILA"), and Regulation Z thereunder, which require certain disclosures to mortgagors regarding the terms of their mortgage loans, notices of sale, assignments or transfers of ownership of mortgage loans, new servicing rules involving payment processing, and adjustable rate mortgage change notices and periodic statements;
- the Equal Credit Opportunity Act and Regulation B thereunder, which prohibit discrimination on the basis of age, race and certain other characteristics, in the extension of credit;
- the Fair Housing Act, which prohibits discrimination in housing on the basis of race, sex, national origin, and certain other characteristics;
- the Home Mortgage Disclosure Act and Regulation C thereunder, which require financial institutions to report certain public loan data;
- the Homeowners Protection Act, which requires the cancellation of private mortgage insurance once certain equity levels are reached, sets disclosure and notification requirements, and requires the return of unearned premiums;
- the Servicemembers Civil Relief Act, which provides, among other things, interest and foreclosure protections for service members on active duty;
- the Gramm-Leach-Bliley Act and Regulation P thereunder, which require us to maintain privacy with respect to certain consumer data in our possession and to periodically communicate with consumers on privacy matters;
- the Fair Debt Collection Practices Act, which regulates the timing and content of debt collection communications;
- the Fair Credit Reporting Act and Regulation V thereunder, which regulate the use and reporting of information related to the credit history of consumers;
- the National Flood Insurance Reform Act of 1994, which provides for lenders to require borrowers/owners of properties in special flood hazard areas to purchase flood insurance for such properties, or for lenders to purchase flood insurance on behalf of such borrowers/owners; and
- the CARES Act, which allows borrowers with federally-backed loans to request temporary payment forbearance in response to the increased borrower hardships resulting from the ongoing COVID-19 pandemic.

Many of these laws are further impacted by the SAFE Act and implementation of new rules by the CFPB.

Our Manager and Our Servicer

We are externally managed and advised by PCM pursuant to a management agreement. PCM specializes in and focuses on investments in U.S. mortgage assets.

PCM is responsible for administering our business activities and day-to-day operations, including developing our investment strategies, and sourcing and acquiring mortgage-related assets for our investment portfolio. Pursuant to the terms of the management agreement, PCM provides us with our senior management team, including our officers and support personnel. PCM is subject to the supervision and oversight of our board of trustees and has the functions and authority specified in the management agreement.

We also have a loan servicing agreement with PLS, pursuant to which PLS provides primary and special servicing for our portfolio of residential loans and MSRs. PLS' loan servicing activities include collecting principal, interest and escrow account payments, accounting for and remitting collections to investors in the loans, responding to customer inquiries, and default management activities, including managing loss mitigation, which may include, among other things, collection activities, loan workouts, modifications and refinancings, foreclosures, short sales and sales of REO. Servicing fee rates are based on the delinquency status, activities performed, and other characteristics of the loans serviced and total servicing compensation is established at levels that we believe are competitive with those charged by other primary servicers and specialty servicers. PLS acted as the servicer for loans with an unpaid principal balance totaling approximately $551.7 billion, of which $233.6 billion was subserviced for us as of December 31, 2022.

Human Capital Resources

All of our senior officers are employees of PFSI or its affiliates and we have no employees. Our long-term growth and success is highly dependent upon PFSI's employees and PFSI's ability to maintain a diverse, equitable and inclusive workplace representing a broad spectrum of backgrounds, ideas and perspectives. As part of these efforts, PFSI strives to offer competitive compensation and benefits, foster a community where everyone feels a greater sense of belonging and purpose, and provide employees with the opportunity to give back and make an impact in the communities where we live and serve.

PFSI had approximately 4,000 domestic employees as of the end of fiscal year 2022. In addition, as of the end of fiscal year 2022, PFSI's workforce was 49.9% female and 50.1% male, and the ethnicity of PFSI's workforce was 44.4% White, 22.6% Hispanic or Latino, 14.3% Black or African American, 14.2% Asian and 4.5% other (which includes American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, Two or More Races, and Not Specified as defined in its EE0-1 Report filed with the Department of Labor).

Employee Retention and Development

We and PFSI believe in attracting, developing and engaging the best talent, while providing a supportive work environment that prioritizes the health and safety of all. Talent development is a critical component of our and PFSI's experience and ensures that employees have career growth opportunities, including establishing development networks and relationships and fostering continued growth and learning. Employees receive regular business and compliance training to help further enhance their career development objectives. PFSI also actively manages enterprise-wide and divisional mentoring programs and has partnered with an external vendor to establish a comprehensive, fully integrated wellness program designed to enhance employee productivity.

Compensation and Succession Planning

Our and PFSI's compensation programs are designed to motivate and reward employees who possess the necessary skills to support our business strategy and create long-term value for our shareholders. PFSI compensation may include base salary, annual cash incentives, and long-term equity incentives, as well as life insurance and 401(k) plan matching contributions. PFSI also offers a comprehensive selection of health and welfare benefits to its employees including emotional well-being support and paid parental leave programs. Succession planning is also critical to our operations and we have established ongoing evaluations of our leadership depth and succession capabilities.

Diversity, Equity and Inclusion

We and PFSI believe that building a diverse, equitable and inclusive, high-performing workforce where PFSI's employees bring varied perspectives and experiences to work every day creates a positive influence in PFSI's workplace, community and business operations. Our Board of Trustees, our Nominating and Corporate Governance Committee, our Compensation Committee, and our Risk Committee provide regular oversight of our and PFSI's corporate sustainability program, including our diversity, equity and inclusion programs and initiatives. We and PFSI are also taking proactive measures to strategically and sustainably advance equity in the workplace through Business Resource Groups ("BRGs"), a diversity hiring initiative, mentorship programs, and external partnerships with organizations such as the Mortgage Bankers Association and the National Association of Minority Mortgage Bankers of America. We and PFSI also established leadership goals and created customized initiatives that focus on PFSI's continued effort to increase the number of women and underrepresented minorities in management positions throughout the company and its business divisions. As it relates to PFSI's inclusive culture, PFSI established the following BRGs to emphasize career growth, networking, and learning opportunities for employees and allies with shared backgrounds and experiences: the BOLD BRG (for Black and African American employees and allies), the HOLA BRG (for Hispanic, Latino and Latinx employees and allies), the

InspirASIAN BRG (for Asian American and Pacific Islander employees and allies), the Pennymac PRIDE BRG (for LGBTQIA employees and allies), the SERVE BRG (for veteran and military family employees and allies), and the wEMRG BRG (for women employees and allies). We and PFSI also foster a more inclusive culture through a variety of initiatives, including corporate training, special events, community outreach and corporate philanthropy.

Community Involvement

PFSI has a corporate philanthropy program that is governed by a philosophy of giving that prioritizes the support of causes and issues that are important in our local communities, and drives a culture of employee engagement and collaboration throughout our and PFSI's organization. We and PFSI are committed to empowering our employees to be a positive influence in the communities where we live and serve, and believe that this commitment supports our efforts to attract and engage employees and improve retention. PFSI's philanthropy program consists of three key components: an employee matching gift program, a charitable grants program and a corporate sponsorship program. PFSI's five philanthropic focus areas are: community development and equitable housing, financial literacy and economic inclusion, human and social services, health and medical research, and environmental sustainability. PFSI has established a separate donor advised fund to facilitate donations to various local and national charitable organizations and has provided funding to several charitable organizations located near our office sites and national organizations that support missions such as sustainable homeownership, mortgage and rental assistance, food insecurity, disaster recovery, family and child advocacy, and community empowerment. We and PFSI also manage our environmental impact by focusing on improving our waste reduction, energy efficiency and water conservation.

Available Information

Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements and amendments to those reports filed with or furnished to the SEC pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, are available free of charge at www.pennymacmortgageinvestmenttrust.com through the investor relations section of our website as soon as reasonably practicable after electronically filing such material with the SEC. The SEC maintains an Internet site that contains reports, proxy and information statements and other information regarding our filings at www.sec.gov. The above references to our website and the SEC's website do not constitute incorporation by reference of the information contained on those websites and should not be considered part of this document.

Item 1A. Risk Factors

Summary Risk Factors

We are subject to a number of risks that, if realized, could have a material adverse effect on our business, financial condition, liquidity, results of operations and our ability to make distributions to our shareholders. Some of our more significant challenges and risks include, but are not limited to, the following, which are described in greater detail below:

- Interest rate fluctuations could significantly decrease our results of operations and cash flows and the fair value of our investments.
- Difficult conditions in the mortgage, real estate and financial markets and the economy generally may adversely affect the performance and fair value of our investments.
- A disruption in the MBS market could materially and adversely affect our business, financial condition, liquidity and results of operations.
- We operate in a highly regulated industry and the continually changing federal, state and local laws and regulations could materially and adversely affect our business, financial condition, liquidity and results of operations.
- New CFPB and state rules and regulations or more stringent enforcement of existing rules and regulations by the CFPB or state regulators could result in enforcement actions, fines, penalties and the inherent reputational harm that results from such actions.
- We are highly dependent on U.S. government-sponsored entities and government agencies, and any organizational or pricing changes at such entities or their regulators could materially and adversely affect our business, liquidity, financial condition and results of operations.
- We and/or PLS are required to have various Agency approvals and state licenses in order to conduct our business and there is no assurance we and/or PLS will be able to obtain or maintain those Agency approvals or state licenses.
- Our or PLS' inability to meet certain net worth and liquidity requirements imposed by the Agencies could have a material adverse effect on our business, financial condition, liquidity and results of operation
- We have a substantial amount of indebtedness, which may limit our financial and operating activities, expose us to substantial increases in costs due to interest rate fluctuations, expose us to the risk of default under our debt obligations and adversely affect our ability to incur additional debt to fund future needs.
- We finance our investments with borrowings, which may materially and adversely affect our return on our investments and may reduce cash available for distribution to our shareholders.
- We may not be able to raise the debt or equity capital required to finance our assets or grow our business.
- Our business, financial condition, liquidity and results of operations may be adversely affected by the long term impact of the COVID-19 pandemic.
- Our correspondent production activities could subject us to increased risk of loss.
- The success and growth of our correspondent production activities will depend, in part, upon PLS' ability to adapt to and implement technological changes and to successfully develop, implement and protect its proprietary technology.
- Hedging against interest rate exposure may materially and adversely affect our results of operations and cash flows.
- We are not an approved Ginnie Mae issuer and an increase in the percentage of government loans we acquire could be detrimental to our results of operations.
- Our retention of credit risk underlying loans we sell to the GSEs is inherently uncertain and exposes us to significant risk of loss.
- Government-sponsored entities have wound down lender risk share transactions such as CRT investments since the end of 2020. If we are unable to find a suitable alternative investment to investing in CRTs with similar returns, our business, liquidity, financial condition and results of operations could be materially and adversely affected.
- A portion of our investments is in the form of loans, and the loans in which we invest subject us to costs and losses arising from delinquency and foreclosure, as well as the risks associated with residential real estate and residential real estate-related investments, any of which could result in losses to us.
- Our acquisition of mortgage servicing rights exposes us to significant risks.

- Climate change, adverse weather conditions, man-made or natural disasters, pandemics, terrorist attacks, and other long term physical and environmental changes and conditions could adversely impact properties that we own or that collateralize loans we own or service, as well as geographic areas where we conduct business.
- We may be materially and adversely affected by risks affecting borrowers or the asset or property types in which our investments may be concentrated at any given time, as well as from unfavorable changes in the related geographic regions.
- Many of our investments are illiquid and we may not be able to adjust our portfolio in response to changes in economic and other conditions.
- Fair values of many of our investments are estimates and the realization of reduced values from our recorded estimates may materially and adversely affect periodic reported results and credit availability, which may reduce earnings and, in turn, cash available for distribution to our shareholders.
- We are required to make servicing advances that can be subject to delays in recovery or may not be recoverable in certain circumstances, which could adversely affect our business, financial condition, liquidity, results of operations and ability to make distributions to our shareholders.
- We are dependent upon PCM and PLS and their resources and may not find suitable replacements if any of our service agreements with PCM or PLS are terminated.
- The management fee structure could cause disincentive and/or create greater investment risk.
- Termination of our management agreement is difficult and costly.
- Certain provisions of Maryland law, our staggered board of trustees and certain provisions in our declaration of trust could each inhibit a change in our control.
- Failure to maintain exemptions or exclusions from registration under the Investment Company Act could materially and adversely affect us.
- Our failure to qualify as a REIT would result in higher taxes and reduced cash available for distribution to our shareholders.
- Even if we qualify as a REIT, we face tax liabilities that reduce our cash flow, and a significant portion of our income may be earned through TRSs that are subject to U.S. federal income taxation.
- The percentage of our assets represented by a TRS and the amount of our income that we can receive in the form of TRS dividends are subject to statutory limitations that could jeopardize our REIT status.
- Our and our Manager’s risk management efforts may not be effective.
- Cybersecurity risks, cyber incidents and technology failures may adversely affect our business by causing a disruption to our operations, a compromise or corruption of our confidential information, and/or damage to our business relationships, all of which could negatively impact our financial results.

The above list is not exhaustive, and we face additional challenges and risks. Please carefully consider all of the information in this Report, including the matters set forth below in this Item 1A.

Risk Factors

In addition to the other information set forth in this Report, you should carefully consider the following factors, which could materially adversely affect our business, financial condition, liquidity and results of operations in future periods. The risks described below are not the only risks that we face. Additional risks not presently known to us or that we currently deem immaterial may also materially adversely affect our business, financial condition, liquidity and results of operations in future periods.

Risks Related to Our Business

Interest rate fluctuations could significantly decrease our results of operations and cash flows and the fair value of our investments.

Interest rates are highly sensitive to many factors, including United States monetary policies, domestic and international economic and political considerations and other macroeconomic conditions such as inflation fluctuations, consumer confidence and demand. Interest rate fluctuations present a variety of risks to our operations. Our primary interest rate exposures relate to the yield on our investments, their fair values and the financing cost of our debt, as well as any derivative financial instruments that we utilize for hedging purposes. In addition, interest rates and the liquidity of the MBS market may be impacted by the Federal Reserve increasing the federal funds rate, tapering MBS purchases or selling MBS. Changes in interest rates affect our net interest income, which is the difference between the interest income we earn on our interest earning investments and the interest expense we incur in financing these investments. Interest rate fluctuations resulting in our interest expense exceeding interest income may result in operating losses for us. An increase in interest rates in 2022 negatively impacted our loan production volumes, and further increases in interest rates could further materially and adversely affect our correspondent production activities.

Changes in the level of interest rates also may affect our ability to make investments, the fair value of our investments (including our pipeline of loan commitments) and any related hedging instruments, the value of newly originated loans acquired through our correspondent production segment, and our ability to realize gains from the disposition of assets. Changes in interest rates may result in a margin call and require us to post additional collateral, affect borrower default rates and impact our ability to refinance or modify loans and/or to sell REO. Decreasing interest rates may cause a large number of borrowers to refinance, which may result in the loss of mortgage servicing business and write-downs of the associated MSRs. Any such scenario could materially and adversely affect us.

A prolonged economic slowdown, recession or declining real estate values could materially and adversely affect us.

The risks associated with our investments are more acute during periods of economic slowdown or recession, especially if these periods are accompanied by high unemployment and declining real estate values. The long term impact of the COVID-19 pandemic, a weakening economy, high unemployment and declining real estate values significantly increase the likelihood that borrowers will default on their debt service obligations and that we will incur losses on our investments in the event of a default on a particular investment because the fair value of any collateral we foreclose upon may be insufficient to cover the full amount of such investment or may require a significant amount of time to realize. These factors may also increase the likelihood of re-default rates even after we have completed loan modifications. Any period of increased payment delinquencies, foreclosures or losses could adversely affect the net interest income generated from our portfolio and our ability to make and finance future investments, which would materially and adversely affect our business, financial condition, liquidity, results of operations and our ability to make distributions to our shareholders.

Difficult conditions in the mortgage, real estate and financial markets and the economy generally may adversely affect the performance and fair value of our investments.

The success of our business strategies and our results of operations are materially affected by current conditions in the mortgage, real estate and financial markets and the economy generally. Continuing concerns over factors including the long term impact of the COVID-19 pandemic, inflation, deflation, unemployment, personal and business income taxes, healthcare, energy costs, domestic political issues, climate change, the availability and cost of credit and the mortgage and real estate markets have contributed to increased volatility and unclear expectations for the economy and markets going forward. Mortgage markets may be affected by changes in the lending landscape, defaults, credit losses and liquidity concerns. A destabilization of the real estate and mortgage markets or deterioration in these markets may adversely affect the performance and fair value of our investments, reduce our loan production volume, lower our margins, reduce the profitability of servicing mortgages or adversely affect our ability to sell loans that we acquire, either at a profit or at all. Any of the foregoing could materially and adversely affect our business, financial condition, liquidity, results of operations and ability to make distributions to our shareholders.

A disruption in the MBS market could materially and adversely affect our business, financial condition, liquidity and results of operations.

In our correspondent production activities, we deliver newly originated Agency-eligible loans that we acquire to Fannie Mae or Freddie Mac to be pooled into Agency MBS securities or transfer government loans that we acquire to PLS, which pools them into Ginnie Mae MBS securities. In addition, interest rates and the liquidity of the MBS market may be impacted by the Federal Reserve increasing the federal funds rate, tapering MBS purchases or selling MBS. Any significant disruption or period of illiquidity in the general MBS market would directly affect our liquidity because no existing alternative secondary market would likely be able to accommodate on a timely basis the volume of loans that we typically acquire and sell in any given period. Furthermore, we would remain contractually obligated to fund loans under our outstanding interest rate lock commitments ("IRLCs") without being able to sell our existing inventory of mortgage loans. Accordingly, if the MBS market experiences a period of illiquidity, we might be prevented from selling the loans that we produce into the secondary market in a timely manner or at favorable prices and we could be required to hold a larger inventory of loans than we have committed facilities to fund, or we may be required to repay a portion of the debt secured by these assets, which could materially and adversely affect our business, financial condition, results of operations and our ability to make distributions to our shareholders.

We operate in a highly regulated industry and the continually changing federal, state and local laws and regulations could materially and adversely affect our business, financial condition, liquidity and results of operations.

We are required to comply with a wide array of federal, state and local laws and regulations that regulate, among other things, the manner in which we conduct our loan production and servicing businesses. These regulations directly impact our business and require constant compliance, monitoring and internal and external audits. PLS and the service providers it uses, including outside counsel retained to process foreclosures and bankruptcies, must also comply with some of these legal requirements. Our failure or the failure of PLS to operate effectively and in compliance with these laws, regulations and rules could subject us to lawsuits or governmental actions and damage our reputation, which could materially and adversely affect our business, financial condition, liquidity and results of operations. In addition, our failure or the failure of PLS to comply with these laws, regulations and rules may result in increased costs of doing business, reduced payments by borrowers, modification of the original terms of loans, permanent forgiveness of debt, delays in the foreclosure process, increased servicing advances, litigation, reputational damage, enforcement actions, and repurchase and indemnification obligations.

We and PLS must also comply with a number of federal, state and local consumer protection and state foreclosure laws. These statutes apply to loan origination, servicing, debt collection, marketing, use of credit reports, safeguarding of non-public, personally identifiable information about our clients, foreclosure and claims handling, investment of and interest payments on escrow balances and escrow payment features, and mandate certain disclosures and notices to customers.

Because neither we nor PLS is a federally chartered depository institution, we generally do not benefit from federal pre-emption of state mortgage loan banking, loan servicing or debt collection licensing and regulatory requirements and must comply with multiple state licensing and compliance requirements. These state rules and regulations generally provide for, but are not limited to: originator, servicer and debt collector licensing requirements, requirements as to the form and content of contracts and other documentation, employee licensing and background check requirements, fee requirements, interest rate limits, and disclosure and record-keeping requirements.

The failure of our correspondent sellers to comply with any applicable laws, regulations and rules may also result in these adverse consequences. PLS has in place a due diligence program designed to assess areas of risk with respect to loans we acquire from such correspondent sellers. However, we may not detect every violation of law and, to the extent any correspondent sellers with which we do business fail to comply with applicable laws or regulations and any of their loans or MSRs become part of our assets, it could subject us, as an assignee or purchaser of the related loans or MSRs, to monetary penalties or other losses. While we may have contractual rights to seek indemnity or repurchase from certain lenders, if they are unable to fulfill their indemnity or repurchase obligations to us to a material extent, our business, liquidity, financial condition and results of operations could be materially and adversely affected. Our service providers and other vendors are also required to operate in compliance with applicable laws, regulations and rules. Our failure to adequately manage service providers and other vendors to mitigate risks of noncompliance with applicable laws may also have these negative results.

Regulatory agencies and consumer advocacy groups are becoming more aggressive in asserting fair lending, fair housing and other claims that the practices of lenders and loan servicers result in a disparate impact on protected classes. Anti-discrimination statutes, such as the Fair Housing Act and the Equal Credit Opportunity Act, prohibit creditors from discriminating against loan applicants and borrowers based on certain characteristics, such as race, religion and national origin. Various federal regulatory agencies and departments take the position that these laws apply not only to intentional discrimination, but also to neutral practices that have a “disparate impact” on a group that shares a characteristic that a creditor may not consider in making credit decisions (i.e., creditor or servicing practices that have a disproportionately negative affect on a protected class of individuals).

Federal and state administrations could enact significant policy changes increasing regulatory scrutiny and enforcement actions in our industry. While it is not possible to predict when and whether significant policy or regulatory changes would occur, any such changes on the federal, state or local level could significantly impact, among other things, our operating expenses and the availability of mortgage financing. To the extent that the current government administration takes action by proposing and/or passing regulatory policies that could have a negative impact on our industry, such actions may have a material adverse effect on our business, financial condition, results of operations and our ability to make distributions to our shareholders. To the extent any such state regulators impose new minimum net worth, capital ratio and liquidity standards that are overly burdensome, such actions may have a material adverse effect on our business, financial condition, liquidity and results of operations.

The Financial Stability Oversight Council (“FSOC”) and Conference of State Bank Supervisors (“CSBS”) have been reviewing whether state chartered nonbank mortgage servicers should be subject to “safety and soundness” standards similar to those imposed by federal law on insured depository institutions, even though nonbank mortgage servicers do not have any federally insured deposit accounts. For example, on July 26, 2021, the CSBS released model state regulatory prudential standards for state oversight of nonbank mortgage servicers. The model CSBS prudential standards include revised minimum net worth, capital ratio and liquidity standards similar to current Federal Housing Finance Agency ("FHFA") requirements and require servicers to maintain sufficient allowable assets to cover normal operating expenses in addition to the amounts required for servicing expenses. In addition, on August 17, 2022, the FHFA and Ginnie Mae announced enhanced minimum net capital and liquidity eligibility requirements for sellers, servicers and issuers that will go into effect in 2023 and 2024. To the extent any new minimum net worth, capital ratio and liquidity standards and requirements are overly burdensome, complying with such standards and requirements may have a material adverse effect on our business, financial condition, liquidity and results of operations.

New CFPB and state rules and regulations or more stringent enforcement of existing rules and regulations by the CFPB or state regulators could result in enforcement actions, fines, penalties and the inherent reputational harm that results from such actions.

The CFPB has regulatory authority over certain aspects of our business as a result of our residential mortgage banking activities, including, without limitation, the authority to conduct investigations, bring enforcement actions, impose monetary penalties, require remediation of practices, pursue administrative proceedings or litigation, and obtain cease and desist orders for violations of applicable federal consumer financial laws. The current CFPB administration has stated its intention to aggressively supervise, investigate and, where it deems appropriate, bring enforcement actions against lenders and servicers the CFPB believes are engaged in activities that violate federal laws and regulations. In addition, examinations by state regulators and enforcement actions in the residential mortgage origination and servicing sectors by state attorneys general have increased and may continue to increase. Failure to comply with the CFPB and state laws, rules or regulations to which we are subject, whether actual or alleged, could have a material adverse effect on our business, liquidity, financial condition and results of operations.

Our or PLS' failure to comply with the laws, rules or regulations to which we are subject, whether actual or alleged, would expose us or PLS to fines, penalties or potential litigation liabilities, including costs, settlements and judgments, any of which could have a material adverse effect on our or PLS' business, liquidity, financial condition and results of operations and our ability to make distributions to our shareholders.

We are highly dependent on U.S. government-sponsored entities and government agencies, and any organizational or pricing changes at such entities or their regulators could materially and adversely affect our business, liquidity, financial condition and results of operations.

Our ability to generate revenues through loan sales depends on programs administered by the Agencies and others that facilitate the issuance of MBS in the secondary market. We acquire loans from mortgage lenders through our correspondent production activities that qualify under existing standards for inclusion in mortgage securities backed by the Agencies. We also derive other material financial benefits from these relationships, including the ability to avoid certain loan inventory finance costs through streamlined loan funding and sale procedures.

A number of legislative proposals have been introduced in recent years that would wind down or phase out the GSEs in their current form, including a proposal by the prior federal administration to end the conservatorship and privatize Fannie Mae and Freddie Mac. It is not possible to predict the scope and nature of the actions that the U.S. government, including the current federal administration, will ultimately take with respect to the GSEs. Any changes in laws and regulations affecting the relationship between Fannie Mae and Freddie Mac and their regulators or the U.S. federal government, and any changes in leadership at any of these entities could adversely affect our business and prospects. Any discontinuation of, or significant reduction in, the operation of Fannie Mae or Freddie Mac or any significant adverse change in their capital structure, financial condition, activity levels in the primary or secondary mortgage markets or underwriting criteria could materially and adversely affect our business, liquidity, financial condition, results of operations and our ability to make distributions to our shareholders.

Our ability to generate revenues from newly originated loans that we acquire through our correspondent production activities is also highly dependent on the fact that the Agencies have not historically acquired such loans directly from mortgage lenders, but have instead relied on banks and non-bank aggregators such as us to acquire, aggregate and securitize or otherwise sell such loans to investors in the secondary market. Certain of the Agencies have approved new and smaller lenders that traditionally may not have qualified for such approvals. To the extent that mortgage lenders choose to sell directly to the Agencies rather than through loan aggregators like us, this reduces the number of loans available for purchase, and it could materially and adversely affect our business, financial condition, liquidity, results of operations and ability to make distributions to our shareholders. In addition, under certain Agency capital rules, loans sourced from loan aggregators, such as ourselves, have higher capital requirements and we may incur higher Agency fees for third party originated loans that we aggregate and deliver to the Agencies as compared to individual loans delivered by third party mortgage lenders directly to the Agencies' cash windows without the assistance of a loan aggregator. To the extent the Agencies increase the number of purchases and sales for their own accounts, our business and results of operations could be materially and adversely affected.

We and/or PLS are required to have various Agency approvals and state licenses in order to conduct our business and there is no assurance we and/or PLS will be able to obtain or maintain those Agency approvals or state licenses.

Because we and PLS are not federally chartered depository institutions, neither we nor PLS benefit from exemptions to state mortgage lending, loan servicing or debt collection licensing and regulatory requirements. Accordingly, PLS is licensed in all state jurisdictions, and for those activities, where it is required to be licensed and believes it is cost effective and appropriate to become licensed.

Our failure or the failure by PLS to maintain any necessary licenses, comply with applicable licensing laws or satisfy the various requirements to maintain them over time could restrict our direct business activities, result in litigation or civil and other monetary penalties, or cause us to default under certain of our lending arrangements, any of which could materially and adversely impact our business, financial condition, liquidity, results of operations and ability to make distributions to our shareholders.

We and PLS are also required to hold the Agency approvals in order to sell loans to the Agencies and service such loans on their behalf. Our failure, or the failure of PLS, to satisfy the various requirements necessary to maintain such Agency approvals over time would also restrict our direct business activities and could adversely impact our business.

We and PLS are subject to periodic examinations by federal, state and Agency auditors and regulators, which can result in increases in our administrative costs, and we or PLS may be required to pay substantial penalties imposed by these regulators due to compliance errors, or we or PLS may lose our licenses. Negative publicity or fines and penalties incurred in one jurisdiction may cause investigations or other actions by regulators in other jurisdictions and could adversely impact our business.

Our or PLS' inability to meet certain net worth and liquidity requirements imposed by the Agencies could have a material adverse effect on our business, financial condition, liquidity and results of operation.

We and our servicer are subject to minimum financial eligibility requirements established by the Agencies, as applicable. For example, on August 2022, the FHFA and Ginnie Mae announced enhanced minimum net capital and liquidity eligibility requirements for sellers, servicers and issuers that will go into effect in 2023 and 2024. These eligibility requirements align the minimum financial requirements for mortgage sellers/servicers and MBS issuers to do business with the Agencies. These minimum financial requirements include net worth, capital ratio and/or liquidity criteria in order to set a minimum level of capital needed to adequately absorb potential losses and a minimum amount of liquidity needed to service Agency loans and MBS and cover the associated financial obligations and risks.

In order to meet these minimum financial requirements, we and PLS are required to maintain rather than spend or invest, cash and cash equivalents in amounts that may adversely affect our or its business, financial condition, liquidity, results of operations and ability to make distributions to our shareholders, and this could significantly impede us and PLS, as non-bank mortgage lenders, from growing our respective businesses and place us at a competitive disadvantage in relation to federally chartered banks and certain other financial institutions. To the extent that such minimum financial requirements are not met, the Agencies may suspend or terminate Agency approval or certain agreements with us or PLS, which could cause us or PLS to cross default under financing arrangements and/or have a material adverse effect on our business, financial condition, liquidity, results of operations and ability to make distributions to our shareholders.

We have a substantial amount of indebtedness, which may limit our financial and operating activities, expose us to substantial increases in costs due to interest rate fluctuations, expose us to the risk of default under our debt obligations and adversely affect our ability to incur additional debt to fund future needs.

As of December 31, 2022, we had $11.4 billion of total indebtedness outstanding (approximately $10.9 billion of which was secured) and up to $5.0 billion of additional capacity under our secured borrowings and other secured debt financing arrangements. This substantial indebtedness and any future indebtedness we incur could have adverse consequences and, for example, could:

- require us to dedicate a substantial portion of cash flow from operations and investments to the payment of principal and interest on indebtedness, including indebtedness we may incur in the future, thereby reducing the funds available for operations, investments and other general corporate purposes;
- make it more difficult for us to satisfy our obligations with respect to our indebtedness, and any failure to comply with the obligations of any of our debt instruments, including any restrictive covenants, could result in an event of default under the agreements governing our other indebtedness which, if not cured or waived, could result in accelerated repayment of our indebtedness;
- subject us to increased sensitivity to interest rate increases;
- make us more vulnerable to economic downturns, adverse industry conditions or catastrophic events, including the COVID-19 pandemic and climate change;

- reduce our flexibility in planning for or responding to changing business, industry and economic conditions or restrict our ability to carry on business activity; and/or
- place us at a competitive disadvantage to competitors that have relatively less debt than we have.

In addition, our substantial level of indebtedness could limit our ability to obtain additional financing on acceptable terms, or at all, for working capital and general corporate purposes. Our liquidity needs vary significantly from time to time and may be affected by general economic conditions, industry trends, performance and many other factors outside our control.

We finance our investments with borrowings, which may materially and adversely affect our return on our investments and may reduce cash available for distribution to our shareholders.

We currently leverage and, to the extent available, intend to continue to leverage our investments through borrowings, the level of which may vary based on our investment portfolio characteristics and market conditions. We generally finance our investments with relatively short-term facilities until longer-term financing becomes available. As a result, we are subject to the risks that we would not be able to obtain suitable non-recourse long-term financing or otherwise acquire, during the period that any short-term facilities are available, sufficient eligible assets or securities to maximize the efficiency of a securitization. We also bear the risk that we would not be able to obtain new short-term facilities or to renew any short-term facilities after they expire should we need more time to obtain long-term financing or seek and acquire sufficient eligible assets or securities for a securitization. If we are unable to obtain and renew short-term facilities or to consummate securitizations to finance our investments on a long-term basis, we may be required to seek other forms of potentially less attractive financing or to liquidate assets at an inopportune time or unfavorable price.

Specifically, we have financed certain of our investments through repurchase agreements, pursuant to which we may sell securities or loans to lenders (i.e., repurchase agreement counterparties) and receive cash from the lenders. CRT investments have been financed through term notes and repurchase agreements. Unlike MBS and other investments, we finance under repurchase agreements, our CRT investments are generally more illiquid and subject to greater fluctuations in fair value and the term notes we issue to finance these assets may not be callable and may otherwise prohibit the disposition of the assets securing the financing.

We also currently finance certain of our MSRs under secured financing arrangements. Our Freddie Mac MSRs are pledged to secure borrowings under loan and security agreements, while our Fannie Mae MSRs are pledged to a special purpose entity, which issues variable funding notes and term notes that are secured by such Fannie Mae MSRs and repaid through the cash flows received by the special purpose entity as the lender under a repurchase agreement with PennyMac Corp. (“PMC”). A decrease in the fair value of the pledged collateral can result in a margin call. Any such margin call may require that we liquidate assets at a disadvantageous time or provide that the secured parties may sell the collateral, either of which could result in significant losses to us. Each of the secured financing arrangements pursuant to which we finance MSRs is further subject to the terms of an acknowledgement agreement with Fannie Mae, Freddie Mac or Ginnie Mae, as applicable, pursuant to which our and the secured parties’ rights are subordinate in all respects to the rights of the applicable Agency. Any extinguishment of our and the secured parties’ rights in the related collateral could result in significant losses to us.

We may in the future utilize other sources of borrowings, including term loans, bank credit facilities and structured financing arrangements, among others. The amount of leverage we employ varies depending on the asset class being financed, our available capital, our ability to obtain and access financing arrangements with lenders and the lenders’ and rating agencies’ estimate of, among other things, the stability of our investment portfolio’s cash flow.

Our return on our investments and cash available for distribution to our shareholders may be reduced to the extent that changes in market conditions increase the cost of our financing relative to the income that can be derived from the investments acquired. Our debt service payments also reduce cash flow available for distribution to shareholders. In the event we are unable to meet our debt service obligations, we risk the loss of some or all of our assets to foreclosure or sale to satisfy the obligations.

Our financing agreements contain financial and restrictive covenants that could adversely affect our financial condition and our ability to operate our businesses.

The lenders under our repurchase agreements require us and/or our subsidiaries to comply with various financial covenants, including those relating to tangible net worth, profitability and our ratio of total liabilities to tangible net worth. Our lenders also require us to maintain minimum amounts of cash or cash equivalents sufficient to maintain a specified liquidity position. If we are unable to maintain these liquidity levels, we could be forced to sell additional investments at a loss and our financial condition could deteriorate rapidly.

Our existing financing agreements also contain certain events of default and other financial and non-financial covenants and restrictions that impact our flexibility to determine our operating policies and investment strategies. If we default on our obligations under a credit or financing agreement, fail to comply with certain covenants and restrictions or breach our representations and are unable to cure, the lender may be able to terminate the transaction or its commitments, accelerate any amounts outstanding, require us to post additional collateral or repurchase the assets, and/or cease entering into any other credit transactions with us.

Because our financing agreements typically contain cross-default provisions, a default that occurs under any one agreement could allow the lenders under our other agreements to also declare a default, thereby exposing us to a variety of lender remedies, such as those described above, and potential losses arising therefrom. Any losses that we incur on our credit and financing agreements could materially and adversely affect our business, financial condition, liquidity, results of operations and ability to make distributions to our shareholders.

As the servicer of the assets subject to our repurchase agreements, PLS is also subject to various financial covenants, including those relating to tangible net worth, liquidity, profitability and its ratio of total liabilities to tangible net worth. PLS' failure to comply with any of these covenants would generally result in a servicer termination event or event of default under one or more of our repurchase agreements. Thus, in addition to relying upon PCM to manage our financial covenants, we rely upon PLS to manage its own financial covenants in order to ensure our compliance with our repurchase agreements and our continued access to liquidity and capital. A servicer termination event or event of default resulting from PLS' breach of its financial or other covenants could materially and adversely impact our business, financial condition, liquidity, results of operations and our ability to make distributions to shareholders.

We may not be able to raise the debt or equity capital required to finance our assets or grow our business.

We require continued access to debt and equity capital that may or may not be available on favorable terms or at the desired times, or at all. In addition, we invest in certain assets, including MSRs, for which financing has historically been difficult to obtain. Our inability to continue to maintain debt financing for MSRs could require us to seek equity capital that may be more costly or unavailable to us.

We are also dependent on a limited number of banking institutions that extend us credit on terms that we have determined to be commercially reasonable. These banking institutions are subject to their own regulatory supervision, liquidity and capital requirements, risk management frameworks and risk thresholds and tolerances, any of which may change materially and negatively impact their willingness to extend credit to us specifically or mortgage lenders and servicers generally. Such actions may increase our cost of capital and limit or otherwise eliminate our access to capital, in which case our business, financial condition, liquidity, results of operations and ability to make distributions to our shareholders would be materially and adversely affected.

We can provide no assurance that we will have access to any debt or equity capital on favorable terms or at the desired times, or at all. Our inability to raise such capital or obtain financing on favorable terms could materially and adversely impact our business, financial condition, liquidity, results of operations and our ability to make distributions to shareholders.

Our business, financial condition, liquidity and results of operations may be adversely affected by the long term impact of the COVID-19 pandemic.

The COVID-19 pandemic, inclusive of any variants, has created unprecedented economic, financial and public health disruptions that may continue to adversely affect our business, financial condition, liquidity and results of operations. The extent to which COVID-19 continues to affect our business, financial condition, liquidity and results of operations will depend on future developments, including the scope and duration of the COVID-19 pandemic and actions taken by governmental authorities and other third parties in response to the COVID-19 pandemic.

The federal government enacted the Coronavirus Aid, Relief, and Economic Security Act ("CARES Act"), which allows borrowers with federally-backed loans to request temporary payment forbearance in response to the increased borrower hardships resulting from the long term impact of the COVID-19 pandemic. As a result of the CARES Act and other forbearance requirements, we may experience delinquencies in our servicing portfolio that require us to finance advances of principal and interest payments to the investors holding those loans, as well as advances of property taxes, insurance premiums and other expenses to protect investors' interests in the properties securing the loans. The CARES Act and other forbearance requirements have reduced our servicing fee income and increased our servicing expenses due to the increased number of delinquent loans, significant levels of forbearance that we have granted and continue to grant, as well as the resolution of loans that we expect to ultimately default as the result of the long term impact of the COVID-19 pandemic. Future servicing advances will be driven by a number of factors, including: the number of borrower delinquencies, including those resulting from payment forbearance; the length of time borrowers remain delinquent; and the level of successful resolution of delinquent payments, all of which will be impacted by the pace at which the economy recovers from the long term impact of the COVID-19 pandemic. As of December 31, 2022, 0.3% of loans in our MSR portfolio were in forbearance plans and delinquent, resulting in an increase in the level of servicing advances we have been required to make due to borrower delinquencies. Servicing advances resulting from the COVID-19 pandemic could have a significant adverse impact on our cash flows and could also have a detrimental effect on our business and financial condition.

The CARES Act and other forbearance requirements have negatively impacted the fair value of our servicing assets and further market volatility or economic weakness may result in additional reductions in the value of our servicing assets and make it increasingly difficult to optimize our hedging activities. Our liquidity and/or regulatory capital could also be adversely impacted by volatility and disruptions in the capital and credit markets. If we fail to meet or satisfy any of the covenants in our financing arrangements as a result of the impact of the COVID-19 pandemic, we would be in default under these agreements, which could result in a cross-default or cross-acceleration under other financing arrangements, and our lenders could elect to declare outstanding amounts due and payable (or such amounts may automatically become due and payable), terminate their commitments, require the posting of additional collateral and enforce their respective interests against existing collateral.

We may have difficulty accessing debt and equity capital on attractive terms, or at all, as a result of the impact of the COVID-19 pandemic, which may adversely affect our access to capital necessary to fund our operations or address maturing liabilities on a timely basis. This includes renewals of our existing credit facilities with our lenders who may be adversely impacted by the volatility and dislocations in the financial markets and may not be willing or able to continue to extend us credit on the same terms, or on favorable terms, or at all.

Our business could be disrupted if we or our Manager are unable to operate due to changing governmental restrictions such as travel bans and quarantines placed or reinstituted on our employees or operations, including successfully operating our business from remote locations, ensuring the protection of our employees' health and maintaining our information technology infrastructure. Further, increased operational expenses to address these restrictions and widespread employee illnesses could negatively affect staffing within our various businesses and geographies.

Federal, state, and local executive, legislative and regulatory responses to the long term impact of the COVID-19 pandemic may be inconsistent and conflict in scope or application, and may be subject to change without advance notice. These regulatory responses may impose additional compliance obligations, and may extend existing CARES Act and other forbearance requirements. In addition, the CARES Act and other federal, state and local regulations are subject to interpretation given the existing ambiguities in the rules and regulations, which may result in future class action and other litigation risk.

The outcome of the COVID-19 related governmental measures are unknown and they may not be sufficient to address future market dislocations or avert severe and prolonged reductions in economic activity. We may also face increased risks of disputes with our business partners, litigation and governmental and regulatory scrutiny as a result of the effects of the COVID-19 pandemic. The final scope and duration of the COVID-19 pandemic and the efficacy of the extraordinary government measures put in place to address it are currently unknown. Even after the COVID-19 pandemic subsides, the economy may not fully recover for some time and we may be materially and adversely affected by a prolonged recession or economic downturn.

The COVID-19 pandemic and the CARES Act have significantly increased the number of borrowers who were in forbearance whose loans are in our CRT arrangements which may result in future losses.

The CARES Act allows borrowers with federally-backed loans to request temporary payment forbearance if they attest that they are directly or indirectly experiencing any financial hardship resulting from the COVID-19 pandemic. The CARES Act also precludes servicers from reporting borrowers subject to forbearance plans as delinquent to the credit reporting agencies even though the federally-backed loans may still be characterized as delinquent for the purposes of our CRT arrangements with Fannie Mae. Our CRT arrangements are structured such that we retain a portion of the credit risk and an interest-only ownership interest in the reference loans and, under certain of our CRT Agreements, may be required to realize losses in the event of a loan delinquency of 180 days or more even where there is ultimately no loss realized with respect to such loan (e.g., as a result of a borrower's re-performance). CARES Act forbearance requests under our CRT arrangements may thus result in credit and fair value losses that require us to write down the value of the assets significantly. Further, in the event of a foreclosure, the proceeds upon the sale of such underlying real estate may not be sufficient to repay the borrower's mortgage loan obligation, which could result in losses to our CRT arrangements and to us.

We are subject to risks associated with the discontinuation of LIBOR.

One-week and two-month U.S. dollar LIBOR (and certain non-U.S. dollar LIBOR settings) were discontinued as of December 31, 2021, while the remaining non-U.S. dollar LIBOR settings ceased to be representative and thereafter began to be published only on a "synthetic basis". In addition, the UK Financial Conduct Authority (the "FCA"), which is the regulator of the LIBOR administrator, has announced that the principal U.S. dollar LIBOR tenors (overnight and one, three, six and 12 months) will cease to be published by any administrator or will no longer be representative as of June 30, 2023. In addition, despite the expected publication of the principal U.S. dollar LIBOR settings through June 30, 2023, the FCA has prohibited the firms it regulates from using such settings in new contracts.

Accordingly, many LIBOR obligations have transitioned to another benchmark or will do so. Different types of financial products have transitioned, or are expected to transition, to different benchmarks; and there is no assurance that any alternative benchmark will be the economic equivalent of any LIBOR setting. For some existing LIBOR-based obligations, the contractual consequences of the discontinuation of LIBOR may not be clear. Although the foregoing reflects the timing (or expected timing) of LIBOR discontinuation and certain consequences, there is no assurance that LIBOR, of any particular currency or tenor, will continue to be published until any particular date or in any particular form, and there is no assurance regarding the consequences of LIBOR discontinuation. Uncertainty as to the foregoing and the nature of alternative reference rates may adversely impact the availability and costs of borrowings.

The discontinuation of LIBOR could have a significant impact on the financial markets and our business activities. The cost of borrowing under certain of our financing arrangements is based on LIBOR. We also may hold assets and instruments used to hedge the value of certain assets with values or cash flows determined by reference to LIBOR. We expect to face challenges during the transition away from LIBOR for all of our LIBOR based financing arrangements regardless of whether their maturity dates (as applicable) fall before or after the discontinuation date after June 30, 2023. These challenges include, but are not limited to, amending agreements or instruments underlying our existing and/or new LIBOR-based assets, financing arrangements, securities and liabilities with appropriate fallback language in such a way as to ensure economic equivalence with our LIBOR-based assets, financing arrangements and securities prior to the discontinuation of LIBOR, and the possibility that LIBOR may deteriorate as a viable benchmark to ensure a fair cost of funds for our LIBOR-linked liabilities, interest income for our LIBOR-linked assets, and/or the determination of fair value for certain of our assets and hedges using LIBOR as a benchmark rate or used to develop a market discount rate. In addition, the transition to using any new benchmark rate or other financial metric may require changes to existing transaction data, products, systems, models, operations and pricing processes.

We also anticipate additional risks to our current business activities as they relate to the discontinuation of LIBOR. We may service LIBOR-based adjustable rate mortgages for which the underlying mortgage notes incorporate fallback provisions, but we cannot anticipate the response of our borrowers or note holders to such risks. We may also incorporate LIBOR base rates for financial planning and reporting in our financial models.

In the United States, there have been efforts to identify alternative reference interest rates to replace United States Dollar LIBOR. The Alternative Reference Rates Committee has recommended that U.S. dollar LIBOR be replaced by rates based on the Secured Overnight Financing Rate ("SOFR") plus, in the case of existing LIBOR contracts and obligations, a spread adjustment. The derivatives markets are also expected to use SOFR-based rates to replace U.S. dollar LIBOR. SOFR is intended to be a broad measure of the cost of borrowing funds overnight in transactions that are collateralized by U.S. Treasury securities. LIBOR is intended to be an unsecured rate that represents interbank funding costs for different short-term tenors and, other than its overnight setting, reflects expectations regarding future interest rates. Thus, LIBOR is generally intended to be sensitive to bank credit risk and to short-term interest rate expectations and SOFR is intended to be insensitive to credit risk and to risks related to interest rates other than overnight rates. These fundamental differences between LIBOR and SOFR mean we are unable to clearly assess the risk of transitioning from LIBOR to SOFR for any of our LIBOR-based liabilities or assets.

Due to these risks, we expect that both the impending and actual discontinuation of LIBOR could affect our interest expense and earnings, our cost of capital, and the fair value of certain of our assets and the instruments we use to hedge their fair value. For the same reason, we also can provide no assurance that changes in the fair value of our hedge instruments will effectively offset changes in the fair value of the assets they are expected to hedge. Furthermore, the transition away from widely used benchmark rates like LIBOR could result in customers or other market participants challenging the determination of their interest or dividend payments, disputing the interpretations or implementation of contract or instrument "fallback" provisions and other transition related changes. Our inability to manage these risks effectively may adversely affect our business, financial condition, liquidity and results of operations.

We are subject to market risk and declines in credit quality and changes in credit spreads, which may adversely affect investment income and cause realized and unrealized losses.

We are exposed to the credit markets and subject to the risk that we will incur losses due to adverse changes in credit spreads. Adverse changes to these spreads may occur due to changes in fiscal policy, the long term impact of the COVID-19 pandemic, the economic climate, the liquidity of a market or market segment, insolvency or financial distress of key market makers or participants, or changes in market perceptions of credit worthiness and/or risk tolerance.

We are subject to risks associated with potential declines in our credit quality, credit quality related to specific issuers or specific industries, and a general weakening in the economy, all of which are typically reflected through credit spreads. Credit spread is the additional yield on fixed income securities above the risk-free rate (typically referenced as the yield on U.S. Treasury securities) that market participants require to compensate them for assuming credit, liquidity and/or prepayment risks. Credit spreads vary (i.e., increase or decrease) in response to the market's changing perception of risk and liquidity in a specific issuer or specific sector and are influenced by the credit ratings, and the reliability of those ratings, published by third party rating agencies. A decline in the quality of our investment portfolio as a result of adverse economic conditions or otherwise could cause additional realized and unrealized losses on our investments.

A decline in credit spreads could have an adverse effect on our investment income as we invest cash in new investments that may earn less than the portfolio's average yield. An increase in credit spreads could have an adverse effect on the fair value of our investment portfolio by decreasing the fair values of investments in our investment portfolio that are sensitive to changes in credit spreads. Any such scenario could materially and adversely affect us.

Hedging against interest rate exposure may materially and adversely affect our results of operations and cash flows.

We pursue hedging strategies in a manner that is consistent with the REIT qualification requirements to reduce our exposure to interest rates. The strategies are intended to mitigate the effect of interest rate fluctuations on the fair value of the assets at our TRS as well as debt used to acquire or carry real estate assets at entities other than our TRS. To manage this price risk, we use derivative financial instruments acquired with the intention of moderating the risk that changes in market interest rates will result in unfavorable changes in the fair value of our assets, primarily prepayment exposure on our MSR investments as well as IRLCs and our inventory of loans held for sale as well as MBS and CRTs. For example, with respect to our IRLCs and inventory of loans held for sale, we may use MBS forward sale contracts to lock in the price at which we will sell the mortgage loans or resulting MBS, and MBS put options to mitigate the risk of our IRLCs not closing at the rate we expect. In addition, with respect to our MSRs, we may use MBS forward purchase and sale contracts to address exposures to smaller interest rate shifts with Treasury and interest rate swap futures, and use options and swaptions to achieve target coverage levels for larger interest rate shocks.

Our hedging activity will vary in scope based on the risks being mitigated, the level of interest rates, the type of investments held, and other changing market conditions such as those resulting from the long term impact of the COVID-19 pandemic. Hedging instruments involve risk because they often are not traded on regulated exchanges, guaranteed by an exchange or its clearing house, or regulated by any U.S. or foreign governmental authorities, and our interest rate hedging may fail to protect or could adversely affect us because, among other things:

- interest rate hedging can be expensive, particularly during periods of rising and volatile interest rates;
- available interest rate hedging may not correspond directly with the interest rate risk for which protection is sought;
- the duration of the hedge may not match the duration of the related liability or asset;
- the credit quality of the hedging counterparty owing money on the hedge may be downgraded to such an extent that it impairs our ability to sell or assign our side of the hedging transaction;
- the hedging counterparty owing the money in the hedging transaction may default on its obligation to pay; and
- the federal tax regulations applicable to REITs limit our hedge activity outside of the TRS to hedging interest rate fluctuations with respect to debt used to acquire or carry real estate assets.

In addition, we may fail to recalculate, re-adjust and execute hedges in an efficient manner. Any hedging activity, which is intended to limit losses, may materially and adversely affect our results of operations and cash flows. Therefore, while we may enter into such transactions seeking to reduce interest rate risk, unanticipated changes in interest rates may result in worse overall investment performance than if we had not engaged in any such hedging transactions. Further, a liquid secondary market may not exist for a hedging instrument purchased or sold, and we may be required to maintain a position until exercise or expiration, which could result in significant losses. In addition, the degree of correlation between price movements of the instruments used in hedging strategies and price movements in the portfolio positions or liabilities being hedged may vary materially. Moreover, for a variety of reasons, we may not establish an effective correlation between such hedging instruments and the portfolio positions or liabilities being hedged. Any such ineffective correlation may prevent us from achieving the intended hedge and expose us to risk of loss. Numerous regulations currently apply to hedging and any new regulations or changes in existing regulations may significantly increase our administrative or compliance costs. Our derivative agreements generally provide for the daily mark to market of our hedge exposures. If a hedge counterparty determines that its exposure to us exceeds its exposure threshold, it may initiate a margin call and require us to post collateral. If we are unable to satisfy a margin call, we would be in default of our agreement, which could have a material adverse effect on our business, financial condition, liquidity and results of operations.

We utilize derivative financial instruments, which could subject us to risk of loss.

We utilize derivative financial instruments for hedging purposes, which may include swaps, options and futures. However, the prices of derivative financial instruments, including futures and options, are highly volatile, as are payments made pursuant to swap agreements. As a result, the cost of utilizing derivatives may reduce our income that would otherwise be available for distribution to shareholders or for other purposes, and the derivative instruments that we utilize may fail to effectively hedge our positions. We are also subject to credit risk with regard to the counterparties involved in the derivative transactions.

We are exposed to a number of risks relating to holding derivative instruments. A liquid secondary market may not exist for a hedging instrument purchased or sold, and we may be required to maintain a position until exercise or expiration, which could result in significant losses. In addition, the degree of correlation between price movements of the instruments used in hedging strategies and price movements in the portfolio positions or liabilities being hedged may vary materially. Moreover, for a variety of reasons, we may not establish an effective correlation between such hedging instruments and the portfolio positions or liabilities being hedged. Any such ineffective correlation may prevent us from achieving the intended hedge and expose us to risk of loss.

Numerous regulations currently apply to hedging and any new regulations or changes in existing regulations may significantly increase our administrative or compliance costs. Our derivative agreements generally provide for the daily mark to market of our hedge exposures. If a hedge counterparty determines that its exposure to us exceeds its exposure threshold, it may initiate a margin call and require us to post collateral. If we are unable to satisfy a margin call, we would be in default of our agreement, which could have a material adverse effect on our business, financial condition, liquidity and results of operations.

The use of derivative instruments is also subject to an increasing number of laws and regulations, including the Dodd-Frank Act and other federal regulations. These laws and regulations are complex, compliance with them may be costly and time consuming, and our failure to comply with any of these laws and regulations could subject us to lawsuits or government actions and damage our reputation, which could materially and adversely affect our business, financial condition, liquidity, results of operations and ability to make distributions to our shareholders.

Our correspondent production activities could subject us to increased risk of loss.

In our correspondent production activities, we acquire newly originated loans from mortgage lenders and sell or securitize those loans to or through the Agencies or other third party investors. We also sell the resulting securities into the MBS markets. However, there can be no assurance that PLS will continue to be successful in operating this business on our behalf or that we will continue to be able to capitalize on these opportunities on favorable terms or at all. In particular, we have committed, and expect to continue to commit, capital and other resources to this operation; however, PLS may not be able to continue to source sufficient asset acquisition opportunities to justify the expenditure of such capital and other resources. In the event that PLS is unable to continue to source sufficient opportunities for this operation, there can be no assurance that we would be able to acquire such assets on favorable terms or at all, or that such assets, if acquired, would be profitable to us. In addition, we may be unable to finance the acquisition of these assets and/or may be unable to sell the resulting MBS in the secondary mortgage market on favorable terms or at all. We are also subject to the risk that the fair value of the acquired loans may decrease prior to their disposition. The occurrence of any of these risks could adversely impact our business, financial condition, liquidity, results of operations and ability to make distributions to our shareholders.

The success and growth of our correspondent production activities will depend, in part, upon PLS' ability to adapt to and implement technological changes and to successfully develop, implement and protect its proprietary technology.

Our success in the mortgage industry is highly dependent upon the ability of our servicer, PLS, to adapt to constant technological changes, successfully enhance its current information technology solutions through the use of third-party and proprietary technologies, and introduce new solutions and services that more efficiently address our needs.

Our correspondent production activities are currently dependent, in part, upon the ability of PLS to effectively interface with our mortgage lenders and other third parties and to efficiently process loan fundings and closings. The correspondent production process is becoming more dependent upon technological advancement, and our correspondent sellers expect and require certain conveniences and service levels. In this regard, PLS has transitioned to a workflow-driven, cloud-based loan acquisition platform.

While we anticipate that PLS' cloud-based system will increase scalability and produce other efficiencies, there can be no assurance that PLS' cloud-based system will prove to be effective or that such correspondent sellers will easily adapt to PLS' cloud-based system. Any failure to effectively or timely transition to the new system and meet our expectations and the expectations of our correspondent sellers could have a material adverse effect on our business, financial condition and results of operations.

The development, implementation and protection of these technologies and becoming more proficient with them may also require significant capital expenditures by PLS. As these technological advancements increase in the future, PLS will need to further develop and invest in these technological capabilities to remain competitive. Moreover, litigation has become required for PLS to protect its technologies and such litigation is expected to be time consuming and result in substantial costs and diversion of PLS resources.

Any failure of PLS to develop, implement, execute or maintain its technological capabilities and any litigation costs associated with the protection of its technologies could adversely affect PLS and its ability to effectively perform its loan production and servicing activities on our behalf, which could adversely affect our business, financial condition, liquidity, results of operations and ability to make distributions to our shareholders.

We are not an approved Ginnie Mae issuer and an increase in the percentage of government loans we acquire could be detrimental to our results of operations.

Government-insured or guaranteed loans that are typically securitized through the Ginnie Mae program accounted for 53% of our purchases in fiscal year 2022. We are not approved as a Ginnie Mae issuer and rely on PLS to acquire such loans from us. As a result, we are unable to produce or own Ginnie Mae MSRs and we earn significantly less income in connection with our acquisition of government loans as opposed to conventional loans. Further, market demand for government loans over conventional loans may increase or PLS may offer pricing to our approved correspondent sellers for government loans that is more competitive in the market than pricing for conventional loans, the result of which may be our acquisition of a greater proportion of government loans. Any significant increase in the percentage of government loans we acquire could adversely impact our business, financial condition, liquidity, results of operations and ability to make distributions to our shareholders.

Risks Related to Our Investments

Our retention of credit risk underlying loans we sell to the GSEs is inherently uncertain and exposes us to significant risk of loss.

In conjunction with our correspondent business, we have previously entered into CRT arrangements with Fannie Mae, whereby we sell pools of loans into Fannie Mae guaranteed securitizations while retaining a portion of the credit risk and an interest-only ("IO") ownership interest in such loans or purchasing Agency securities that absorb losses incurred by such loans. Our CRT-related investments subject us to credit risks associated with delinquency and foreclosure similar to the risks associated with owning the underlying loans, and exposes us to risk of loss greater than the risks associated with selling the loans to Fannie Mae without the retention of such credit risk. Delinquency can result from many factors including unemployment, weak economic conditions or real estate values, or catastrophic events such as man-made or natural disaster, the long term impact of the COVID-19 pandemic, war or terrorist attack. Further, the risks associated with delinquency and foreclosure may in some instances be greater than the risks associated with owning the underlying loans because the structure of certain of the CRT Agreements provides that we may be required to realize losses in the event of delinquency or foreclosure even where there is ultimately no loss realized with respect to the underlying loan (e.g., as a result of a borrower's re-performance). We are also exposed to market risk and, as a result of prevailing market conditions or the economy generally, may be required to recognize losses associated with adverse changes to the fair value of the CRT Agreements. Any loss we incur may be significant and may reduce distributions to our shareholders and materially and adversely affect the market value of our common shares.

Government-sponsored entities have wound down lender risk share transactions such as CRT investments since the end of 2020. If we are unable to find a suitable alternative investment to investing in CRTs with similar returns, our business, liquidity, financial condition and results of operations could be materially and adversely affected.

The FHFA instructed government-sponsored entities to gradually wind down lender risk share transactions such as CRT investments as of the end of 2020 and, accordingly, we are no longer creating new CRT arrangements. As of December 31, 2022, we continued to hold net CRT-related investments (comprised of deposits securing CRT arrangements, CRT derivatives, CRT strips, interest-only security payable) totaling $1.1 billion. If we are unable to find suitable alternative investments comparable to CRTs, our business, liquidity, financial condition and results of operations could be materially and adversely affected.

A portion of our investments is in the form of loans, and the loans in which we invest subject us to costs and losses arising from delinquency and foreclosure, as well as the risks associated with residential real estate and residential real estate-related investments, any of which could result in losses to us.

We invest in residential loans that are typically secured by single-family residential property and are subject to risks and costs associated with delinquency and foreclosure and the resulting risks of loss. Our investments in loans also subject us to the risks of residential real estate and residential real estate-related investments, including, among others: (i) declines in the value of residential real estate; (ii) general and local economic conditions, including those resulting from the long term impact of the COVID-19 pandemic; (iii) lack of available mortgage funding for borrowers to refinance or sell their homes; (iv) overbuilding; (v) increases in property taxes and operating expenses; (vi) changes in zoning laws; (vii) costs resulting from the clean-up of, and liability to third parties for damages resulting from, environmental problems, such as indoor mold; (viii) casualty or condemnation losses; (ix) uninsured damages from floods, earthquakes or other natural disasters; (x) limitations on and variations in rents; (xi) fluctuations in interest rates; (xii) fraud by borrowers, originators and/or sellers of loans; (xiii) undetected deficiencies and/or inaccuracies in underlying loan documentation and calculations; and (xiv) failure of the borrower to adequately maintain the property. To the extent that assets underlying our investments are concentrated geographically, by property type or in certain other respects, we may be subject to certain of the foregoing risks to a greater extent.

We may be required to foreclose on a loan and such actions may subject us to greater concentration of the risks of the residential real estate markets and risks related to the ownership and management of real property. In the event of a foreclosure, we may assume direct ownership of the underlying real estate. The liquidation proceeds upon sale of such real estate may not be sufficient to recover our investment in the loan, resulting in a loss to us. In addition, the foreclosure process may be lengthy and expensive, and any delays or costs involved in the effectuation of a foreclosure of the loan or a liquidation of the underlying property may further reduce the proceeds and thus increase the loss.

In the event of the bankruptcy of a loan borrower, the loan to such borrower will be deemed to be secured only to the extent of the value of the underlying collateral at the time of bankruptcy (as determined by the bankruptcy court), and the lien securing the loan will be subject to the avoidance powers of the bankruptcy trustee or debtor-in-possession to the extent the lien is unenforceable under state law.

Our acquisition of mortgage servicing rights exposes us to significant risks.

MSRs arise from contractual agreements between us and the investors (or their agents) in mortgage securities and loans that we service on their behalf. We generally acquire MSRs in connection with our sale of loans to the Agencies where we assume the obligation to service such loans on their behalf. Any MSRs we acquire are initially recorded at fair value on our balance sheet. The determination of the fair value of MSRs requires our management to make numerous estimates and assumptions. Such estimates and assumptions include, without limitation, estimates of future cash flows associated with MSRs based upon assumptions involving interest rates as well as the prepayment rates, delinquencies and foreclosure rates of the underlying serviced loans as well as the long term impact of the COVID-19 pandemic. The ultimate realization of the MSRs may be materially different than the values of such MSRs as may be reflected in our consolidated balance sheet as of any particular date. Different persons in possession of the same facts may reasonably arrive at different conclusions as to the inputs and assumptions used to determine MSR fair value. The use of different estimates or assumptions in connection with the valuation of these assets could produce materially different fair values for such assets, which could have a material adverse effect on our business, financial condition, results of operations and cash flows. Accordingly, there may be material uncertainty about the fair value of any MSRs we acquire.

Prepayment speeds significantly affect MSRs. Prepayment speed is the measurement of how quickly borrowers pay down the unpaid principal balance of their loans or how quickly loans are otherwise brought current, modified, liquidated or charged off. We base the price we pay for MSRs on, among other things, our projection of the cash flows from the related pool of loans. Our expectation of prepayment speeds is a significant input to our cash flow projections. If prepayment speed expectations increase significantly, the fair value of the MSRs could decline and we may be required to record a non-cash charge that would have a negative impact on our financial results. Furthermore, a significant increase in prepayment speeds could materially reduce the ultimate cash flows we receive from MSRs, and we could ultimately receive substantially less than what we paid for such assets. Moreover, delinquency rates have a significant impact on the valuation of any MSRs. An increase in delinquencies generally results in lower revenue because typically we only collect servicing fees from Agencies or mortgage owners when we collect payments from the borrower. Our expectation of delinquencies is also a significant input underlying our cash flow projections. If delinquencies are significantly greater than we expect, the estimated fair value of the MSRs could be diminished. When the estimated fair value of MSRs is reduced, we could suffer a loss, which could have a material adverse effect on our business, financial condition, liquidity, results of operations and ability to make distributions to our shareholders.

Changes in interest rates are a key driver of the performance of MSRs. Historically, the fair value of MSRs has increased when interest rates increase and decline when interest rates decrease due to the effect those changes in interest rates have on prepayment estimates. We may pursue, in a manner that is consistent with our qualification as a REIT, various hedging strategies to seek to reduce our exposure to adverse changes in fair value resulting from changes in interest rates. Our hedging activity will vary in scope based on the level and volatility of interest rates, the type of assets held and other changing market conditions. Interest rate hedging may fail to protect or could adversely affect us. To the extent we do not utilize derivative financial instruments to hedge against changes in fair value of MSRs or the derivatives we use in our hedging activities do not perform as expected, our business, financial condition, liquidity, results of operations and ability to make distributions to our shareholders would be more susceptible to volatility due to changes in the fair value of, or cash flows from, MSRs as interest rates change. Furthermore, MSRs and the related servicing activities are subject to numerous federal, state and local laws and regulations and may be subject to various judicial and administrative decisions imposing various requirements and restrictions on our business. For example, the CARES Act allows borrowers with federally-backed loans to request temporary payment forbearance in response to the increased borrower hardships resulting from the long term impact of the COVID-19 pandemic.

We are not independently capable of protecting our MSR assets from borrower refinancing through targeted solicitations to, and origination of, refinance loans for borrowers in our servicing portfolio. Accordingly, unlike traditional mortgage originators and many servicers, we must rely upon PLS to refinance loans in our servicing portfolio that would otherwise be targeted by other lenders. PLS has agreed pursuant to the terms of an MSR recapture agreement to transfer cash to us in an amount equal to a tiered recapture fee based on the fair value of the MSRs relating to loans it refinances, There can be no assurance that PLS will either have or allocate the time and resources required to effectively and efficiently protect our MSR assets. Its failure to do so, or the termination of our MSR recapture agreement, could result in accelerated runoff of our MSR assets without offsetting compensation, decreasing its fair value and adversely impacting our business, financial condition, liquidity, results of operations and ability to make distributions to our shareholders.

Our failure to comply, or the failure of the servicer to comply, with the laws, rules or regulations to which we or they are subject by virtue of ownership of MSRs, whether actual or alleged, could expose us to fines, penalties or potential litigation liabilities, including costs, settlements and judgments, any of which could have a material adverse effect on our business, financial condition, liquidity, results of operations and ability to make distributions to our shareholders.

We may change our investment strategies and policies without shareholder consent, and this may materially and adversely affect the market value of our common shares and our ability to make distributions to our shareholders.

PCM is authorized by our board of trustees to follow very broad investment policies and, therefore, it has great latitude in determining the types of assets that are proper investments for us, as well as in making individual investment decisions. In the future, PCM may make investments with lower rates of return than those anticipated under current market conditions and/or may make investments with greater risks to achieve those anticipated returns. Our board of trustees will periodically review our investment policies and our investment portfolio but will not review or approve each proposed investment by PCM unless it falls outside our investment policies or constitutes a related party transaction.

In conducting periodic reviews, our board of trustees will rely primarily on information provided to it by PCM. Furthermore, PCM may use complex strategies, and transactions entered into by PMT or by PCM on behalf of PMT may be costly, difficult or impossible to unwind by the time they are reviewed by our board of trustees. We also may change our investment strategies and policies and targeted asset classes at any time without the consent of our shareholders, and this could result in our making investments that are different in type from, and possibly riskier than our current investments or the currently contemplated investments. Changes in our investment strategies and policies and targeted asset classes may expose us to new risks or increase our exposure to interest rate risk, counterparty risk, default risk and real estate market fluctuations, and this could materially and adversely affect the market value of our common shares and our ability to make distributions to our shareholders.

Investments in subordinate loans and subordinated or credit-linked MBS could subject us to increased risk of losses.

Our investments in subordinate loans or subordinate or credit-linked MBS could subject us to increased risk of losses. The contractual restrictions on transfer, risk retention requirements or the illiquidity of our investments may make it difficult for us to sell such investments if the need or desire arises. In the event a borrower defaults on a subordinate loan and lacks sufficient assets to satisfy such loan, we may lose all or a significant part of our investment. In the event a borrower on a subordinated loan becomes subject to bankruptcy proceedings, we will not have any recourse to the assets, if any, of the borrower that are not pledged to secure our loan. If a borrower defaults on our loan or on its senior debt (i.e., a first-lien loan), or in the event of a borrower bankruptcy, our subordinate loan will be satisfied only after all senior debt is paid in full. As a result, we may not recover all or even a significant part of our investment, which could result in losses. In general, losses on real estate assets securing a loan included in a securitization will be borne first by the equity holder of the property, then by a cash reserve fund or letter of credit provided by the borrower, if any, and then by the “first loss” subordinate security holder and then by the “second loss” subordinate security holder. In the event of default and the exhaustion of any equity support, reserve fund, letter of credit and any classes of securities junior to those in which we invest, we may not recover all or even a significant part of our investment, which could result in losses.

If the underlying mortgage portfolio has been serviced ineffectively by the loan servicer or if the fair values of the assets subsequently decline and, as a result, less collateral is available to satisfy interest and principal payments due on the related MBS, the securities in which we invest may suffer significant losses. The fair value of subordinate loans or subordinate or credit-linked investments are generally more sensitive to adverse actual or perceived economic downturns or individual issuer developments than more highly rated investments. In addition, interest rates and the liquidity of the MBS market may be impacted by the Federal Reserve increasing the federal funds rate, tapering MBS purchases or selling MBS. An economic downturn or a projection of an economic downturn, for example, could cause a decline in the price of lower credit quality investments because the ability of obligors to make principal and interest payments or to refinance may be impaired.

Climate change, adverse weather conditions, man-made or natural disasters, pandemics, terrorist attacks, and other long term physical and environmental changes and conditions could adversely impact properties that we own or that collateralize loans we own or service, as well as geographic areas where we conduct business.

Climate change, adverse weather conditions, man-made or natural disasters, pandemics, terrorist attacks and other long term physical and environmental changes and conditions could adversely impact properties that we own or that collateralize loans we own or service, as well as geographic areas where we conduct business. In addition, such adverse conditions and long term physical and environmental changes could impact the demand for, and value of, our assets, as well as the cost to service or manage such assets, or directly impact the value of our assets through damage, destruction or loss, and thereafter materially impact the availability or cost of insurance to protect against these events. Real estate value declines could also decrease the value supporting certain of our assets, such as CRTs and subordinate bonds, where we may provide a credit guaranty or otherwise be responsible for all or a portion of any credit losses. Upon the occurrence of a catastrophic event, we may be unable to continue our operations and may endure significant business interruptions, reputational harm, delays in servicing our customers and working with our partners, interruptions in the availability of our technology and systems, breaches of data security, and loss of critical data, all of which could have an adverse effect on our future operating results. Catastrophic events may also be uninsurable or not economically insurable and might make the insurance proceeds insufficient to repair or replace a property if it is damaged or destroyed.

There is an increasing global concern over the risks of climate change and related environmental sustainability matters. The physical risks of climate change may include rising average global temperatures, rising sea levels and an increase in the frequency and severity of extreme weather events and natural disasters, including floods, wildfires, hurricanes and tornados, and these events could impact our owned real estate and the properties collateralizing our loan assets or underlying our MSR assets and the local economies of certain areas in which we operate. Although we believe our owned real estate and the properties collateralizing our loan assets or underlying our MSR assets are appropriately covered by insurance, we cannot predict at this time if we or our borrowers will be able to obtain appropriate coverage at a reasonable cost in the future, or if we will be able to continue to pass along all of the costs of insurance. There also is a risk that one or more of our property insurers may not be able to fulfill their obligations with respect to payment claims due to a deterioration in its financial condition or may even cancel policies due to increasing costs of providing insurance coverage in certain geographic areas. Further, numerous treaties, laws and regulations have been enacted or proposed in an effort to regulate climate change, including regulations aimed at limiting greenhouse gas emissions and the implementation of "green" building codes. These laws and regulations may impact the rates at which we obtain property insurance and result in increased operating costs, or impose substantial costs on our borrowers or affect their ability to obtain appropriate coverage at reasonable costs. We may also incur costs associated with increased regulations or investor requirements for increased environmental and social disclosures and reporting. Additionally, climate change concerns could result in transition risk. Changes in consumer preferences and additional legislation and regulatory requirements, including those associated with a transition to a low-carbon economy, could increase expenses or otherwise adversely impact our operations and business.

Many of our investments are unrated or, where any credit ratings are assigned to our investments, they will be subject to ongoing evaluations and revisions and we can provide no assurance that those ratings will not be downgraded.

Many of our current investments are not, and many of our future investments will not be, rated by any rating agency. Therefore, PCM's assessment of the fair value and pricing of our investments may be difficult and the accuracy of such assessment is inherently uncertain; however, certain of our investments may be rated. If rating agencies assign a lower-than expected rating or reduce or withdraw, or indicate that they may reduce or withdraw, their ratings of our investments in the future, the fair value of these investments could significantly decline, which would materially and adversely affect the fair value of our investment portfolio and could result in investment losses.

We may be materially and adversely affected by risks affecting borrowers or the asset or property types in which our investments may be concentrated at any given time, as well as from unfavorable changes in the related geographic regions.

Our assets are not subject to any geographic, diversification or concentration limitations except that we will be concentrated in mortgage-related investments. Accordingly, our investment portfolio may be concentrated by geography, asset, property type and/or borrower, increasing the risk of loss to us if the particular concentration in our portfolio is subject to greater risks or is undergoing adverse developments. Adverse conditions in the areas where the properties securing or otherwise underlying our investments are located (including business layoffs or downsizing, industry slowdowns, changing demographics and other factors) and local real estate conditions (such as oversupply or reduced demand) may have an adverse effect on the fair value of our investments. A material decline in the demand for real estate in these areas may materially and adversely affect us. Concentration or a lack of diversification can increase the correlation of non-performance and foreclosure risks among our investments.

Many of our investments are illiquid and we may not be able to adjust our portfolio in response to changes in economic and other conditions.

Our investments in MSRs, CRT, and securities and loans held in consolidated variable interest entities may be illiquid. As a result, it may be difficult or impossible to obtain or validate third-party pricing on the investments we purchase. Illiquid investments typically experience greater price volatility, as a ready market does not exist, and can be more difficult to value. The contractual restrictions on transfer or the illiquidity of certain of our investments, including subordinate securities we are required to hold under applicable risk retention rules, may make it difficult for us to sell such investments if the need or desire arises, which could impair our ability to satisfy margin calls or certain REIT tests. In addition, if we are required to liquidate all or a portion of our portfolio quickly, we may realize significantly less than the recorded value, or may not be able to obtain any liquidation proceeds at all, thus exposing us to a material or total loss.

Fair values of many of our investments are estimates and the realization of reduced values from our recorded estimates may materially and adversely affect periodic reported results and credit availability, which may reduce earnings and, in turn, cash available for distribution to our shareholders.

The fair values of some of our investments are not readily determinable. We measure the fair value of these investments monthly, but the fair value at which our assets are recorded may differ from the values we ultimately realize. Ultimate realization of the fair value of an asset depends to a great extent on economic and other conditions that change during the time period over which the investment is held and are beyond the control of PCM, us or our board of trustees. Further, for certain investments that are not actively traded, fair value is an estimate based on good faith judgment of the price at which an investment can be sold since transacted prices of investments can only be determined by negotiation between a willing buyer and seller.

In certain cases, PCM's estimation of the fair value of our investments includes inputs provided by third-party dealers and pricing services, and valuations of certain securities or other assets in which we invest are often difficult to obtain and are subject to judgments that may vary among market participants. Changes in the estimated fair values of those assets are directly charged or credited to earnings for the period. If we were to liquidate a particular asset, the realized value may be more than or less than the amount at which such asset was recorded. Accordingly, in either event, the fair value of our common shares could be materially and adversely affected by our determinations regarding the fair value of our investments, and such valuations may fluctuate over short periods of time.

PCM utilizes analytical models and data in connection with the valuation of our investments, and any incorrect, misleading or incomplete information used in connection therewith would subject us to potential risks.

Given the illiquidity and complexity of our investments and strategies, PCM must rely heavily on models and data, including analytical models (both proprietary models developed by PCM and those supplied by third parties) and information and data supplied by third parties. If any third party information is intentionally or negligently misrepresented and such misrepresentation is not detected, then our model and data results could be materially impacted. Models and data are used to value investments or potential investments and also in connection with hedging our investments. In the event models and data prove to be incorrect, misleading or incomplete, any decisions made in reliance thereon expose us to potential risks. For example, by relying on incorrect models and data, especially valuation models, PCM may be induced to buy certain investments at prices that are too high, to sell certain other investments at prices that are too low or to miss favorable opportunities altogether. Similarly, any hedging based on faulty models and data may prove to be unsuccessful.

We depend on the accuracy and completeness of information about borrowers and counterparties and any misrepresented information could adversely affect our business, financial condition, liquidity and results of operations.

In connection with our correspondent production activities, we may rely on information furnished by or on behalf of borrowers and counterparties, including financial statements and other financial information. We also may rely on representations of borrowers and counterparties as to the accuracy and completeness of that information and, with respect to audited financial statements, on reports of independent auditors. If any of this information is intentionally or negligently misrepresented and such misrepresentation is not detected prior to loan funding, the fair value of the loan may be significantly lower than expected. Our controls and processes may not have detected or may not detect all misrepresented information in our loan acquisitions or from our business clients. Any such misrepresented information could materially and adversely affect our business, financial condition, results of operations and our ability to make distributions to our shareholders.

We are subject to counterparty risk and may be unable to seek indemnity or require our counterparties to repurchase loans if they breach representations and warranties, which could cause us to suffer losses.

When we purchase mortgage assets, our counterparty typically makes customary representations and warranties to us about such assets. Our residential loan purchase agreements may entitle us to seek indemnity or demand repurchase or substitution of the loans in the event our counterparty breaches a representation or warranty given to us. However, there can be no assurance that our loan purchase agreements will contain appropriate representations and warranties, that we will be able to enforce our contractual right to demand repurchase or substitution, or that our counterparty will remain solvent or otherwise be willing and able to honor its obligations under our loan purchase agreements. Our inability to obtain indemnity or require repurchase of a significant number of loans could materially and adversely affect our business, financial condition, liquidity, results of operations and our ability to make distributions to our shareholders.

When we sell loans, we are required to make customary representations and warranties about such loans to the loan purchaser. As part of our correspondent production activities, PLS re-underwrites a percentage of the loans that we acquire, and we rely upon PLS to ensure quality underwriting by our correspondent sellers, accurate third-party appraisals, and strict compliance with the representations and warranties that we require from our correspondent sellers and that are required from us by our investors.

Our residential loan sale agreements may require us to repurchase or substitute loans or indemnify the purchaser against future losses in the event we breach a representation or warranty given to the loan purchaser or in the event of an early payment default on a loan. The remedies available to the Agencies, other purchasers and insurers of loans may be broader than those available to us against the originator or correspondent lender, and if a purchaser or insurer enforces its remedies against us, we may not be able to enforce the remedies we have against the sellers. The repurchased loans typically can only be financed at a steep discount to their repurchase price, if at all. Repurchased loans are also typically sold at a discount to the unpaid principal balance, which in some cases can be significant. Significant repurchase activity could materially and adversely affect our business, financial condition, liquidity, results of operations and our ability to make distributions to our shareholders.

Our counterparties may terminate our MSRs, which could adversely affect our business, financial condition, liquidity and results of operations.

As is standard in the industry, under the terms of our master servicing agreements with the Agencies in respect of Agency MSRs that we retain in connection with our loan production, the Agencies have the right to terminate us as servicer of the loans we service on their behalf at any time (and, in certain instances, without the payment of any termination fee) and also have the right to cause us to sell the MSRs to a third party. In addition, our failure to comply with applicable servicing guidelines could result in our termination under such master servicing agreements by the Agencies with little or no notice and without any compensation. The owners of other non-Agency loans that we service may also terminate certain of our MSRs if we fail to comply with applicable servicing guidelines. If the MSRs are terminated on a material portion of our servicing portfolio, our business, financial condition, liquidity and results of operations could be adversely affected.

We are required to make servicing advances that can be subject to delays in recovery or may not be recoverable in certain circumstances, which could adversely affect our business, financial condition, liquidity, results of operations and ability to make distributions to our shareholders.

During any period in which a borrower is not making payments, we may be required under our servicing agreements in respect of our MSRs to advance our own funds to pay property taxes and insurance premiums, legal expenses and other protective advances, and may be required to advance principal and interest payments to security holders of the MBS into which the loans are sold. We also advance funds under these agreements to maintain, repair and market real estate properties on behalf of investors. As home values change, we may have to reconsider certain of the assumptions underlying our decisions to make advances and, in certain situations, our contractual obligations may require us to make advances for which we may not be reimbursed. In addition, if a loan serviced by us is in default or becomes delinquent, the repayment to us of the advance may be delayed until the loan is repaid or refinanced or a liquidation occurs. Federal, state or local regulatory actions may also result in an increase in the amount of servicing advances that we are required to make, lengthen the time it takes for us to be reimbursed for such advances and increase the costs incurred while the loan is delinquent. A delay in our ability to collect advances may adversely affect our liquidity, and our inability to be reimbursed for advances could have a material adverse effect on our business, financial condition, liquidity, results of operations and ability to make distributions to our shareholders.

Risks Related to Our Management and Relationship with Our Manager and Its Affiliates

We are dependent upon PCM and PLS and their resources and may not find suitable replacements if any of our service agreements with PCM or PLS are terminated.

We are externally advised and managed by PCM, an affiliate of PFSI, and we also have other separate contract agreements with other PFSI affiliates, such as PLS, to provide various services. Under our management agreement, PCM makes all or substantially all of our investment, financing and risk management decisions, and has significant discretion as to the implementation of our operating policies and strategies. Under our loan servicing agreement with PLS, PLS provides servicing for our portfolios of loans and MSRs, and under our mortgage banking services agreement with PLS, PLS provides fulfillment and disposition-related services in connection with our correspondent production business. The costs of these services impact our operating costs and may reduce our net income, but we rely on PCM and PLS to provide these services under these contractual agreements because we have limited in-house capabilities and employees to perform the activities independently.

No assurance can be given that the strategies of PCM, PLS or their affiliates under any of these agreements will be successful, that any of them will conduct complete and accurate due diligence or provide sound advice, or that any of them will act in our best interests with respect to the allocation of their resources to our business. The failure of any of them to do any of the above, conduct the business in accordance with applicable laws and regulations or hold all licenses or registrations necessary to conduct the business as currently operated would materially and adversely affect our ability to continue to execute our business plan.

In addition, the terms of these agreements extend until June 30, 2025, subject to automatic renewal for additional 18-month periods, but any of the agreements may be terminated earlier under certain circumstances or otherwise not-renewed. See "Termination of our management agreement is difficult and costly" below. If any agreement is terminated or not renewed and not replaced by a new agreement, it would materially and adversely affect our ability to continue to execute our business plan.

If our management agreement or loan servicing agreement is terminated or not renewed, we will have to obtain the services from another service provider. We may not be able to replace these services in a timely manner or on favorable terms, or at all. With respect to our mortgage banking services agreement, the services provided by PLS are inherently unique and not widely available, if at all. This is particularly true because we are not a Ginnie Mae licensed issuer, yet we are able to acquire government loans from our correspondent sellers that we know will ultimately be purchased from us by PLS. While we generally have exclusive rights to these services from PLS during the term of our mortgage banking services agreement, in the event of a termination we may not be able to replace these services in a timely manner or on favorable terms, or at all, and we ultimately would be required to compete against PLS as it relates to our correspondent business activities.

The failure of PLS or any other servicer to effectively service our portfolio of MSRs and loans would materially and adversely affect us. Pursuant to our loan servicing agreement, PLS provides us with primary and special servicing. PLS' loan servicing activities include collecting principal, interest and escrow account payments, if any, with respect to loans, as well as managing loss mitigation, which may include, among other things, collection activities, loan workouts, modifications, foreclosures, short sales and sales of REO. The ability of PLS or any other servicer or subservicer to effectively service our portfolio of loans is critical to our success, particularly given our large investment in MSRs or in the case of nonperforming loans, effecting property resolutions in a timely, orderly and economically efficient manner. The failure of PLS or any other servicer or subservicer to effectively service our portfolio of MSRs and loans would adversely impact our business, financial condition, liquidity, results of operations and our ability to make distributions to our shareholders.

In addition, our ability, through PLS, to promptly foreclose upon defaulted loans and liquidate the underlying real property plays a critical role in our valuation of the assets in which we invest and our expected return on those investments. There are a variety of factors that may inhibit our ability, through PLS, to foreclose upon a loan and liquidate the real property within the time frames we model as part of our valuation process or within the statutes of limitation under applicable state law, and this could increase our cost of doing business and/or diminish the expected return on investment.

The management fee structure could cause disincentive and/or create greater investment risk.

Pursuant to our management agreement, PCM is entitled to receive a base management fee that is based on our shareholders' equity (as defined in our management agreement) each quarter. As a result, significant base management fees would be payable to PCM for a given quarter even if we experience a net loss during that quarter. PCM's right to non-performance-based compensation may not provide sufficient incentive to PCM to devote its time and effort to source and maximize risk-adjusted returns on our investment portfolio, which could, in turn, materially and adversely affect the market price of our common shares and/or our ability to make distributions to our shareholders.

Conversely, PCM is also entitled to receive incentive compensation under our management agreement based on our performance on a rolling four quarter basis. In evaluating investments and other management strategies, the opportunity to earn incentive compensation based on our net income may lead PCM to place undue emphasis on higher yielding investments and the maximization of short-term income at the expense of other criteria, such as preservation of capital, maintenance of sufficient liquidity and/or management of market risk, in order to achieve higher incentive compensation. Investments with higher yield potential are generally riskier and more speculative.

The servicing fee structure could create a conflict of interest.

For its services under our loan servicing agreement, PLS is entitled to servicing fees that we believe are competitive with those charged by other loan servicers and include fixed per-loan monthly amounts based on the delinquency, bankruptcy and/or foreclosure status of the serviced loan or the REO, as well as activity fees that generally are fixed dollar amounts. PLS is also entitled to customary ancillary income and certain market-based fees and charges, including boarding and deboarding fees, liquidation and disposition fees, and assumption, modification and origination fees. Because certain of these fees are earned upon reaching a specific milestone, this fee structure may provide PLS with an incentive to foreclose more aggressively or liquidate assets for less than their fair value.

On our behalf, PLS may also refinance performing loans and originate new loans to facilitate the disposition of real estate that we acquire through foreclosure. In order to provide PLS with an incentive to produce such loans, PLS is entitled to receive origination fees and other compensation based on market-based pricing and terms that are consistent with the pricing and terms offered by PLS to unaffiliated third parties on a retail basis. This may provide PLS with an incentive to refinance a greater proportion of our loans than it otherwise would and/or to refinance loans on our behalf instead of arranging the refinancing with a third party lender, either of which might give rise to a potential or perceived conflict of interest.

Termination of our management agreement is difficult and costly.

It is difficult and costly to terminate, without cause, our management agreement. Our management agreement provides that it may be terminated by us without cause under limited circumstances and the payment to PCM of a significant termination fee. The cost to us of terminating our management agreement may adversely affect our desire or ability to terminate our management agreement with PCM without cause. PCM may also terminate our management agreement upon at least 60 days' prior written notice if we default in the performance of any material term of our management agreement and the default continues for a period of 30 days after written notice to us, or where we terminate our loan servicing agreement, our mortgage banking services agreement or certain other of our related party agreements with PCM or PLS without cause (at any time other than at the end of the current term or any automatic renewal term), whereupon in any case we would be required to pay to PCM a significant termination fee. As a result, our desire or ability to terminate any of our related party agreements may be adversely affected to the extent such termination would trigger the right of PCM to terminate the management agreement and our obligation to pay PCM a significant termination fee.

Our relationship with PCM may result in conflicts of interest.

Although our agreements with PCM and PLS provide us with certain exclusivity and other rights and we and PCM have adopted policies to specifically address some of the conflicts relating to our investment opportunities, there is no assurance that these measures will be adequate to address all of the conflicts that may arise or will address such conflicts in a manner that is favorable to us. We are also limited in our ability to acquire assets that are not qualifying real estate assets and/or real estate related assets. In addition, PCM and other entities or accounts that may be managed by PCM in the future may participate in some of our investments, which may not be the result of arm’s length negotiations and may involve or later result in potential conflicts between our interests in the investments and those of PCM or such other entities.

We may encounter conflicts of interest in our Manager’s efforts to appropriately allocate its time and services between activities of PFSI and the management of us, and the loss of the services of our Manager’s management team could adversely affect us.

Pursuant to our management agreement, PCM is obligated to provide us with the services of its senior management team, and the members of that team are required to devote such time to us as is necessary and appropriate, commensurate with our level of activity. The members of PCM’s senior management team may have conflicts in allocating their time and services between the operations of PFSI and our activities, and other entities or accounts that they may manage in the future.

Our failure to appropriately address various issues that may give rise to reputational risk could cause harm to our business and adversely affect our business, financial condition and results of operations.

Our business is subject to significant reputational risks. If we fail, or appear to fail, to address various issues that may give rise to reputational risk, we could significantly harm our business. Such issues include, but are not limited to, actual or perceived conflicts of interest and violations of legal or regulatory requirements. Similarly, market rumors and actual or perceived association with counterparties whose own reputations are under question could harm our business.

We may not adequately monitor and address potential conflicts between our interests and those of PFSI, PCM and PLS. We have implemented procedures and controls to be followed when real or potential conflicts of interest arise, but it is possible that potential or perceived conflicts could give rise to the dissatisfaction of, or litigation by, our investors or regulatory enforcement actions. Appropriately dealing with conflicts of interest is complex and difficult, and our reputation could be damaged if we fail, or appear to fail, to deal appropriately with one or more potential or actual conflicts of interest. Regulatory scrutiny, litigation or reputational risk incurred in connection with conflicts of interest would adversely affect our business in a number of ways and may adversely affect our results of operations. Reputational risk incurred in connection with conflicts of interest could negatively affect our financial condition and business, strain our working relationships with regulators and government agencies, expose us to litigation and regulatory action, impact our ability to attract and retain customers, trading counterparties, investors and employees and adversely affect our business, financial condition, liquidity, results of operations and our ability to make distributions to our shareholders.

Reputational damage can result from our actual or alleged conduct in any number of activities, including lending and debt collection practices, corporate governance, and actions taken by government regulators and community organizations in response to those activities. Negative public opinion can also result from social media and media coverage, whether accurate or not. Our reputation may also be negatively impacted by our environmental, social and governance ("ESG") practices and disclosures, including climate change practices and disclosures. In addition, various private third party organizations have developed ratings processes for evaluating companies on their approach to ESG matters. These third party ESG ratings may be used by some investors to assist with their investment and voting decisions. Any unfavorable ESG ratings may lead to reputational damage and negative sentiment among our investors and other stakeholders. These factors could impair our working relationships with government agencies and investors, expose us to litigation and regulatory action, negatively affect our ability to attract and retain customers, trading counterparties and employees, significantly harm our stock price and ability to raise capital, and adversely affect our results of operations.

Accounting rules for certain of our transactions are highly complex and involve significant judgment and assumptions. Changes in accounting interpretations or assumptions could impact our financial statements.

Accounting rules for mortgage loan sales and securitizations, valuations of financial instruments and MSRs, investment consolidations, income taxes and other aspects of our operations are highly complex and involve significant judgment and assumptions. These complexities could lead to a delay in preparation of financial information and the delivery of this information to our stockholders and also increase the risk of errors and restatements, as well as the cost of compliance. Our inability to timely prepare our financial statements in the future would likely be considered a breach of our financial covenants and adversely affect our share price significantly. Changes in accounting interpretations, assumptions as well as accounting rule misinterpretations could result in differences in our financial results or otherwise have a material adverse effect on our business, financial condition, liquidity and results of operations.

PCM and PLS both have limited liability and indemnity rights.

Our agreements with PCM and PLS provide that PCM and PLS will not assume any responsibility other than to provide the services specified in the applicable agreements. Our management agreement further provides that PCM will not be responsible for any action of our board of trustees in following or declining to follow its advice or recommendations. In addition, each of PCM and PLS and their respective affiliates, including each such entity's managers, officers, trustees, directors, employees and members, will be held harmless from, and indemnified by us against, certain liabilities on customary terms. As a result, to the extent we are damaged through certain actions or inactions of PCM or PLS, our recourse is limited and we may not be able to recover our losses.

Risks Related to Our Organization and Structure

Certain provisions of Maryland law, our staggered board of trustees and certain provisions in our declaration of trust could each inhibit a change in our control.

Certain provisions of the Maryland General Corporation Law (the "MGCL") applicable to a Maryland real estate investment trust may have the effect of inhibiting a third party from making a proposal to acquire us or of impeding a change in our control under circumstances that otherwise could provide the holders of our common shares with the opportunity to realize a premium over the then prevailing market price of such common shares.

In addition, our board of trustees is divided into three classes of trustees. Trustees of each class will be elected for three-year terms upon the expiration of their current terms, and each year one class of trustees will be elected by our shareholders. The staggered terms of our trustees may reduce the possibility of a tender offer or an attempt at a change in control, even though a tender offer or change in control might be in the best interests of our shareholders.

Further, our declaration of trust authorizes us to issue additional authorized but unissued common shares and preferred shares. Our board of trustees may, without shareholder approval, increase the aggregate number of our authorized common shares or the number of shares of any class or series that we have authority to issue and classify or reclassify any unissued common shares or preferred shares and may set the preferences, rights and other terms of the classified or reclassified shares. As a result, our board may establish a class or series of common shares or preferred shares or take other actions that could delay or prevent a transaction or a change in our control that might involve a premium price for our common shares or otherwise be in the best interests of our shareholders.

Our rights and the rights of our shareholders to take action against our trustees and officers are limited, which could limit shareholder recourse in the event of actions not in the best interest of our shareholders.

Our declaration of trust limits the liability of our present and former trustees and officers to us and our shareholders for money damages to the maximum extent permitted under Maryland law. Under current Maryland law, our present and former trustees and officers will not have any liability to us or our shareholders for money damages other than liability resulting from either (a) actual receipt of an improper benefit or profit in money, property or services or (b) active and deliberate dishonesty by the trustee or officer that was established by a final judgment and is material to the cause of action.

Our declaration of trust authorizes us to indemnify our present and former trustees and officers for actions taken by them in those capacities to the maximum extent permitted by Maryland law. Our bylaws require us to indemnify each present and former trustee or officer, to the maximum extent permitted by Maryland law, in the defense of any proceeding to which he or she is made, or threatened to be made, a party by reason of his or her service to us. In addition, we may be obligated to pay or reimburse the expenses incurred by our present and former trustees and officers without requiring a preliminary determination of their ultimate entitlement to indemnification. As a result, we and our shareholders may have more limited rights against our present and former trustees and officers than might otherwise exist absent the current provisions in our declaration of trust and bylaws or that might exist with other companies, which could limit shareholder recourse in the event of actions not in the best interest of our shareholders.

Our declaration of trust contains provisions that make removal of our trustees difficult, which could make it difficult for our shareholders to effect changes to our management.

Our declaration of trust provides that, subject to the rights of holders of any series of preferred shares, a trustee may be removed only for "cause" (as defined in our declaration of trust), and then only by the affirmative vote of at least two-thirds of the votes entitled to be cast generally in the election of trustees. Vacancies generally may be filled only by a majority of the remaining trustees in office, even if less than a quorum, for the full term of the class of trustees in which the vacancy occurred. These requirements make it more difficult to change our management by removing and replacing trustees and may prevent a change in our control that is in the best interests of our shareholders.

Our bylaws include an exclusive forum provision that could limit our shareholders' ability to obtain a judicial forum viewed by the shareholders as more favorable for disputes with us or our trustees or officers.

Our bylaws provide that the Circuit Court for Baltimore City, Maryland, or, if that Court does not have jurisdiction, the United States District Court for the District of Maryland, Baltimore Division, is the exclusive forum for any derivative action or proceeding brought on our behalf; any action asserting a claim of breach of fiduciary duty; any action asserting a claim against us arising pursuant to any provision of the Maryland REIT Law; or any action asserting a claim against us that is governed by the internal affairs doctrine. This exclusive forum provision may limit a shareholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our trustees or officers, which may discourage such lawsuits against us and our trustees and officers. Alternatively, if a court were to find the choice of forum provision contained in our bylaws to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could adversely affect our business and financial condition.

Failure to maintain exemptions or exclusions from registration under the Investment Company Act could materially and adversely affect us.

Because we are organized as a holding company that conducts business primarily through the Operating Partnership and its wholly-owned subsidiaries, our status under the Investment Company Act is dependent upon the status of our Operating Partnership which, as a holding company, in turn, will have its status determined by the status of its subsidiaries. If our Operating Partnership or one or more of its subsidiaries fail to maintain their exceptions or exclusions from the Investment Company Act and we do not have available to us another basis on which we may avoid registration, we may have to register under the Investment Company Act. This could subject us to substantial regulation with respect to our capital structure (including our ability to use leverage), management, operations, transactions with affiliated persons (as defined in the Investment Company Act), portfolio composition, including restrictions with respect to diversification and industry concentration, and other matters. It could also cause the breach of covenants we or our subsidiaries have made under certain of our financing arrangements, which could result in an event of default, acceleration of debt and/or termination.

There can be no assurance that the laws and regulations governing the Investment Company Act status of REITs, including guidance and interpretations from the Division of Investment Management of the SEC regarding the exceptions and exclusions therefrom, will not change in a manner that adversely affects our operations. If the SEC takes action that could result in our or our subsidiaries' failure to maintain an exception or exclusion from the Investment Company Act, we could, among other things, be required to (a) restructure our operations to avoid being required to register as an investment company, (b) effect sales of our assets in a manner that, or at a time when, we would not otherwise choose to do so or (c) register as an investment company (which, among other things, would require us to comply with the leverage constraints applicable to investment companies), any of which could negatively affect the value of our common shares, the sustainability of our business model, our financial condition, liquidity, results of operations and ability to make distributions to our shareholders.

Further, a loss of our Investment Company Act exceptions or exclusions would allow PCM to terminate our management agreement with us, and our loan servicing agreement with PLS is subject to early termination in the event our management agreement is terminated for any reason. If either of these agreements is terminated, we will have to obtain the services on our own, and we may not be able to replace these services in a timely manner or on favorable terms, or at all. This would have a material adverse effect on our ability to continue to execute our business strategy and would likely negatively affect our financial condition, liquidity, results of operations and ability to make distributions to our shareholders.

We intend to operate so that we and each of our subsidiaries are not required to register as investment companies under the Investment Company Act. We believe that our subsidiary, PMC, qualifies for one or more exemptions under the Investment Company Act because of the historical and current composition of its assets and income; however, there can be no assurances that the composition of PMC's assets and income will remain the same over time such that one or more exemptions will continue to be applicable.

If PMC is required to register as an investment company, we would be required to comply with a variety of substantive requirements under the Investment Company Act that impose, among other things: limitations on capital structure; restrictions on specified investments; prohibitions on transactions with affiliates; compliance with reporting, record keeping, voting and proxy disclosure; and, other rules and regulations that would significantly increase our operating expenses. Further, if PMC was or is required to register as an investment company, PMC would be in breach of various representations and warranties contained in its financial arrangements resulting in a default as to certain of our contracts and obligations. This could also subject us to civil or criminal actions or regulatory proceedings, or result in a court appointed receiver to take control of us and liquidate our business, any or all of which could have a material adverse effect on our business, financial condition, liquidity, results of operations, and ability to make distributions to our shareholders.

Rapid changes in the fair values of our investments may make it more difficult for us to maintain our REIT qualification or exclusion from the Investment Company Act.

If the fair value or income potential of our residential loans and other real estate-related assets declines as a result of increased interest rates, prepayment rates or other factors, we may need to increase certain real estate investments and income and/or liquidate our non-qualifying assets in order to maintain our REIT qualification or exclusion from the Investment Company Act. If the decline in real estate asset values and/or income occurs quickly, this may be especially difficult to accomplish, particularly given the illiquid nature of our investments. We may have to make investment decisions, including the liquidation of investments at a disadvantageous time or on unfavorable terms, that we otherwise would not make absent our REIT and Investment Company Act considerations, and such liquidations could have a material adverse effect on our business, financial condition, liquidity, results of operations, and ability to make distributions to our shareholders.

Risks Related to Taxation

Our failure to qualify as a REIT would result in higher taxes and reduced cash available for distribution to our shareholders.

We are organized and operate in a manner so as to qualify as a REIT for U.S. federal income tax purposes. Our qualification as a REIT depends on our satisfaction of certain asset, income, organizational, distribution, shareholder ownership and other requirements on a continuing basis. If we were to lose our REIT status in any taxable year, corporate-level income taxes, including applicable state and local taxes, would apply to all of our taxable income at federal and state tax rates, and distributions to our shareholders would not be deductible by us in computing our taxable income. Any such corporate tax liability could be substantial and would reduce the amount of cash available for distribution to our shareholders, which in turn would have an adverse impact on the value of our common shares. Unless we were entitled to relief under certain Internal Revenue Code provisions, we also would be disqualified from taxation as a REIT for the four taxable years following the year during which we ceased to qualify as a REIT.

Even if we qualify as a REIT, we face tax liabilities that reduce our cash flow, and a significant portion of our income may be earned through TRSs that are subject to U.S. federal income taxation.

Even if we qualify for taxation as a REIT, we may be subject to certain U.S. federal, state and local taxes on our income and assets, including taxes on any undistributed income, taxes on income from some activities conducted as a result of a foreclosure, and state or local income, property and transfer taxes, such as mortgage recording taxes. Any of these taxes would decrease cash available for distribution to our shareholders.

We also engage in business activities that are required to be conducted in a TRS. In order to meet the REIT qualification requirements, or to avert the imposition of a 100% tax that applies to certain gains derived by a REIT from dealer property or inventory, we hold a significant portion of our assets through, and derive a significant portion of our taxable income and gains in, a TRS, subject to the limitation that securities in a TRS may not represent more than 20% of our assets in order for us to remain qualified as a REIT. All taxable income and gains derived from the assets held from time to time in our TRS are subject to regular corporate income taxation.

The percentage of our assets represented by a TRS and the amount of our income that we can receive in the form of TRS dividends are subject to statutory limitations that could jeopardize our REIT status.

Currently, no more than 20% of the value of a REIT’s assets may consist of stock or securities of one or more TRSs at the end of each quarter. We may potentially have to modify our activities or the capital structure of one or more TRSs to comply with this limitation and maintain our qualification as a REIT. While we intend to manage our affairs so as to satisfy this requirement, there can be no assurance that we will be able to do so in all market circumstances and even if we are able to do so, compliance with this rule may reduce our flexibility in operating our business. Although a TRS is subject to U.S. federal, state and local income tax on its taxable income, we may from time to time need to make distributions of such after-tax income in order to keep the value of our TRS below 20% of our total assets. However, for purposes of one of the tests we must satisfy to qualify as a REIT, at least 75% of our gross income must in each taxable year generally be from real estate assets. While we monitor our compliance with both this income test and the limitation on the percentage of our assets represented by TRS securities, the two may at times be in conflict with one another. That is, it is possible that we may wish to distribute a dividend from a TRS in order to reduce the value of our TRS below 20% of the required percentage of our assets, but be unable to do so without violating the requirement that 75% of our gross income in the taxable year be derived from real estate assets. There can be no assurance that we will be able to comply with either or both of these tests in all market conditions. Our inability to comply with both of these tests could have a material adverse effect on our business, financial condition, liquidity, results of operations, qualification as a REIT and ability to make distributions to our shareholders.

Ordinary dividends payable by REITs do not generally qualify for the reduced tax rates applicable to certain corporate dividends.

The Internal Revenue Code provides for a 20% maximum federal income tax rate for dividends paid by regular United States corporations to eligible domestic shareholders that are individuals, trusts or estates. Dividends paid by REITs are generally not eligible for these reduced rates. H.R. 1, commonly known as the 2017 Tax Cuts and Job Act (the “Tax Act”), which was enacted on December 22, 2017, generally may allow domestic shareholders to deduct from their taxable income one-fifth of the REIT ordinary dividends payable to them for taxable years beginning after December 31, 2017 and before January 1, 2026. To qualify for this deduction, the shareholder receiving such dividend must hold the dividend-paying REIT shares for at least 46 days (taking into account certain special holding period rules) of the 91-day period beginning 45 days before the shares become ex-dividend, and cannot be under an obligation to make related payments with respect to a position in substantially similar or related property. However, even if a domestic shareholder qualifies for this deduction, the effective rate for such REIT dividends still remains higher than rates for regular corporate dividends paid to high-taxed individuals. The more favorable rates applicable to regular corporate dividends could cause investors who are individuals, trusts and estates to perceive investments in REITs to be relatively less attractive as a federal income tax matter than investments in the stocks of non-REIT corporations that pay dividends, which could materially and adversely affect the value of the stock of REITs, including our common shares.

Some of our early CRT investments may not be eligible REIT assets and are held by our TRS, resulting in a significant portion of our income from these investments being subject to U.S. federal and state income taxation in order not to jeopardize our REIT status.

Some of our recent CRT investments have been structured to satisfy our REIT qualification requirements. However, our other CRT investments may not be considered eligible REIT assets and are therefore held by our TRS in order not to jeopardize our REIT status. Income from CRT investments that are held in the TRS may be subject to U.S. federal and state income taxation. In the future we may consider holding other CRT investments in the REIT, depending on the precise structure of such investments and our level of certainty that such investments are in a form consistent with their characterization as qualifying assets for a REIT. If the Internal Revenue Service (“IRS”) were to take a position adverse to our interpretation, the consequences of such action could materially and adversely affect our business, financial condition, liquidity, results of operations, and our ability to make distributions to our shareholders.

We have not established a minimum distribution payment level and no assurance can be given that we will be able to make distributions to our shareholders in the future at current levels or at all.

We are generally required to distribute to our shareholders at least 90% of our taxable income each year for us to qualify as a REIT under the Internal Revenue Code, which requirement we currently intend to satisfy. To the extent we satisfy the 90% distribution requirement but distribute less than 100% of our taxable income, we will be subject to U.S. federal corporate income tax on our undistributed taxable income. We have not established a minimum distribution payment level, and our ability to make distributions to our shareholders may be materially and adversely affected by the risk factors discussed in this Report and any subsequent Quarterly Reports on Form 10-Q. Although we have made, and anticipate continuing to make, quarterly distributions to our shareholders, our board of trustees has the sole discretion to determine the timing, form and amount of any future distributions to our shareholders, and such determination will depend upon, among other factors, our historical and projected results of operations, financial condition, cash flows and liquidity, maintenance of our REIT qualification and other tax considerations, capital expenditure and other expense obligations, debt covenants, contractual prohibitions or other limitations and applicable law and such other matters as our board of trustees may deem relevant from time to time. Among the factors that could impair our ability to continue to make distributions to our shareholders are:

- our inability to invest the net proceeds from our equity offerings;
- our inability to make attractive risk-adjusted returns on our current and future investments;
- non-cash earnings or unanticipated expenses that reduce our cash flow;
- defaults in our investment portfolio or decreases in its value;
- reduced cash flows caused by delays in repayment or liquidation of our investments; and
- the fact that anticipated operating expense levels may not prove accurate, as actual results may vary from estimates.

As a result, no assurance can be given that we will be able to continue to make distributions to our shareholders in the future or that the level of any future distributions will achieve a market yield or increase or even be maintained over time, or that future dividends might not be a combination of stock and cash, as permitted under IRS guidelines, any of which could materially and adversely affect the market price of our common shares.

The REIT distribution requirements could materially and adversely affect our ability to execute our business strategies.

We intend to continue to make distributions to our shareholders to comply with the requirements of the Internal Revenue Code and to avoid paying corporate income tax on undistributed income. However, differences in timing between the recognition of taxable income and the actual receipt of cash could require us to sell assets, borrow funds on a short-term or long-term basis, or issue equity to meet the distribution requirements of the Internal Revenue Code. We may find it difficult or impossible to meet distribution requirements in certain circumstances. Due to the nature of the assets in which we invest and may invest and to our accounting elections for such assets, we may be required to recognize taxable income from those assets in advance of our receipt of cash flow on or proceeds from disposition of such assets.

In addition, pursuant to the Tax Act, we generally will be required to recognize certain amounts in income no later than the time such amounts are reflected on our financial statements filed with the SEC. The application of this rule may require the accrual of income with respect to loans, MBS, and other types of debt securities or interests in debt securities held by us, such as original issue discount or market discount, earlier than would be the case under other provisions of the Internal Revenue Code.

As a result, to the extent such income is not realized within a TRS, the requirement to distribute a substantial portion of our net taxable income could cause us to: (i) sell assets in adverse market conditions, (ii) borrow on unfavorable terms, (iii) distribute amounts that would otherwise be invested in future acquisitions, capital expenditures or repayment of debt or (iv) make a taxable distribution of our shares as part of a distribution in which shareholders may elect to receive shares or (subject to a limit measured as a percentage of the total distribution) cash, in order to comply with REIT requirements.

We may be required to report taxable income early in our holding period for certain investments in excess of the economic income we ultimately realize from them.

We acquire and/or expect to acquire in the secondary market debt instruments that we may significantly modify for less than their face amount, MBS issued with original issue discount, MBS acquired at a market discount, or debt instruments or MBS that are delinquent as to mandatory principal and interest payments. In each case, we may be required to report income regardless of whether corresponding cash payments are received or are ultimately collectible. If we eventually collect less than we had previously reported as income, there may be a bad debt deduction available to us at that time or we may record a capital loss in a disposition of such asset, but our ability to benefit from that bad debt deduction would depend on our having taxable income or capital gains, respectively, in that later taxable year or a subsequent taxable year. This possible “income early, losses later” phenomenon could materially and adversely affect us and our shareholders if it were persistent and in significant amounts.

The share ownership limits applicable to us that are imposed by the Internal Revenue Code for REITs and our declaration of trust may restrict our business combination opportunities.

In order for us to maintain our qualification as a REIT under the Internal Revenue Code, not more than 50% in value of our outstanding shares may be owned, directly or indirectly, by five or fewer individuals (as defined in the Internal Revenue Code to include certain entities) at any time during the last half of each taxable year following our first year. Our declaration of trust, with certain exceptions, authorizes our board of trustees to take the actions that are necessary and desirable to preserve our qualification as a REIT. Under our declaration of trust, no person may own more than 9.8% by vote or value, whichever is more restrictive, of our outstanding common shares or more than 9.8% by vote or value, whichever is more restrictive, of our outstanding shares of beneficial interest. Our board may grant an exemption to the share ownership limits in its sole discretion, subject to certain conditions and the receipt of certain representations and undertakings. These share ownership limits are based upon direct or indirect ownership by “individuals,” which term includes certain entities.

Ownership limitations are common in the organizational documents of REITs and are intended, among other purposes, to provide added assurance of compliance with the tax law requirements and to minimize administrative burdens. However, our share ownership limits might also delay or prevent a transaction or a change in our control that might involve a premium price for our common shares or otherwise be in the best interests of our shareholders.

Complying with the REIT requirements can be difficult and may cause us to forego otherwise attractive opportunities or liquidate otherwise attractive investments.

To qualify as a REIT for U.S. federal income tax purposes, we must continually satisfy tests concerning, among other things, the sources of our income, the nature and diversification of our assets, the amounts we distribute to our shareholders and the ownership of our shares. We may be required to make distributions to our shareholders at disadvantageous times or when we do not have funds readily available for distribution. Thus, compliance with the REIT requirements may hinder our ability to make certain attractive investments or require us to liquidate from our portfolio otherwise attractive investments. If we are compelled to liquidate our investments, we may be unable to comply with these requirements, ultimately jeopardizing our qualification as a REIT, or we may be subject to a 100% tax on any resultant gain if we sell assets that are treated as dealer property or inventory. These actions could have the effect of reducing our income and amounts available for distribution to our shareholders.

Complying with the REIT requirements may limit our ability to hedge effectively.

The REIT provisions of the Internal Revenue Code may limit our ability to hedge our assets, liabilities and operations. Under current law, any income from a hedging transaction we enter into either (i) to manage risk of interest rate changes with respect to borrowings made or to be made to acquire or carry real estate assets, (ii) to manage risk of currency fluctuations with respect to items of income that qualify for purposes of the REIT 75% or 95% gross income tests or assets that generate such income, or (iii) to hedge another instrument that hedges risks described in clause (i) or (ii) for a period following the extinguishment of the liability or the disposition of the asset that was previously hedged by the instrument, provided, that, in each case, such instrument is properly identified under applicable Treasury regulations, will not be treated as qualifying income for purposes of the REIT gross income tests. As a result of these rules, we may have to limit our use of hedging techniques that might otherwise be advantageous, which could result in greater risks associated with interest rate or other changes than we would otherwise be subject to.

The tax on prohibited transactions limits our ability to engage in transactions, including certain methods of securitizing loans that would be treated as sales for U.S. federal income tax purposes.

A REIT’s net income from prohibited transactions is subject to a 100% tax. In general, prohibited transactions are sales or other dispositions of property, other than foreclosure property, but including loans, held primarily for sale to customers in the ordinary course of business. We would be subject to this tax if we were to sell loans that we held primarily for sale to customers in a securitization transaction effected through the REIT. Therefore, in order to avoid the prohibited transactions tax, we engage in such sales of loans through the TRS. We may hold a substantial amount of assets in one or more TRSs that are subject to corporate income tax on its earnings, which may reduce the cash flow generated by us and our subsidiaries in the aggregate, and our ability to make distributions to our shareholders.

We acquire and hold residential mortgage-backed securities (“RMBS”) and have engaged, and expect to continue to engage, in RMBS trading activity as we evaluate our RMBS portfolio on a regular basis and reposition it from time to time as a trader. We acquire RMBS positions with the intention of holding them for investment and not for sale to customers in the ordinary course of business. We intend to conduct such trading activities under internal guidelines that we believe are sufficient to demonstrate that this is the case. We therefore believe that we will not be treated as engaging in “prohibited transactions” that would be subject to a 100% tax on any net gain derived from RMBS sales. However, we do not expect that such trading activities will fall within a statutory “safe harbor” that would conclusively protect us against an assertion by the IRS to the contrary. If the IRS were successfully to require treatment of sales made in the course of such trading activities as “prohibited transactions,” it would subject any net gain derived from such sales to this 100% tax, but would not affect our qualification as a REIT.

The taxable mortgage pool (“TMP”) rules may increase the taxes that we or our shareholders may incur, and may limit the manner in which we effect future securitizations.

Certain of our securitizations that involve the issuance of indebtedness rather than sales may likely be considered to result in the creation of TMPs for U.S. federal income tax purposes. A TMP is always classified as a corporation for U.S. federal income tax purposes. However, as long as a REIT owns 100% of a TMP, such classification generally does not result in the imposition of corporate income tax, because the TMP is a “qualified REIT subsidiary.”

In the case of such wholly-REIT owned TMPs, certain categories of our shareholders, such as foreign shareholders otherwise eligible for treaty benefits, shareholders with net operating losses, and tax exempt shareholders that are subject to unrelated business income tax, could be subject to increased taxes on a portion of their dividend income received from us that is attributable to the TMP, or “excess inclusion income.” In addition, to the extent that our shares are owned in record name by tax exempt “disqualified organizations,” such as certain government-related entities that are not subject to tax on unrelated business income, we may incur a corporate level tax on our allocable portion of excess inclusion income from such a wholly-REIT owned TMP. In that case and to the extent feasible, we may reduce the amount of our distributions to any disqualified organization whose share ownership gave rise to the tax, or we may bear such tax as a general corporate expense. To the extent that our shares owned by disqualified organizations are held in record name by a broker/dealer or other nominee, the broker/dealer or other nominee would be liable for the corporate level tax on the portion of our excess inclusion income allocable to the shares held by the broker/dealer or other nominee on behalf of disqualified organizations. While we intend to attempt to minimize the portion of our distributions that is subject to these rules, the law is unclear concerning computation of excess inclusion income, and its amount could be significant.

In the case of any TMP that would be taxable as a domestic corporation if it were not wholly-REIT owned, we would be precluded from selling equity interests in these securitizations to outside investors, or selling any debt securities issued in connection with these securitizations that might be considered to be equity interests for tax purposes. This marketing limitation may prevent us from selling more junior or non-investment grade debt securities in such securitizations and maximizing our proceeds realized in those offerings.

New legislation or administrative or judicial action, in each instance potentially with retroactive effect, could make it more difficult or impossible for us to qualify as a REIT.

The rules dealing with federal income taxation, including the present U.S. federal income tax treatment of REITs, may be modified, possibly with retroactive effect, by legislative, judicial or administrative action at any time, which could affect the U.S. federal income tax treatment of an investment in our common shares. Changes to the tax laws, including the U.S. federal tax rules that affect REITs, are constantly under review by persons involved in the legislative process, the IRS and the U.S. Treasury, which results in statutory changes as well as frequent revisions to Treasury Regulations and interpretations. Revisions in U.S. federal tax laws and interpretations thereof could materially and adversely affect us and our shareholders.

We also may enter into certain transactions where the REIT eligibility of the assets subject to such transactions is uncertain. In circumstances where the application of these rules and regulations affecting our investments is not clear, we may have to interpret them and their application to us. If the IRS were to take a position adverse to our interpretation, the consequences of such action could materially and adversely affect our business, financial condition, liquidity, results of operations, and our ability to make distributions to our shareholders.

General Risks

Our and our Manager's risk management efforts may not be effective.

We could incur substantial losses and our business operations could be disrupted if we and our Manager are unable to effectively identify, manage, monitor, and mitigate financial risks, such as credit risk, interest rate risk, prepayment risk, liquidity risk, climate risk and other market-related risks, as well as operational and legal risks related to our business, assets, and liabilities. We and our Manager also are subject to various laws, regulations and rules that are not industry specific, including employment laws related to employee hiring and termination practices, health and safety laws, environmental laws and other federal, state and local laws, regulations and rules in the jurisdictions in which we operate. Our and our Manager's risk management policies, procedures, and techniques may not be sufficient to identify all of the risks to which we are exposed, mitigate the risks we have identified, or identify additional risks to which we may become subject in the future. Our and our Manager's risk management framework is designed to identify, monitor and mitigate risks that could have a negative impact on our financial condition or reputation. This framework includes divisions or groups dedicated to enterprise risk management, credit risk, climate risk, corporate sustainability and ESG, information security, disaster recovery and other information technology-related risks, business continuity, legal and compliance, compensation structures and other human resources matters, vendor management and internal audit, among others. Expansion of our business activities may also result in our being exposed to risks to which we have not previously been exposed or may increase our exposure to certain types of risks, and we may not effectively identify, manage, monitor, and mitigate these risks as our business activities change or increase.

We could be harmed by misconduct or fraud that is difficult to detect.

We are exposed to risks relating to misconduct by our and our Manager's employees, and the employees of our Manager's subsidiaries, affiliates, contractors we use, or other third parties with whom we have relationships. For example, such employees could execute unauthorized transactions, use our assets improperly or without authorization, perform improper activities, use confidential information for improper purposes, or otherwise try to hide improper activities from us. This type of misconduct could also relate to our assets managed by PCM. This type of misconduct can be difficult to detect and if not prevented or detected could result in claims or enforcement actions against us or losses. Accordingly, misconduct by our and our Manager's employees and its subsidiaries, affiliates, contractors, or others could subject us to losses or regulatory sanctions and seriously harm our reputation. Our controls may not be effective in detecting this type of activity.

If we fail to maintain an effective system of internal controls, we may not be able to accurately determine our financial results or prevent fraud.

Effective internal controls are necessary for us to provide reliable financial reports and effectively prevent fraud. We may in the future discover areas of our internal controls that need improvement. Section 404 of the Sarbanes-Oxley Act requires us to evaluate and report on our internal control over financial reporting and have our independent auditors annually attest to our evaluation, as well as issue their own opinion on our internal control over financial reporting. While we have undertaken substantial work to comply with Section 404, we cannot be certain that we will be successful in maintaining adequate control over our financial reporting and financial processes.

If we or our independent auditors discover a material weakness, the disclosure of that fact, even if quickly remedied, could result in an event of default under one or more of our lending arrangements and/or reduce the market value of our common shares. Additionally, the existence of any material weakness or significant deficiency could require management to devote significant time and incur significant expense to remediate any such material weakness or significant deficiency, and management may not be able to remediate any such material weakness or significant deficiency in a timely manner, or at all. Accordingly, our failure to maintain effective internal control over financial reporting could result in misstatements of our financial results or restatements of our financial statements or otherwise have a material adverse effect on our business, financial condition, liquidity, results of operations and ability to make distributions to our shareholders.

Cybersecurity risks, cyber incidents and technology failures may adversely affect our business by causing a disruption to our operations, a compromise or corruption of our confidential information, and/or damage to our business relationships, all of which could negatively impact our financial results.

A cyber incident is considered to be any adverse event that threatens the confidentiality, integrity or availability of our information resources. These incidents may be an intentional attack or an unintentional event and could involve gaining unauthorized access to our information systems for purposes of theft of certain personally identifiable information of consumers, misappropriating assets, stealing confidential information, corrupting data or causing operational disruption. The result of these incidents may include disrupted operations, misstated or unreliable financial data, liability for stolen assets or information, increased cybersecurity protection and insurance costs, litigation and damage to our investor relationships.

As our reliance on rapidly changing technologies has increased, so have the risks posed to our information systems, both internal and those provided to us by third-party service providers such as cloud-based computing service providers. System disruptions and failures caused by fire, power loss, telecommunications outages, unauthorized intrusion, malware, natural disasters and other similar events may interrupt or delay our ability to provide services to our customers.

Despite our Manager's efforts to ensure the integrity of our systems and our investment in significant physical and technological security measures, employee training, contractual precautions, policies and procedures, board oversight and business continuity plans, there can be no assurance that any such cyber intrusions will not occur or, if they do occur, that they will be adequately addressed. We also may not be able to anticipate or implement effective preventive measures against all security breaches, especially because the methods of attack change frequently or may not be recognized until after such attack has been launched, and because security attacks can originate from a wide variety of sources, including third parties such as persons involved with organized crime or associated with third party service providers. Our data security management program includes identity, trust, vulnerability and threat management business processes as well as the adoption of standard data protection policies. We are also held accountable for the actions and inactions of our third-party vendors regarding cybersecurity and other consumer-related matters.

Any of the foregoing events could result in violations of applicable privacy and other laws, financial loss to us or to our customers, loss of confidence in our security measures, customer dissatisfaction, additional regulatory scrutiny, significant litigation exposure and harm to our reputation, any of which could have a material adverse effect on our business, financial condition, liquidity, results of operations and our ability to make distributions to our shareholders.

We operate in a highly competitive market and decreased margins resulting from increased competition or our inability to compete successfully could adversely affect our business, financial condition, liquidity and results of operations.

We operate in a highly competitive industry that could become even more competitive as a result of economic, legislative, regulatory and technological changes. We compete in our investment activities with other mortgage REITs, specialty finance companies, private funds, banks, mortgage bankers, insurance companies, mutual funds, institutional investors, investment banking firms, depository institutions, governmental bodies and other entities, many of which focus on acquiring mortgage assets. In addition, large commercial banks and savings institutions and other independent mortgage lenders and servicers are becoming increasingly competitive in the acquisition of newly originated loans. Many of these institutions have competitive advantages over us, including size, financial strength, access to capital, cost of funds, federal pre-emption and higher risk tolerance. Additionally, our existing and potential competitors may decide to modify their business models to compete more directly with our correspondent production business. Competition may result in fewer investments, higher prices, acceptance of greater risk, lower yields and a narrower spread of yields over our financing costs. Moreover, if more non-bank entities enter these markets and as more commercial banks aggressively compete, our correspondent production activities may generate lower volumes and/or margins.

Future issuances of debt securities, which would rank senior to our common shares, and future issuances of equity securities, which would dilute the holdings of our existing shareholders and may be senior to our common shares, may materially and adversely affect the market price of our common shares.

We may rely on additional common and preferred equity issuances to fund our business, which may rank senior and/or be dilutive to our current shareholders, or on forms of debt financing that rank senior to our shareholders and require a larger portion of our cash flow from operations, thereby reducing funds available for our operations, future business opportunities, cash distributions to our shareholders and other purposes. For example, our outstanding preferred shares have preferences on distribution payments, including liquidating distributions, which could limit our ability to make distributions, including liquidating distributions, to holders of our common shares. In addition, upon liquidation, holders of our debt securities and other loans would receive a distribution of our available assets before holders of our common shares.

Subject to applicable law, our board of trustees has the authority, without further shareholder approval, to issue additional debt, common shares and preferred shares on the terms and for the consideration it deems appropriate. We have issued, and/or intend to issue, additional common shares and securities convertible into, or exchangeable or exercisable for, common shares under our equity incentive plan. We also have an effective shelf registration statement allowing us to issue additional common shares and preferred shares, including, without limitation, common shares through our "at-the-market" equity program and, as of December 31, 2022, we have approximately $200 million of common shares available for issuance under that program.

We also may issue from time to time additional common shares in connection with portfolio or business acquisitions and may grant demand or piggyback registration rights in connection with such issuances. Because our decision to issue securities in any future offering will depend on market conditions and other factors beyond our control, we cannot predict the effect, if any, of future issuances of our common shares, preferred shares or other equity-based securities or the prospect of such issuances on the market price of our common shares. Issuances of a substantial amount of such securities, or the perception that such issuances might occur, could depress the market price of our common shares.

Thus, holders of our common shares bear the risk that our future issuances of debt or equity securities or other borrowings will reduce the market price of our common shares and dilute their ownership in us.

Initiating new business activities or investment strategies, developing new products or significantly expanding existing business activities or investment strategies may expose us to new risks and increase our cost of doing business.

Initiating new business activities or investment strategies, developing new products, or significantly expanding existing business activities or investment strategies, are ways to grow our businesses and respond to changing circumstances in our industry; however, they may expose us to new risks and regulatory compliance requirements. We cannot be certain that we will be able to manage these risks and compliance requirements effectively. Furthermore, our efforts may not succeed and any revenues we earn from any new or expanded business initiative or investment strategy may not be sufficient to offset the initial and ongoing costs of that initiative, which would result in a loss with respect to that initiative or strategy.

We may not be able to successfully operate our business or generate sufficient operating cash flows to make or sustain distributions to our shareholders.

There can be no assurance that we will be able to generate sufficient cash to pay our operating expenses and make distributions to our shareholders. For example, in the first, second and fourth quarters of fiscal year 2022, we reported net losses attributable to common shareholders of $29.6 million, $81.2 million and $5.8 million, respectively. The results of our operations and our ability to make or sustain distributions to our shareholders depends on many factors, including the availability of attractive risk adjusted investment opportunities that satisfy our investment strategies and our success in identifying and consummating them on favorable terms, the level and expected movement of home prices, the level and volatility of interest rates, readily accessible short-term and long-term financing on favorable terms, and conditions in the financial markets, real estate market and the economy, as to which no assurance can be given.

We also face substantial competition in acquiring attractive investments, both in our investment activities and correspondent production activities. While we try to diversify our investments among various types of mortgages and mortgage-related assets, the competition for such assets may compress margins and reduce yields, making it difficult for us to make investments with attractive risk-adjusted returns. There can be no assurance that we will be able to successfully transition out of investments producing lower returns into investments that produce better returns, or that we will not seek investments with greater risk to obtain the same level of returns. Any or all of these factors could cause the fair value of our investments to decline substantially and have a material adverse effect on our business, financial condition, liquidity, results of operations and ability to make distributions to our shareholders.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We do not own or lease any property. Our operations are carried out on our behalf at the principal executive offices of Pennymac, at 3043 Townsgate Road, Westlake Village, California, 91361.

Item 3. Legal Proceedings

From time to time, we may be involved in various legal actions, claims and proceedings arising in the ordinary course of business. As of December 31, 2022, we were not involved in any material legal actions, claims or proceedings.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for the Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Our common shares are listed on the New York Stock Exchange (Symbol: PMT). As of February 22, 2023, our common shares were held by 136 registered holders.

We intend to pay quarterly dividends and to distribute to our shareholders at least 90% of our taxable income in each year (subject to certain adjustments). This is one requirement to qualify for the tax benefits accorded to a REIT under the Internal Revenue Code. We have not established a minimum dividend payment level and our ability to pay dividends may be adversely affected for the reasons described in Part I, Item 1A of this Report in the section entitled "Risk Factors". All distributions are made at the discretion of our board of trustees and depend on our earnings, our financial condition, maintenance of our REIT status and such other factors as our board of trustees may deem relevant from time to time.

Unregistered Sales of Equity Securities and Use of Proceeds

There were no sales of unregistered equity securities during the quarter ended December 31, 2022.

Repurchase of our Common Shares

The following table summarized PMT common shares of beneficial interest ("Common Shares") repurchase activity for the quarter ended December 31, 2022:

Period	Total number of shares purchased	Average price paid per share	Total number of shares purchased as part of publicly announced plans or programs (1)	Amount available for future share repurchases under the plans or programs (1)
	(in thousands, except average price paid per share)			
October 1, 2022 – October 31, 2022	1,166	$ 11.80	1,166	$ 101,754
November 1, 2022 – November 30, 2022	2	$ 13.49	2	$ 101,730
December 1, 2022 – December 31, 2022	38	$ 12.42	38	$ 101,261

(1) On October 24, 2022, the Company's board of trustees approved an increase to the Company's common share repurchase authorization from $400 million to $500 million (the "share repurchase program"). The share repurchase program does not require the Company to purchase a specific number of common shares, and the timing and amount of any common shares repurchased are based on market conditions and other factors, including price, regulatory requirements and capital availability. Common share repurchases may be effected through privately negotiated transactions or open market purchases, including pursuant to a trading plan implemented pursuant to Rule 10b5-1 of the Exchange Act. The share repurchase program does not have an expiration date but may be suspended, modified or discontinued at any time without prior notice.

Item 6. Reserved

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

We are a specialty finance company that invests primarily in mortgage-related assets. Our objective is to provide attractive risk-adjusted returns to our investors over the long-term, primarily through dividends and secondarily through capital appreciation. Our investment focus is on the mortgage-related assets that we create through our correspondent production activities, including mortgage servicing rights ("MSRs"), subordinate mortgage-backed securities ("MBS"), and credit risk transfer ("CRT") arrangements, which include CRT Agreements and CRT strips that absorb credit losses on certain of the loans that we sold. We also invest in Agency MBS and senior non-Agency MBS. We have also historically invested in excess servicing spread ("ESS") and distressed mortgage assets (distressed loans and real estate acquired in settlement of loans ("REO")), which we have substantially liquidated.

We are externally managed by PNMAC Capital Management, LLC ("PCM"), an investment adviser that specializes in and focuses on U.S. mortgage assets. Our loans and MSRs are serviced by PennyMac Loan Services, LLC ("PLS"). PCM and PLS are both indirect controlled subsidiaries of PennyMac Financial Services, Inc. ("PFSI"), a publicly-traded mortgage banking and investment management company.

During the year ended December 31, 2022, we purchased newly originated prime credit quality residential loans with fair values totaling $88.1 billion as compared to $181.4 billion and $170.0 billion for the years ended December 31, 2021 and December 31, 2020, respectively, in our correspondent production business. To the extent that we purchase loans that are insured by the U.S. Department of Housing and Urban Development through the Federal Housing Administration, or insured or guaranteed by the U.S. Department of Veterans Affairs or U.S. Department of Agriculture, we and PLS have agreed that PLS will fulfill and purchase such loans, as PLS is a Government National Mortgage Association ("Ginnie Mae") approved issuer and we are not. This arrangement has enabled us to compete with other correspondent aggregators that purchase both government and conventional loans. During 2022 we began selling certain conventional loans to PLS in order to optimize our use and allocation of capital. Our purchase volume included $50.6 billion, $67.9 billion and $63.6 billion of loans we sold to PLS during the years ended December 31, 2022, 2021 and 2020, respectively. We receive a sourcing fee from PLS based on the unpaid principal balance ("UPB") of each loan that we sell to PLS under such arrangement, and earn interest income on the loan for the period we hold it before the sale to PLS. During the years ended December 31, 2022, 2021 and 2020, we received sourcing fees totaling $5.0 million, $6.5 million and $11.0 million, respectively.

We operate our business in four segments: Correspondent production, Interest rate sensitive strategies, Credit sensitive strategies and our Corporate operations as described below.

Our Investment Activities

Correspondent Production

Our correspondent production activities involve the acquisition and sale of newly originated prime credit quality residential loans. Correspondent production serves as the source of our investments in MSRs, private label non-Agency securitizations, and through 2020, CRT arrangements. Our correspondent production and resulting investment activity are summarized below:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Sales of loans acquired for sale:			
To nonaffiliates	$ 39,077,156	$ 110,919,477	$ 106,306,805
To PennyMac Financial Services, Inc.	50,575,617	67,851,630	63,618,185
	$ 89,652,773	$ 178,771,107	$ 169,924,990
Net gains on loans acquired for sale	$ 25,692	$ 87,273	$ 379,922
Investment activities resulting from correspondent production:			
Receipt of MSRs as proceeds from sales of loans	$ 670,343	$ 1,484,629	$ 1,158,475
Retention of interests in securitizations of loans secured by investment properties, net of associated asset-backed financings	23,485	42,256	—
Purchase of subordinate bonds backed by previously-sold loans secured by investment properties held in consolidated variable interest entities	—	28,815	—
Investments in CRT arrangements:			
Deposits securing CRT arrangements	—	—	1,700,000
Recognition of firm commitment to purchase CRT securities (1)	—	—	(38,161)
Change in face amount of firm commitment to purchase CRT securities and commitment to fund *Deposits securing CRT arrangements*	—	—	(1,502,203)
Total investments in CRT arrangements	—	—	159,636
Total investments resulting from correspondent activities	$ 693,828	$ 1,555,700	$ 1,318,111

(1) Initial recognition of firm commitment upon sale of loans.

Interest Rate Sensitive Investments

Our interest rate sensitive investments include:

- Mortgage servicing rights. During the year ended December 31, 2022, we received approximately $670.3 million of MSRs as proceeds from sales of loans acquired for sale. We held $4.0 billion of MSRs at fair value at December 31, 2022.
- REIT-eligible Agency and senior mortgage-backed or mortgage-related securities. We purchased approximately $2.6 billion Agency fixed-rate pass-through securities and non-Agency senior MBS, net of sales, during the year ended December 31, 2022. We held Agency fixed-rate pass-through securities and non-Agency senior MBS with fair values totaling approximately $4.3 billion at December 31, 2022.

Credit Sensitive Investments

CRT Arrangements

During the year ended December 31, 2022, we did not acquire any additional CRT investments. We held net CRT-related investments (comprised of deposits securing CRT arrangements, CRT derivatives, CRT strips and an interest-only security payable) totaling approximately $1.1 billion at December 31, 2022.

Subordinate Credit-Linked Mortgage-Backed Securities

Subordinate credit-linked MBS provide us with a higher yield than senior securities. However, we retain credit risk in the subordinate credit-linked MBS since they are the first securities to absorb credit losses relating to the underlying loans. We purchased approximately $184.7 million of subordinate credit-linked MBS during the year ended December 31,2022. We held subordinate credit-linked MBS with fair values totaling approximate $177.9 million at December 31, 2022.

As the result of the Company's consolidation of the variable interest entities that issued the subordinate MBS as described in Note 6 – *Variable Interest Entities – Investment in Securities Backed by Loans Secured by investment Properties* to the consolidated financial statements included in this Report, we include loans underlying these and similar transactions totaling approximately $1.5 billion on our consolidated balance sheet as of December 31, 2022.

Taxation

We believe that we qualify to be taxed as a REIT and as such will not be subject to federal income tax on that portion of our income that is distributed to shareholders as long as we meet applicable REIT asset, income and share ownership tests. If we fail to qualify as a REIT, and do not qualify for certain statutory relief provisions, our profits will be subject to income taxes and we may be precluded from qualifying as a REIT for the four tax years following the year we lose our REIT qualification.

A portion of our activities, including our correspondent production business, is conducted in our taxable REIT subsidiary ("TRS"), which is subject to corporate federal and state income taxes. Accordingly, we have made a provision for income taxes with respect to the operations of our TRS. We expect that the effective rate for the provision for income taxes may be volatile in future periods since only the portion of our income earned in our TRS is subject to the provision. Our goal is to manage the business to take full advantage of the tax benefits afforded to us as a REIT.

We evaluate our deferred tax assets quarterly to determine if valuation allowances are required based on the consideration of all available positive and negative evidence using a "more-likely-than-not" standard with respect to whether deferred tax assets will be realized. Our evaluation considers, among other factors, taxable loss carryback availability, expectations of sufficient future taxable income, trends in earnings, existence of taxable income in recent years, the future reversal of temporary differences, and available tax planning strategies that could be implemented, if required. The ultimate realization of our deferred tax assets depends primarily on our ability to generate future taxable income during the periods in which the related deferred tax assets become deductible.

Critical Accounting Policies

Preparation of financial statements in compliance with accounting principles generally accepted in the United States ("GAAP") requires us to make estimates and judgments that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, and revenues and expenses during the reporting period. Certain of these estimates significantly influence the portrayal of our financial condition and results, and they require us to make difficult, subjective or complex judgments. Our critical accounting policies primarily relate to our fair value estimates.

Fair value

Our consolidated balance sheet is substantially comprised of assets that are measured at or based on their fair values. Measurement at fair value may be on a recurring or nonrecurring basis depending on the accounting principles applicable to the specific asset or liability and whether we have elected to carry them at fair value. We group financial statement items measured at or based on fair value in three levels based on the markets in which the assets are traded and the observability of the inputs used to determine fair value.

The fair value level assigned to an asset or liability is identified based on the lowest level of inputs that are significant to determining the respective asset's or liability's fair value. These levels are:

Level	Description	December 31, 2022 Carrying value of assets measured (1) (in thousands)	Percentage of Total assets	Percentage of Total shareholders' equity
1	Prices determined using quoted prices in active markets for identical assets or liabilities.	$ 263,307	2%	13%
2	Prices determined using other significant observable inputs. Observable inputs are inputs that other market participants would use in pricing an asset or liability and are developed based on market data obtained from sources independent of the Company.	7,830,404	56%	399%
3	Prices determined using significant unobservable inputs. Unobservable inputs reflect our judgments about the factors that market participants use in pricing an asset or liability, and are based on the best information available in the circumstances. (2)	5,365,069	39%	273%
	Total assets measured at or based on fair value	$ 13,458,780	97%	685%
	Total assets	$ 13,921,564		
	Total shareholders' equity	$ 1,962,815		

(1) Includes assets measured on both a recurring and nonrecurring basis based on the accounting principles applicable to the specific asset or liability and whether we have elected to carry the item at its fair value.

(2) For purposes of this discussion, includes *Deposits securing credit risk transfer arrangements* which are carried at amortized cost. These deposits along with the related CRT derivatives and CRT strips are held in the form of securities which are the basis for valuation of the CRT derivatives and strips.

At December 31, 2022, $13.5 billion, or 97%, of our total assets were carried at fair value on a recurring basis and $7.7 million, or less than 1% (consisting of REO), were carried based on fair value on a non-recurring basis. Of these assets, $5.4 billion, or 39%, of total assets are measured using "Level 3" fair value inputs-significant inputs where there is difficulty observing the inputs used by the market participants to establish fair value. Different approaches to valuing or changes in inputs used to measure these assets can have a significant effect on the amounts reported for these items and their effects on our results of operations.

Changes in inputs to measurement of Level 3 fair value financial statement items have a significant effect on the amounts reported for these items including their reported balances and their effects on our pre-tax income as summarized below:

Year ended December 31,	Change in fair value: Loans at fair value (1)	Excess servicing spread	Interest rate lock commitments	CRT Assets	Mortgage servicing rights (2)	Total	Pre-tax income
	(in thousands)						
2022	$ (2,680)	—	(234,146)	(163,908)	819,727	$ 418,993	$ 63,087
2021	$ 1,182	1,037	(156,840)	163,290	(39,056)	$ (30,387)	$ 44,661
2020	$ (1,578)	(24,970)	536,943	(267,969)	(706,107)	$ (463,681)	$ 79,730

(1) Includes loans held for sale and loans at fair value.

(2) Excluding changes in fair value attributable to realization of cash flows.

As a result of the difficulty in observing certain significant valuation inputs affecting "Level 3" fair value assets and liabilities, we are required to make judgments regarding these items' fair values. Different persons in possession of the same facts may reasonably arrive at different conclusions as to the inputs to be applied in estimating the fair value of these assets and liabilities. Such differences may result in significantly different fair value measurements. Likewise, due to the general illiquidity of some of these fair value assets and liabilities, subsequent transactions may be at values significantly different from those reported.

Because the fair value of "Level 3" fair value assets and liabilities is difficult to estimate, our valuation process is conducted by specialized staff and receives significant management oversight. We have assigned the responsibility for estimating the fair values of our "Level 3" fair value assets and liabilities, except for interest rate lock commitments ("IRLCs"), to PFSI's Financial Analysis and Valuation group (the "FAV group"). With respect to those valuations, PFSI's FAV group reports to PFSI's valuation committee, which oversees the valuations. PFSI's valuation committee includes the Company's chief financial, risk, credit and deputy chief investment officers as well as other senior members of the Company's finance, capital markets and risk management staffs.

The fair value of our IRLCs is developed by our Manager's Capital Markets Risk Management staff and is reviewed by our Manager's Capital Markets Operations group in the exercise of their internal control responsibilities.

Following is a discussion relating to our approach to measuring the assets and liabilities that are most affected by "Level 3" fair value estimates.

Loans

We carry loans at their fair values. We recognize changes in the fair value of loans in current period income as a component of either *Net gains on loans acquired for sale* or *Net (losses) gains on investments and financings*. We estimate fair value of loans based on whether the loans are saleable into active markets with observable pricing.

- We categorize loans that are saleable into active markets as "Level 2" fair value assets. Such loans include substantially all of our loans acquired for sale and our loans held in VIEs. We estimate such loans' fair values using their quoted market price or market price equivalent. We held $3.3 billion of such loans at fair value at December 31, 2022.
- We categorize loans that are not saleable into active markets as "Level 3" fair value assets. Such loans include our investments in distressed loans, home equity and commercial loans held for sale and certain of the loans acquired for sale which we subsequently repurchased pursuant to representations and warranties or that we identified as non-salable to the Agencies. We held $14.2 million of such loans at fair value at December 31, 2022.

We estimate the fair value of our "Level 3" fair value loans based on the expected resolution of individual loans for distressed loans and using a discounted cash flow valuation model for loans held for sale. Inputs to the model include current interest rates, loan amount, payment status and property type, and forecasts of future interest rates, home prices, prepayment speeds, defaults and loss severities.

Derivative Assets

Interest Rate Lock Commitments

Our net gains on loans acquired for sale include our estimates of gains or losses we expect to realize upon the sale of loans we have committed to purchase but have not yet purchased or sold. Therefore, we recognize a substantial portion of our net gain on loans acquired for sale at fair value before we purchase the loan. In the course of our correspondent production activities, we make contractual commitments to correspondent sellers to purchase loans at specified terms. We call these commitments IRLCs. We recognize the fair value of IRLCs at the time we make the commitment to the correspondent seller and adjust the fair value of such IRLCs during the time the commitment is outstanding.

We carry IRLCs as either derivative assets or derivative liabilities on our consolidated balance sheet. The fair value of an IRLC is transferred to the fair value of loans acquired for sale at fair value when the loan is funded.

An active, observable market for IRLCs does not exist. Therefore, we measure the fair value of IRLCs using methods and inputs we believe that market participants use in pricing IRLCs. We estimate the fair value of an IRLC based on quoted Agency MBS prices, our estimates of the fair value of the MSRs we expect to receive in the sale of the loans and the probability that the loan will be purchased as a percentage of the commitment we have made (the "pull-through rate").

Pull-through rates and MSR fair values are based on our estimates as these inputs are difficult to observe in the mortgage marketplace. Changes in our estimate of the probability that a loan will fund and changes in mortgage market interest rates are recognized as IRLCs move through the purchase process and may result in significant changes in the estimates of the fair value of the IRLCs. Such changes are reflected in the change in fair value of IRLCs which is a component of our *Net gains on loans acquired for sale* and may be included in *Net loan servicing fees – From nonaffiliates – Mortgage servicing rights hedging results* when we include the IRLCs in our MSR hedging activities in the period of the change. The financial effects of changes in the pull-through rates and MSR fair values generally move in different directions. Increasing interest rates have a positive effect on the fair value of the MSR component of IRLC fair value but increase the pull-through rate for the principal and interest payment portion of the loans that decrease in fair value.

A shift in the market for IRLCs or a change in our assessment of an input to the valuation of IRLCs can have an effect on the amount of gain on sale of loans acquired for sale for the period. We believe that the fair value of IRLCs is most sensitive to changes in pull-through rate inputs. We held $0.5 million of net IRLC liabilities at December 31, 2022. Following is a quantitative summary of the effect of changes in pull-through inputs on the fair value of IRLCs at December 31, 2022:

Effect on fair value of a change in pull-through rate		
Change in input (1)	**Effect on fair value**	
	(in thousands)	
(20%)	$	68
(10%)	$	34
(5%)	$	17
5%	$	(32)
10%	$	(68)
20%	$	(67)

(1) Pull-through rate adjustments for individual loans are limited to adjustments that will increase the individual loan's pull-through rate to 100%.

Credit Risk Transfer Arrangements

Through late 2020, we had CRT arrangements with Fannie Mae, pursuant to which we sold pools of loans into Fannie Mae-guaranteed securitizations while retaining recourse obligations as part of the retention of an interest-only ownership interest in such loans. We carry the strip or derivative asset or liability relating to these transactions at fair value and recognize changes in the respective assets' or liability's fair values in *Net (losses) gains on investments and financings* in the consolidated statements of operations.

A shift in the market for CRT arrangements or a change in our assessment of an input to the valuation of CRT arrangements can have a significant effect on the fair value of CRT arrangements and in our results of operations for the period. We believe that the most significant "Level 3" fair value inputs to the valuation of CRT arrangements are the pricing spread (discount rate) and the remaining loss expectation, which is influenced by the changes in the fair value of the properties securing the loans in the reference pool.

We held $1.1 billion of net CRT arrangement assets at December 31, 2022. Following is a summary of the effect on fair value of various changes to the pricing spread and property value shifts (which is used in the determination of estimated remaining credit losses) input used to estimate the fair value of our CRT arrangements as of December 31, 2022:

Effect on fair value of a change in pricing spread input			**Effect on fair value of a change in property value**		
Change in input	**Effect on fair value**		**Change in input**	**Effect on fair value**	
(in basis points)	**(in thousands)**			**(in thousands)**	
(100)	$	42,115	(15%)	$	(119,403)
(50)	$	20,688	(10%)	$	(70,147)
(25)	$	10,246	(5%)	$	(31,008)
25	$	(10,114)	5%	$	24,864
50	$	(20,040)	10%	$	44,802
100	$	(39,400)	15%	$	60,627

Mortgage Servicing Rights

MSRs represent the value of a contract that obligates us to service the loans on behalf of the owner of the loan in exchange for servicing fees and the right to collect certain ancillary income from the borrower. We carry all of our investments in MSRs at fair value and recognize changes in fair value in current period results of operations. Changes in fair value of MSRs are recognized as a component of *Net loan servicing fees – From nonaffiliates – Change in fair value of mortgage servicing rights* in our consolidated statements of operations.

A shift in the market for MSRs or a change in our assessment of an input to the valuation of MSRs can have a significant effect on the fair value of MSRs and in our results of operations for the period. We believe the most significant "Level 3" fair value inputs to the valuation of MSRs are the pricing spread (discount rate), prepayment speed and annual per-loan cost of servicing. We held $4.0 billion of MSRs at December 31, 2022. Following is a summary of the effect on fair value of various changes to these key inputs that we use in making our fair value estimates as of December 31, 2022:

	Effect on fair value of a change in input		
Change in input	**Pricing spread**	**Prepayment speed**	**Servicing cost**
		(in thousands)	
(20%)	$ 221,745	$ 221,309	$ 70,515
(10%)	$ 108,032	$ 107,046	$ 35,258
(5%)	$ 53,330	$ 52,668	$ 17,629
5%	$ (52,004)	$ (51,044)	$ (17,629)
10%	$ (102,727)	$ (100,544)	$ (35,258)
20%	$ (200,497)	$ (195,201)	$ (70,515)

The preceding asset analyses hold constant all of the inputs other than the input that is being changed to show an estimate of the effect on fair value of a change in a specific input. We expect that in a market shock event, multiple inputs would be affected and the effects of these changes may compound or counteract each other. Therefore, the preceding analyses are not projections of the effects of a shock event or a change in our estimate of an input and should not be relied upon as earnings projections.

Critical Accounting Policies Not Tied to Fair Value

Consolidation—Variable Interest Entities

We enter into various types of transactions with special purpose entities ("SPEs"), which are trusts that are established for limited purposes. Generally, SPEs are formed in connection with securitization transactions. In a securitization transaction, we transfer loans on our balance sheet to an SPE, which then issues various forms of interests in those assets to investors. In a securitization transaction, we typically receive cash and/or beneficial interests in the SPE in exchange for the assets we transfer.

SPEs are generally considered variable interest entities ("VIEs"). A VIE is an entity having either a total equity investment that is insufficient to finance its activities without additional subordinated financial support or whose equity investors lack the ability to control the activities that most significantly impact the economic performance of the VIE. Variable interests are investments or other interests that will absorb portions of a VIE's expected losses or receive portions of the VIE's expected residual returns. Expected residual returns represent the expected positive variability in the fair value of a VIE's net assets.

When an SPE is a VIE, holders of variable interests in that entity must evaluate whether they are the VIE's primary beneficiary. The primary beneficiary of a VIE is the party that has both the power to direct the activities that most significantly impact the VIE and a variable interest that could potentially be significant to the VIE. The primary beneficiary of a VIE must include the assets and liabilities of the VIE on its consolidated balance sheet. Therefore, our evaluation of a securitization as a VIE and our status as the VIE's primary beneficiary can have a significant effect on our consolidated balance sheet.

We evaluate the securitization trust into which assets are transferred to determine whether the entity is a VIE. To determine whether a variable interest we hold could potentially be significant to the VIE, we consider both qualitative and quantitative factors regarding the nature, size and form of our involvement with the VIE. We assess whether we are the primary beneficiary of a VIE on an ongoing basis.

For our financial reporting purposes, the underlying assets owned by the securitization VIEs that we presently consolidate are shown under *Loans at fair value*, *Derivative assets*, *Derivative and credit risk transfer strip liabilities* and *Deposits securing credit risk transfer agreements* on our consolidated balance sheets:

- The VIEs that hold loans we have securitized are shown as their constituent assets and liabilities- *Loans at fair value*, and the securities issued to third parties by the consolidated VIE are shown as *Asset-backed financings at fair value* on our consolidated balance sheets. We include the interest earned on the loans held by the VIEs in *Interest income* and interest attributable to the asset-backed securities issued by the VIEs in *Interest expense* in our consolidated statements of operations. Changes in the fair value of loans held in the VIEs and the associated asset-backed financings are included in *Net (losses) gains on investments and financings* in our consolidated statements of operations.
- The VIEs that hold assets relating to our CRT arrangements are shown as their constituent assets and liabilities – the *Deposit securing credit risk transfer agreements*, *Derivative assets* and *Derivative and credit risk liabilities* which represent our Interest-only ("IO") ownership interest and Recourse Obligation, and *Interest-only security payable at fair value*. We include the income we receive from the IO ownership interests and changes in fair value of the *Derivative assets* and *Derivative and credit risk liabilities* and *Interest-only security payable at fair value* in *Net (losses) gains on investments and financings* in our consolidated statements of operations.

Income Taxes

We have elected to be taxed as a REIT and believe we comply with the provisions of the Internal Revenue Code applicable to REITs. Accordingly, we believe that we will not be subject to federal income tax on that portion of our REIT taxable income that is distributed to shareholders as long as we meet the requirements of certain asset, income and share ownership tests. If we fail to qualify as a REIT, and do not qualify for certain statutory relief provisions, we will be subject to income taxes and may be precluded from qualifying as a REIT for the four tax years following the year of loss of our REIT qualification.

Our TRS is subject to federal and state income taxes. We provide for income taxes using the asset and liability method. We recognize deferred tax assets and liabilities for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. We measure deferred tax assets and liabilities using enacted rates expected to apply to taxable income in the years in which we expect those temporary differences to be recovered or settled.

We recognize the effect on deferred taxes of a change in tax rates in income in the period in which the change occurs. We establish a valuation allowance if, in our judgment, realization of deferred tax assets is not more likely than not.

We recognize tax benefits relating to tax positions we take only if it is more likely than not that the position will be sustained upon examination by the appropriate taxing authority. We recognize a tax position that meets this standard as the largest amount that in our judgment exceeds 50 percent likelihood of being realized upon settlement. We will classify any penalties and interest as a component of income tax expense.

Accounting Developments

Refer to Note 3 – *Significant Accounting Policies – Accounting Standard Adopted in 2022* to our consolidated financial statements for a discussion of recent accounting developments and the effect of these developments on us.

Non-Cash Investment Income

A substantial portion of our net investment income is comprised of non-cash items, including fair value adjustments, recognition of the fair value of assets created and liabilities incurred in loan sale transactions and the capitalization and amortization of certain assets and liabilities. Because we have elected, or are required by GAAP, to record certain of our financial assets (comprised of MBS, loans acquired for sale at fair value, loans at fair value and ESS), our firm commitment to purchase CRT securities, our derivatives and CRT strips, our MSRs, and our asset-backed financings and interest-only security payable at fair value, a substantial portion of the income or loss we record with respect to such assets and liabilities results from non-cash changes in fair value.

The amounts of net non-cash investment (loss) income items included in net investment income are as follows:

	Year ended December 31, 2022	2021	2020
		(dollars in thousands)	
Net (losses) gains on investments and financings:			
Mortgage-backed securities	$ (576,758)	$ (74,354)	$ 87,852
Loans:			
Held in variable interest entities	(301,164)	(12,536)	(6,617)
Distressed	524	(206)	(87)
ESS	—	1,651	(22,729)
CRT arrangements	(152,576)	163,126	(161,854)
Firm commitment to purchase CRT securities	—	—	(121,067)
Interest-only security payable at fair value	(11,332)	164	14,952
Asset-backed financings at fair value	283,586	19,708	5,519
	(757,720)	97,553	(204,031)
Net gains on loans acquired for sale (1)	620,813	1,379,717	1,199,605
Net loan servicing fees–MSR valuation adjustments (2)	425,779	(344,435)	(934,437)
	$ 288,872	$ 1,132,835	$ 61,137
Net investment income	$ 303,771	$ 420,297	$ 469,351
Non-cash items as a percentage of net investment income	95%	270%	13%

(1) Amount represents MSRs received, liability for representations and warranties incurred in loan sales transactions and changes in fair value of loans, IRLCs and hedging derivatives held at year end.

(2) Includes fair value changes related to MSR derivative hedging instruments.

We receive or pay cash relating to:

- Our investments in MBS through monthly principal and interest payments from the issuer of such securities or from sales of the investment;
- Loan investments when the investments are paid down, paid off or sold, when payments of principal and interest occur on such loans or when the properties acquired in settlement of loans are sold;
- ESS investments through a portion of the monthly interest payments collected on the loans in the ESS reference pool or from sales of the investment;
- CRT arrangements through a portion of the interest payments collected on loans in the CRT arrangements' reference pools, interest payments from the investment of the deposits securing the arrangement in short-term investments and the release to us of the deposits securing the arrangements as principal on such loans is repaid;
- Hedging instruments when we receive or make margin deposits as the fair value of respective instruments change, when the instruments mature or when we effectively cancel the transactions through offsetting trades;
- Our liability for representations and warranties when we repurchase loans or settle loss claims from investors; and
- MSRs in the form of loan servicing fees and placement fees on the deposits we manage on behalf of the borrowers and investors in the loans we service.

Results of Operations

Overview

The U.S. Federal Reserve raised the federal funds rate during the year ended December 31, 2022 and is expected to further increase interest rates in the near term, as well as reduce the federal government's overall holdings of Treasury and mortgage-backed securities. Increasing interest rates are expected to reduce the size of the mortgage origination market from an estimated $2.2 trillion in 2022 to a current forecast range of $1.6 trillion to $1.9 trillion for 2023 according to leading economists. Lower projected mortgage transaction volumes are expected to increase competition in the mortgage production business year over year while also leading to reductions in prepayment speeds in our mortgage servicing portfolio and other mortgage-related assets from the elevated levels experienced in 2021. Increasing interest rates are also expected to increase the costs of certain borrowings, as well as provide increased interest income from placement fees on custodial deposits and loans held for sale.

At a macroeconomic level, increasing interest rates may also lead to a reduction in economic activity and slowing home price growth or depreciation, which could lead to increasing mortgage delinquencies or defaults and increased losses. If these effects are realized, they could negatively impact the performance of our credit-sensitive assets such as CRT or subordinate credit-linked notes However, many of the loans underlying our assets have favorable credit characteristics and low loan-to-value ratios which are likely to help offset the negative impacts of credit performance in an economic downturn.

Due to certain capital rules, Fannie Mae and Freddie Mac have higher capital requirements to guarantee loans delivered by loan aggregators and may charge higher fees for third party originated loans that we aggregate and deliver to the Agencies as compared to individual loans delivered by mortgage lenders directly to the Agencies' cash windows without the assistance of a loan aggregator. To the extent the Agencies increase the number of cash window purchases and sales for their own accounts, our business and results of operations could be materially and adversely affected. The competitive landscape for our correspondent business has also been impacted by the exit of several large entities, which may present an opportunity for growth of our share in that business.

The following is a summary of our key performance measures:

	Year ended December 31,		
	2022	**2021**	**2020**
	(dollar amounts in thousands, except per common share amounts)		
Net investment income	$ 303,771	$ 420,297	$ 469,351
Expenses	240,684	375,636	389,621
Pretax income	63,087	44,661	79,730
Provision for (benefit from) income taxes	136,374	(12,193)	27,357
Net (loss) income	(73,287)	56,854	52,373
Dividends on preferred shares	41,819	30,891	24,938
Net (loss) income attributable to common shareholders	$ (115,106)	$ 25,963	$ 27,435
Pretax (loss) income by segment:			
Credit sensitive strategies	$ (112,566)	$ 306,643	$ (317,143)
Interest rate sensitive strategies	207,802	(290,065)	105,697
Correspondent production	27,557	86,936	344,639
Corporate	(59,706)	(58,853)	(53,463)
	$ 63,087	$ 44,661	$ 79,730
Return on average common shareholder's equity	(7.2)%	1.3%	1.4%
(Loss) earnings per common share:			
Basic	$ (1.26)	$ 0.26	$ 0.27
Diluted	$ (1.26)	$ 0.26	$ 0.27
Dividends per common share	$ 1.81	$ 1.88	$ 1.52
At year end:			
Total assets	$ 13,921,564	$ 13,772,708	$ 11,492,011
Book value per common share	$ 15.78	$ 19.05	$ 20.30
Closing price per common share	$ 12.39	$ 17.33	$ 17.47

Our consolidated net income decreased by $130.1 million during the year ended December 31, 2022, reflecting the income tax effects of shifts in our net investment income from our non-taxed REIT subsidiary to our taxable REIT subsidiary; the decreases in CRT-related investment fair valuation, gains on loans held for sale and loan origination fees; partially offset by the improved fair value performance of our MSR investments during the year ended December 31, 2022, as compared to the same period in 2021.

The decrease in pretax results is summarized below:

- Our credit sensitive strategies segment recognized a $434.1 million decrease in net gains on our CRT arrangements as compared to 2021, due to the effect of credit spread widening due to increasing macroeconomic uncertainty during 2022 as compared to the continuing recovery from the market disruption caused by the COVID-19 pandemic during 2021.
- Our interest rate sensitive strategies segment was positively affected by a $945.6 million increase in net servicing fees caused by positive fair value changes in our investment in MSRs and hedging results and a $49.2 million decrease in net interest expense, reflecting increased earnings on placement fees and reduced interest shortfall on repayments relating to Agency securitizations, partially offset by a $502.4 million increase in losses on MBS, reflecting the effect of increasing interest rates.

- Our correspondent production segment recognized a $180.2 million decrease in gains on sales of the loans and origination fees, reflecting decreases in both production volume and gain on sale margins during the year ended December 31, 2022, resulting from the effect of increasing interest rates on loan demand.
- We recorded income tax provision of $136.4 million due to fair value gains on MSRs held in our TRS as interest rates increased substantially during the year ended December 31, 2022.

Our consolidated net income during the year ended December 31, 2021 increased by $4.5 million, reflecting the effect of the improved fair value performance of our CRT-related investments partially offset by decreases in our correspondent production and interest rate sensitive strategies results, as compared to 2020. The increase in pretax results is summarized below:

- During the year ended December 31, 2021, we recognized a $636.0 million increase in net gains on our CRT arrangements as compared to 2020, which reflected the severe impact of the market disruption caused by the COVID-19 pandemic on our investments in CRT arrangements during 2020 and the subsequent recovery in 2021.
- Our interest rate sensitive strategies segment was negatively affected by a decrease in net servicing fees of $189.7 million caused by negative fair value changes in our investment in MSRs and hedging results, a $162.2 million decrease in gains on MBS and a $50.7 million increase in net interest expense.
- Growth in production volume in our correspondent production segment was more than offset by reductions in our gain on sale margins as increased market competition compressed such margins, resulting in a $257.7 million decrease in our pretax income.
- We recorded income tax benefit of $12.2 million due to fair value losses on MSRs held in our TRS.

Net Investment Income

Our net investment income is summarized below:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Net loan servicing fees	$ 909,551	$ (36,022)	$ 153,696
Net (losses) gains on investments and financings	(658,787)	304,079	(170,885)
Net gains on loans acquired for sale	25,692	87,273	379,922
Net loan origination fees	52,085	170,672	147,272
Net interest expense	(26,626)	(109,498)	(48,635)
Other	1,856	3,793	7,981
	$ 303,771	$ 420,297	$ 469,351

Net Loan Servicing Fees

Our net loan servicing fees have two primary components: fees earned for servicing loans and the effects of MSR valuation changes, net of hedging results, as summarized below:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Loan servicing fees	$ 651,251	$ 595,346	$ 462,517
Effect of MSRs and hedging results	258,300	(631,368)	(308,821)
Net loan servicing fees	$ 909,551	$ (36,022)	$ 153,696

Following is a summary of our loan servicing fees:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Contractually-specified servicing fees	$ 625,210	$ 526,245	$ 406,060
Ancillary and other fees:			
Late charges	2,526	1,701	1,498
Other	23,515	67,400	54,959
	26,041	69,101	56,457
	$ 651,251	$ 595,346	$ 462,517
Average MSR servicing portfolio	$ 222,847,593	$ 196,996,623	$ 147,832,880
MSR recapture fees	$ 13,744	$ 50,859	$ 28,373
UPB of loans recaptured	$ 2,533,115	$ 9,389,260	$ 6,012,911

Loan servicing fees relate to our MSRs which are primarily related to servicing we provide for loans included in Agency securitizations. These fees are contractually established at an annualized percentage of the UPB of the loans serviced and we collect these fees from borrower payments. Other loan servicing fees are comprised primarily of borrower-contracted fees such as late charges, reconveyance fees and fees charged to correspondent lenders for loans repaid by the borrower shortly after purchase.

The change in contractually-specified fees during the year ended December 31, 2022, as compared to 2021, is due primarily to increased servicing fees resulting from the growth in our loan servicing portfolio. Likewise, the increase in contractually specified servicing fees during the year ended December 31, 2021 as compared to 2020 is due to growth in our loan servicing portfolio.

The changes in other loan servicing fees for the year ended December 31, 2022, as compared to 2021, is due to a decrease in the volume of fees charged to correspondent lenders for loans paid off shortly after purchase, reflecting the effect of increasing interest rates on refinancing activity. Likewise, the increase in such fees between 2020 and 2021 reflects the effect of then-decreasing interest rates on refinancing activity.

The decrease in MSR recapture fees reflects the effects of increasing interest rates during 2022 which affected refinance loan volume.

We have elected to carry our servicing assets at fair value. Changes in fair value have two components: changes due to realization of the contractual servicing fees and changes due to changes in inputs used to estimate the fair value of such items. We endeavor to moderate the effects of changes in fair value primarily by entering into derivatives transactions.

Changes in fair value of MSRs and hedging results are summarized below:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Change in fair value of MSRs			
Realization of cash flows	$ (370,292)	$ (298,130)	$ (232,830)
Changes in valuation inputs used in valuation model	819,727	(39,056)	(706,107)
	449,435	(337,186)	(938,937)
Hedging results	(204,879)	(345,041)	601,743
Total change in fair value of mortgage servicing rights and hedging results	244,556	(682,227)	(337,194)
Recapture income from PFSI	13,744	50,859	28,373
	$ 258,300	$ (631,368)	$ (308,821)
Average balance of mortgage servicing rights	$ 3,615,920	$ 2,506,678	$ 1,354,508

Changes in realization of cash flows are influenced by changes in the level of servicing assets and liabilities and changes in estimates of remaining cash flows to be realized. During the year ended December 31, 2022, as compared to 2021, realization of cash flows increased primarily due to the significant growth of our investment in MSRs as compared to the year ended December 31, 2021, partially offset by the effect of reduced prepayment speeds on the rate of realization of expected cash flows.

Changes in fair value due to changes in valuation inputs used in our valuation model during the year ended December 31, 2022, as compared to 2021, reflect the effects of expectations for slower future prepayments of the underlying loans as a result of interest rates increasing more significantly during the year ended December 31, 2022, as compared to 2021 and 2020.

Hedging results reflect valuation losses in hedges against increasing interest rates during the year ended December 31, 2022, during which interest rates rose very sharply, as compared to the same period in 2021 when hedge losses were attributable to a slight increase in long term interest rates and elevated hedge costs. The loss from hedging activities decreased during the year ended December 31, 2022, as compared to the same period in 2021, due to the same factors as well as decreased prepayment sensitivity of the hedged MSRs due to higher interest rate levels in 2022 as well as lower target hedge coverage for fluctuations in MSR value due to the growth in fair value and interest rate sensitivity of our MBS portfolio, which also serves to offset the fair value changes of our MSRs.

The decrease in loan recapture income from PFSI reflects the decrease in refinancing activity in our MSR portfolio during the year ended December 31, 2022, as compared to the same periods in 2021. We have an agreement with PFSI that requires that when PFSI refinances a loan for which we held the MSRs, we receive a recapture fee. The MSR recapture agreement is summarized in Note 4 – *Transactions with Related Parties* to the consolidated financial statements included in this Report.

Following is a summary of our loan servicing portfolio:

	December 31, 2022	December 31, 2021
	(in thousands)	
UPB of loans outstanding	$ 229,858,573	$ 215,927,495
Collection status (UPB) (1)		
Delinquency:		
30-89 days delinquent	$ 1,903,007	$ 1,148,542
90 or more days delinquent:		
Not in foreclosure	$ 880,841	$ 1,726,488
In foreclosure	$ 70,921	$ 36,658
Bankruptcy	$ 123,239	$ 130,582
Delinquent loans in COVID-19 pandemic-related forbearance:		
30-89 days	$ 176,346	$ 169,654
90 days or more	$ 464,694	$ 614,882
Custodial funds managed by the Company (2)	$ 1,783,157	$ 3,823,527

(1) Includes delinquent loans in COVID-19 pandemic-related forbearance plans that were requested by borrowers seeking payment relief in accordance with the Coronavirus Aid Relief, and Economic Security Act ("CARES Act").

(2) Custodial funds include borrower and investor custodial cash accounts relating to loans serviced under mortgage servicing agreements and are not included on the Company's consolidated balance sheets. The Company earns placement fees on certain of the custodial funds it manages on behalf of the loans' borrowers and investors, which are included in *Interest income* in the Company's consolidated statements of operations.

Net (Losses) Gains on Investments and Financings

Net (losses) gains on investments and financings are summarized below:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
From nonaffiliates:			
Mortgage-backed securities	$ (576,758)	$ (74,354)	$ 87,852
Loans at fair value:			
Held in consolidated variable interest entities	(301,164)	(12,536)	(6,617)
Distressed	686	611	(837)
CRT arrangements	(65,137)	368,999	(145,938)
Firm commitment to purchase CRT securities	—	—	(121,067)
Asset-backed financings at fair value	283,586	19,708	5,519
Hedging derivatives	—	—	32,932
	(658,787)	302,428	(148,156)
From PFSI–Excess servicing spread	—	1,651	(22,729)
	$ (658,787)	$ 304,079	$ (170,885)

The decrease in net gains on investments for the year ended December 31, 2022, as compared to the year ended December 31, 2021, was caused primarily by increased losses from our investments in MBS and CRT arrangements as interest rates increased and credit spreads widened.

The increase in net gain on investments for the year ended December 31, 2021, as compared to 2020, was caused primarily by increased gains from our CRT arrangements. The increase in gains from CRT arrangements reflects the recovery in fair value from the dislocation in the credit markets experienced during the year ended December 31, 2020. This increase was partially offset by the effects of rising interest rates on the fair value of our investments in MBS.

Mortgage-Backed Securities

During 2022, we recognized net valuation losses on MBS of $576.8 million, as compared to net valuation losses of $74.4 million during 2021. The increase in losses we recognized during the year ended December 31, 2021 reflect a larger portfolio of assets and greater interest rate increases and spread widening than in 2021. The gains recognized during the year ended December 31, 2020 reflect the significant decrease in interest rates that was experienced during that year.

Loans at fair value – Held in VIEs and Asset-Backed Financings at Fair Value

Loans at fair value held in VIEs and Asset-backed financings at fair value incurred net losses of $17.6 million during the year ended December 31, 2022, as compared to net gains of $7.2 million during the year ended December 31, 2021. The net losses during the year ended December 31, 2022 reflect the effects of increasing interest rates and widening credit spreads during that year.

The net gains during the year ended December 31, 2021 reflect the gains on the asset-backed financing exceeding the losses on the underlying assets as the result of tightening credit spreads on our net investments secured by jumbo loans and investment properties.

The losses during the year ended December 31, 2020 are attributable to the effect of uncertainties surrounding borrower credit performance experienced in the mortgage market as the result of the COVID-19 pandemic. Unlike our investments in MBS, which carry Agency guarantees of security payment performance, the loans held in a VIE are the sole source of repayment of the securities. Therefore, uncertainties about borrower performance are more directly reflected in the fair value of these loans and more than offset the positive effect of decreasing interest rates for the year ended December 31, 2021.

CRT Arrangements

The activity in and balances relating to our CRT arrangements are summarized below:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
UPB of loans sold			$ 18,277,263
Investments:			
Deposits securing CRT arrangements			$ 1,700,000
Change in expected face amount of firm commitment to purchase CRT securities			(1,502,203)
			$ 197,797
Net investment income:			
Net (losses) gains on investments and financings:			
CRT Derivatives and strips:			
CRT derivatives			
Realized	$ 38,382	$ 93,837	$ (53,965)
Valuation changes	(42,220)	(12,829)	(82,633)
	(3,838)	81,008	(136,598)
CRT strips			
Realized	60,389	111,872	54,929
Valuation changes	(110,356)	175,955	(79,221)
	(49,967)	287,827	(24,292)
Interest-only security payable at fair value	(11,332)	164	14,952
	(65,137)	368,999	(145,938)
Firm commitments to purchase CRT securities	—	—	(121,067)
	(65,137)	368,999	(267,005)
Net gains on loans acquired for sale — Fair value of firm commitment to purchase CRT securities recognized upon sale of loans	—	—	(38,161)
Interest income — Deposits securing CRT arrangements	21,324	559	7,012
	$ (43,813)	$ 369,558	$ (298,154)
Net (recoveries received) payments made to settle (recoveries) losses on CRT arrangements	$ (19,016)	$ (62,387)	$ 115,475

	December 31, 2022	December 31, 2021
	(in thousands)	
Carrying value of CRT arrangements:		
Derivative and credit risk transfer strip assets (liabilities), net		
CRT derivatives	$ (22,098)	$ 18,964
CRT strips	(137,193)	(26,837)
	$ (159,291)	$ (7,873)
Deposits securing CRT arrangements	$ 1,325,294	$ 1,704,911
Interest-only security payable at fair value	$ 21,925	$ 10,593
CRT arrangement assets pledged to secure borrowings:		
Derivative assets	$ 1,262	$ 19,627
Deposits securing CRT arrangements (1)	$ 1,325,294	$ 1,704,911
UPB of loans underlying CRT arrangements	$ 25,315,524	$ 30,808,907
Collection status (UPB):		
Delinquency (2)		
Current	$ 24,673,719	$ 29,581,803
30-89 days delinquent	$ 409,049	$ 349,291
90-180 days delinquent	$ 112,286	$ 120,775
180 or more days delinquent	$ 93,717	$ 748,576
Foreclosure	$ 26,753	$ 8,462
Bankruptcy	$ 54,395	$ 64,694
Delinquent loans in COVID-19 pandemic-related forbearance plans:		
30-89 days delinquent	$ 35,388	$ 44,015
90-180 days delinquent	$ 39,033	$ 57,815
180 or more days delinquent	$ 35,588	$ 174,041

(1) For purposes of this discussion, includes *Deposits securing credit risk transfer strip liabilities* securing $160.6 million and $27.5 million in *CRT strip* and *CRT derivative liabilities* at December 31, 2022 and December 31, 2021, respectively.

(2) Includes delinquent loans in COVID-19 pandemic-related forbearance plans that were requested by borrowers seeking payment relief in accordance with the CARES Act.

The performance of our investments in CRT arrangements during the year ended December 31, 2022 reflects credit spread widening (an increase in the interest rate demanded by investors for instruments over those that are considered “risk free”) for CRT securities in the credit markets. This contrasts with CRT investments’ gains during the year ended December 31, 2021 which reflects a recovery of the credit markets from the dislocation experienced during the first quarter of 2020 as a result of the onset of the COVID-19 pandemic and continuing improvement in the performance of the loans underlying this investment.

ESS Purchased from PFSI

We recognized fair value gains relating to our investment in ESS totaling $1.7 million for the year ended December 31, 2021, as compared to fair value losses of $22.7 million during 2020. The gains were driven by the positive influence on expected future cash flows of the generally rising interest rates during the portion of 2021 that the ESS was outstanding. The valuation losses during 2020, resulted from increased prepayment experience and expectations for the loans underlying the ESS and the effect of uncertainties surrounding future cash flows on the discount rate used to develop the assets’ fair value. The remaining balance of the ESS was sold to PLS during the quarter ended March 31, 2021.

Net Gains on Loans Acquired for Sale

Our net gains on loans acquired for sale are summarized below:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
From non-affiliates:			
Cash loss:			
Loans	$ (1,196,384)	$ (1,487,649)	$ (326,214)
Hedging activities	596,295	188,733	(504,506)
	(600,089)	(1,298,916)	(830,720)
Non-cash gain:			
Receipt of MSRs in loan sale transactions	670,343	1,484,629	1,158,475
Provision for losses relating to representations and warranties provided in loan sales:			
Pursuant to loan sales	(4,442)	(25,029)	(19,316)
Reduction in liability due to change in estimate	4,227	5,812	4,457
	(215)	(19,217)	(14,859)
Recognition of fair value of commitment to purchase credit risk transfer securities relating to loans sold	—	—	(38,161)
Change in fair value of financial instruments held at year end:			
Interest rate lock commitments	(2,928)	(69,935)	61,232
Loans	(4,057)	31,072	(12,279)
Hedging derivatives	(42,330)	(46,832)	45,197
	(49,315)	(85,695)	94,150
	620,813	1,379,717	1,199,605
Total from nonaffiliates	20,724	80,801	368,885
From PFSI—cash	4,968	6,472	11,037
	$ 25,692	$ 87,273	$ 379,922
Interest rate lock commitments issued on loans acquired for sale to nonaffiliates	$ 44,174,447	$ 108,458,880	$ 117,727,579
Acquisition of loans for sale (UPB):			
To nonaffiliates	$ 37,090,031	$ 110,003,574	$ 106,898,339
To PFSI	49,533,119	64,641,218	62,413,089
	$ 86,623,150	$ 174,644,792	$ 169,311,428

The changes in gain on loans acquired for sale during the year ended December 31, 2022, as compared to the same period in 2021, reflect the effect of rising interest rates on demand for mortgage loans and gain on sale margins. The changes in *Net gains on loans acquired for sale* during the year ended December 31, 2021, as compared to 2020, reflect the tightening of gain on sale margins, as well as decreasing interest rate lock commitments.

Non-cash elements of gains on sale of loans

Interest Rate Lock Commitments

Our net gains on sale of loans includes our estimates of gains or losses we expect to realize upon the sale of mortgage loans we have committed to purchase but have not yet purchased or sold. Therefore, we recognize a substantial portion of our *Net gains on sale of loans acquired for sale* before we purchase the loans. These gains are reflected on our balance sheet as IRLC derivative assets and liabilities. We adjust the fair value of our IRLCs as the loan acquisition process progresses until we complete the acquisition or the commitment is canceled. Such adjustments are included in our *Net gains on sale of loans acquired for sale*. The fair value of our IRLCs become part of the carrying value of our loans when we complete the purchase of the loans. The methods and key inputs we use to measure the fair value of IRLCs are summarized in Note 7 – *Fair value – Valuation Techniques and Inputs* to the consolidated financial statements included in this Report.

The MSRs and liability for representations and warranties we recognize represent our estimate of the fair value of future benefits and costs we will realize for years in the future. These estimates change as circumstances change, and changes in these estimates are recognized in our results of operations in subsequent periods. Subsequent changes in the fair value of our MSRs significantly affect our results of operations.

Mortgage Servicing Rights

Our methods to measure and update the measurements of our MSRs as well as the effect of changes in valuation inputs on MSR fair value are detailed in Note 7 – *Fair value – Valuation Techniques and Inputs* to the consolidated financial statements included in this Report.

Firm Commitment to Purchase CRT Securities

During the time we were selling loans into CRT arrangements, we recognized the fair value of our commitment to purchase CRT securities when we sold loans subject to CRT arrangements. This fair value represents the difference between the expected fair value of the CRT securities we committed to purchase and their contractual purchase price.

Liability for Losses Under Representations and Warranties

We recognize a liability for losses we expect to incur relating to the representations and warranties we provide to purchasers in our loan sales transactions. The representations and warranties require adherence to purchaser and insurer origination and underwriting guidelines, including but not limited to the validity of the lien securing the loan, property eligibility, borrower credit, income and asset requirements, and compliance with applicable federal, state and local law.

In the event of a breach of our representations and warranties, we may be required to either repurchase the loans with the identified defects or indemnify the investor or insurer against credit losses attributable to the loans with indemnified defects. In such cases, we bear any subsequent credit loss on the loans. Our credit loss may be reduced by any recourse we have to correspondent sellers that, in turn, had sold such loans to us and breached similar or other representations and warranties. In such event, we have the right to seek a recovery of those repurchase losses from that correspondent seller.

We recorded provisions for losses relating to representations and warranties relating to current loan sales of $4.4 million, $25.0 million and $19.3 million as part of our loan sales in each of the years ended December 31, 2022, 2021 and 2020, respectively. The decrease in the provision relating to current loan sales during the year ended December 31, 2022, relating to current loan sales reflects the decrease of our loan sales volume and reduced default and loss-given default assumptions during 2022 as compared to 2021. The increase in the provision during the year ended December 3, 2021, relating to current loan sales reflects the increase of our loan sales volume as well as loan sales no longer being subject to credit risk transfer arrangements for which our representation and warranty loss estimates were less than for other loan sales.

Following is a summary of the indemnification and repurchase activity and loans subject to representations and warranties:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Indemnification activity (UPB):			
Loans indemnified at beginning of year	$ 2,782	$ 4,583	$ 5,697
New indemnifications	6,009	345	450
Less: Indemnified loans repaid or refinanced	683	2,146	1,564
Loans indemnified at end of year	$ 8,108	$ 2,782	$ 4,583
Indemnified loans indemnified by correspondent lenders at end of year	$ 1,312	$ 1,112	$ 1,497
UPB of loans with deposits received from correspondent sellers collateralizing prospective indemnification losses at end of year	$ 2,670	$ 213	$ 213
Repurchase activity (UPB):			
Loans repurchased	$ 92,293	$ 86,954	$ 72,535
Less:			
Loans repurchased by correspondent sellers	77,813	52,787	31,306
Loans resold or repaid by borrowers	26,584	33,950	24,837
Net loans (resolved) repurchased with losses chargeable to liability to representations and warranties	$ (12,104)	$ 217	$ 16,392
Net losses charged to liability for representations and warranties	$ 993	$ 861	$ 580
At end of year:			
Loans subject to representations and warranties	$ 228,339,312	$ 213,944,023	$ 163,592,788
Liability for representations and warranties	$ 39,471	$ 40,249	$ 21,893

The losses on representations and warranties we have recorded to date have been moderated by our ability to recover most of the losses inherent in the repurchased loans from the correspondent sellers. As the outstanding balance of loans we purchase and sell subject to representations and warranties increases, as the loans sold season, as our investors' and guarantors' loss mitigation strategies change and as our correspondent sellers' ability and willingness to repurchase loans change, we expect that the level of repurchase activity and associated losses may increase.

The method we use to estimate the liability for representations and warranties is a function of our estimates of future defaults, loan repurchase rates, severity of loss in the event of default and the probability of reimbursement by the correspondent loan seller. We establish a liability at the time loans are sold and review our liability estimate on a periodic basis.

The amount of the liability for representations and warranties is difficult to estimate and requires considerable judgment. The level of loan repurchase losses is dependent on economic factors, investor loss mitigation strategies, our ability to recover any losses inherent in the repurchased loan from the correspondent seller and other external conditions that change over the lives of the underlying loans. We may be required to incur losses related to such representations and warranties for several periods after the loans are sold or liquidated.

We record adjustments to our liability for losses on representations and warranties as economic fundamentals change, as investor and Agency evaluations of their loss mitigation strategies (including claims under representations and warranties) change and as economic conditions affect our correspondent sellers' ability or willingness to fulfill their recourse obligations to us. Such adjustments may be material to our financial position and results of operations in future periods.

Adjustments to our liability for representations and warranties are included as a component of our *Net gains on loans acquired for sale at fair value*. We recorded reductions in liabilities for representations and warranties for previously sold loans totaling $4.2 million, $5.8 million and $4.5 million during each of the three years ended December 31, 2022, 2021 and 2020, respectively, due to the effects of certain loans reaching specified performance histories identified by the Agencies as sufficient to limit repurchase claims relating to such loans.

Loan Origination Fees

Loan origination fees represent fees we charge correspondent sellers relating to our purchase of loans from those sellers. The decrease in fees during 2022, as compared to 2021 and 2020, reflects a decrease in our purchases of loans with delivery fees.

Net Interest Expense

Net interest expense is summarized below:

	Year ended December 31, 2022			Year ended December 31, 2021			Year ended December 31, 2020		
	Interest income/ expense	Average balance	Interest yield/ cost %	Interest income/ expense	Average balance	Interest yield/ cost %	Interest income/ expense	Average balance	Interest yield/ cost %
	(dollars in thousands)								
Assets:									
Cash and short-term investments	$ 6,912	$ 332,251	2.05%	$ 938	$ 243,548	0.38%	$ 3,804	$ 650,630	0.58%
Mortgage-backed securities	133,640	3,559,869	3.70%	36,180	2,210,940	1.61%	59,461	2,921,879	2.00%
Loans acquired for sale at fair value	103,300	1,938,470	5.26%	125,438	4,135,140	2.99%	103,221	3,469,392	2.93%
Loans at fair value:									
Held by variable interest entities	59,263	1,612,103	3.63%	17,014	474,808	3.53%	10,609	214,596	4.86%
Distressed	219	3,879	5.57%	369	6,625	5.49%	493	9,032	5.37%
	59,482	1,615,982	3.63%	17,383	481,433	3.56%	11,102	223,628	4.88%
Excess servicing spread from PFSI	—	—	—	1,280	21,563	5.85%	8,418	153,768	5.38%
Deposits securing CRT arrangements	21,324	1,468,219	1.43%	559	2,307,155	0.02%	7,012	1,772,762	0.39%
	324,658	8,914,791	3.59%	181,778	9,399,779	1.91%	193,018	9,192,059	2.07%
Placement fees relating to custodial funds	57,961			13,366			28,804		
Other	1,175			95			313		
	$383,794	$ 8,914,791	4.25%	$ 195,239	$9,399,779	2.05%	$222,135	$9,192,059	2.38%
Liabilities:									
Assets sold under agreements to repurchase	$165,436	$ 5,625,345	2.90%	$ 97,078	$6,161,755	1.55%	$102,131	$5,508,147	1.82%
Mortgage loan participation purchase and sale agreements	1,023	30,024	3.36%	606	33,827	1.77%	902	44,432	2.00%
Notes payable secured by credit risk transfer and mortgage servicing assets	137,021	2,646,597	5.11%	86,753	2,635,601	3.25%	59,261	1,771,370	3.29%
Exchangeable senior notes	33,368	541,233	6.08%	36,747	445,064	8.14%	18,847	269,247	6.89%
Asset-backed financings at fair value	53,570	1,512,590	3.49%	15,076	447,247	3.32%	10,971	203,795	5.30%
Assets sold to PFSI under agreement to repurchase	—	—	—	387	13,020	2.93%	3,325	93,264	3.56%
	390,418	10,355,789	3.72%	236,647	9,736,514	2.40%	195,437	7,890,255	2.44%
Interest shortfall on repayments of loans serviced for Agency securitizations	15,806			64,519			71,516		
Interest on loan impound deposits	4,196			3,571			3,817		
	410,420	$10,355,789	3.91%	304,737	$9,736,514	3.09%	270,770	$7,890,255	3.38%
Net interest expense	$ (26,626)			$(109,498)			$ (48,635)		
Net interest margin			-0.29%			-1.15%			-0.52%
Net interest spread			0.34%			-1.04%			-1.00%

The effects of changes in the yields and costs and composition of our investments on our interest expense are summarized below:

	Year ended December 31, 2022 vs. Year ended December 31, 2021			Year ended December 31, 2021 vs. Year ended December 31, 2020		
	Increase (decrease) due to changes in			Increase (decrease) due to changes in		
	Rate	Volume	Total	Rate	Volume	Total
	(in thousands)					
Assets:						
Cash and short-term investments	$ 5,517	$ 457	$ 5,974	$ (1,008)	$ (1,858)	$ (2,866)
Mortgage-backed securities	66,233	31,227	97,460	(10,318)	(12,963)	(23,281)
Loans acquired for sale at fair value	65,295	(87,433)	(22,138)	2,321	19,896	22,217
Loans at fair value:						
Held by variable interest entities	452	41,797	42,249	(3,540)	9,945	6,405
Distressed	5	(155)	(150)	11	(135)	(124)
	457	41,642	42,099	(3,529)	9,810	6,281
Excess servicing spread from PFSI	—	(1,280)	(1,280)	673	(7,811)	(7,138)
Deposits securing CRT arrangements	21,042	(277)	20,765	(8,075)	1,622	(6,453)
	158,544	(15,664)	142,880	(19,936)	8,696	(11,240)
Placement fees relating to custodial funds	—	44,595	44,595	—	(15,438)	(15,438)
Other	—	1,080	1,080	—	(218)	(218)
	$ 158,544	$ 30,011	$ 188,555	$ (19,936)	$ (6,960)	$ (26,896)
Liabilities:						
Assets sold under agreements to repurchase	$ 77,478	$ (9,120)	$ 68,358	$ (16,219)	$ 11,166	$ (5,053)
Mortgage loan participation purchase and sale agreement	492	(75)	417	(96)	(200)	(296)
Notes payable secured by credit risk transfer and mortgage servicing assets	49,905	363	50,268	(808)	28,300	27,492
Exchangeable senior notes	(10,393)	7,014	(3,379)	3,914	13,986	17,900
Asset-backed financings at fair value	802	37,692	38,494	(5,234)	9,339	4,105
Assets sold to PFSI under agreement to repurchase	—	(387)	(387)	(470)	(2,468)	(2,938)
	118,284	35,487	153,771	(18,913)	60,123	41,210
Interest shortfall on repayments of loans serviced for Agency securitizations	—	(48,713)	(48,713)	—	(6,997)	(6,997)
Interest on loan impound deposits	—	625	625	—	(246)	(246)
	118,284	(12,601)	105,683	(18,913)	52,880	33,967
Increase in net interest expense	$ 40,260	$ 42,612	$ 82,872	$ (1,023)	$ (59,840)	$ (60,863)

The decrease in net interest expense during the year ended December 31, 2022, as compared to 2021, is due to:

- An increase in the yields we earn on our investments in MBS and loans acquired for sale arising from our acquisition of higher coupon Agency pass through securities, subordinate MBS and loans acquired for sale.
- An increase in placement fee income we receive relating to custodial funds we mange on behalf of borrowers and investors in our MSR portfolio.
- A decrease in the interest shortfall on repayments of loans serviced for the Agency securitizations, reflecting decreased prepayment activity in our MSR portfolio as a result of increasing interest rates reducing the incentive of borrowers to refinance their loans.

The increase in net interest expense during the year ended December 31, 2021, as compared to 2020, is due to:

- An increase in long-term debt issued to finance our investments in CRT Agreements and MSRs as well as the issuance of unsecured debt. These forms of debt bear higher interest costs as compared to the short-term debt they replace and do not finance interest-earning assets. Revenues relating to MSRs and CRT arrangements are reflected in *Net loan servicing fees* and *Net (losses) gains on investments and financings*.
- A decrease in earnings from placement fees relating to custodial funds managed for borrowers, and investors, and deposits securing CRT arrangements which reflects the decrease in interest rates we earn on these assets.

Expenses

Our expenses are summarized below:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Earned by PennyMac Financial Services, Inc.:			
Loan servicing fees	$ 81,915	$ 80,658	$ 67,181
Loan fulfillment fees	67,991	178,927	222,200
Management fees	31,065	37,801	34,538
Loan origination	12,036	28,792	26,437
Professional services	9,569	11,148	6,405
Safekeeping	8,201	9,087	7,090
Compensation	5,941	4,000	3,890
Loan collection and liquidation	5,396	11,279	10,363
Other	18,570	13,944	11,517
	$ 240,684	$ 375,636	$ 389,621

Expenses decreased $135.0 million, or 36%, during the year ended December 31, 2022, as compared to 2021, and $14.0 million, or 4%, during the year ended December 31, 2021, as compared to 2020, primarily due to reduced fees relating to fulfillment activities performed by PFSI on our behalf.

Loan Servicing Fees

Loan servicing fees payable to PLS are summarized below:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Loan servicing fees:			
Loans acquired for sale at fair value	$ 1,018	$ 2,363	$ 2,067
Loans at fair value	529	505	807
MSRs	80,368	77,790	64,307
	$ 81,915	$ 80,658	$ 67,181
Average investment in:			
Loans acquired for sale at fair value	$ 1,938,470	$ 4,135,140	$ 3,469,392
Loans at fair value	$ 1,615,982	$ 481,433	$ 223,628
Average MSR portfolio UPB	$ 222,847,593	$ 196,996,623	$ 147,832,880

Loan servicing fees increased by $1.3 million during the year ended December 31, 2022, as compared to the same period in 2021 and $13.5 million during the year ended December 31, 2021, as compared to 2020. We incur loan servicing fees primarily in support of our MSR portfolio. The increase in loan servicing fees year over year was due to the growth in our portfolio of MSRs.

Loan Fulfillment Fees

Loan fulfillment fees represent fees we pay to PLS for the services it performs on our behalf in connection with our acquisition, packaging and sale of loans. The decrease in loan fulfillment fees of $110.9 million during 2022, as compared to 2021, and $43.3 million during 2021, as compared to 2020, was due to a decrease in loan commitment volume. Our loan fulfillment fee structure is described in Note 4 – *Transactions with Related Parties* to the consolidated financial statements included in this Report.

Management Fees

Management fees payable to PCM are summarized below:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Base	$ 31,065	$ 34,794	$ 34,538
Performance incentive	—	3,007	—
	$ 31,065	$ 37,801	$ 34,538
Average shareholders' equity amounts used to calculate base management fee expense	$ 2,079,851	$ 2,348,395	$ 2,330,154

Management fees decreased by $6.7 million during the year ended December 31, 2022, as compared to 2021. This decrease reflects the nonrecurrence of a performance incentive fee during the year ended December 31, 2022, along with the effect of the decrease in our average shareholders’ equity on our base management fee during the year ended December 31, 2022, as compared to the year ended December 31, 2021.

Management fees increased by $3.3 million during the year ended December 31, 2021, as compared to 2020, due to the recognition of a performance incentive resulting from our increased profitability during certain of the rolling twelve-month measurement periods ended December 31, 2021, on which the performance incentive fee was based, as compared to our profitability for the year ended December 31, 2020.

Loan origination

Loan origination expenses decreased $16.8 million, or 58%, during 2022, as compared to 2021, primarily reflecting a decrease in the volume of loans produced through our correspondent production activities.

Loan origination expenses increased $2.4 million, or 9%, during 2021, as compared to 2020, reflecting the increases in our loan originations produced through our correspondent production activities.

Compensation

Compensation expense increased $1.9 million during the year ended December 31, 2022, as compared to 2021, and $110,000 during the year ended December 31, 2021, as compared to 2020, respectively, primarily due to increased expectations in achieving performance targets included in certain performance-based restricted share awards.

Loan collection and liquidation

Loan collection and liquidation expenses decreased by $5.9 million during the year ended December 31, 2022 due to the reduction in our portfolio of nonperforming mortgage loans and the borrower assistance expenses we incurred relating to loans in our CRT reference pools.

Loan collection and liquidation expenses increased by $916,000 during 2021 compared to the year ended 2020, due to continuing collection and liquidation efforts relating to our portfolio of nonperforming mortgage loans and loans included in our CRT reference pools. We incurred this expense to assist certain borrowers in mitigating loan delinquencies they incurred as a result of dislocations arising from the COVID-19 pandemic as an alternative to incurring losses in the CRT arrangements.

Other Expenses

Other expenses are summarized below:

	Year ended December 31,		
	2022	**2021**	**2020**
		(in thousands)	
Common overhead allocation from PFSI	$ 8,588	$ 4,906	$ 5,172
Technology	2,058	1,787	1,440
Bank service charges	2,262	1,731	1,924
Insurance	1,622	1,671	1,351
Other	4,040	3,849	1,630
	$ 18,570	$ 13,944	$ 11,517

Income Taxes

We have elected to treat PMC as a taxable REIT subsidiary (“TRS”). Income from a TRS is only included as a component of REIT taxable income to the extent that the TRS makes dividend distributions of income to us. A TRS is subject to corporate federal and state income tax. Accordingly, a provision for income taxes for PMC is included in the accompanying consolidated statements of income.

Our effective tax rates were 216.2% for the year ended December 31, 2022 and (27.3)% for the year ended December 31, 2021. Our TRS recognized a tax expense of $141.9 million on pretax income of $712.9 million while our consolidated pretax income was $63.1 million for the year ended December 31, 2022. For 2021, the TRS recognized a tax benefit of $12.2 million on pretax loss of $175.3 million while our consolidated pretax income was $44.7 million. The relative values between the tax benefit or expense at the TRS and our consolidated pretax income drive the fluctuation in the effective tax rate. We record a tax provision only at the TRS. As a result, when TRS pre-tax income is substantially greater than the consolidated pre-tax income, the tax expense provided at the TRS will be disproportionate to the consolidated income. This correlation resulted in an effective tax rate at the consolidated level of 216.2% for the year ended December 31, 2022. The primary difference between our effective tax rate and the statutory tax rate is due to nontaxable REIT income resulting from the dividends paid deduction.

The Company assesses the available positive and negative evidence to estimate whether sufficient future taxable income will be generated to permit use of the existing deferred tax assets. On the basis of this evaluation, as of December 31, 2022, the valuation allowance was decreased to zero from the $34.1 million valuation allowance recorded at December 31, 2021 as the result of GAAP income at the TRS for the year ended December 31, 2022. The amount of deferred tax assets considered realizable could be adjusted in future periods based on future income.

The Inflation Reduction Act was signed into law on August 16, 2022 (the “Act"). Effective for tax years beginning after December 31, 2022, the Act imposes a 15% alternative minimum tax ("AMT") on the adjusted financial statement income ("AFSI") of “Applicable Corporations”. The term "Applicable Corporations" does not include REITs but does include TRSs whose three-year average AFSI exceeds $1 billion. Based on the current legislation and the definition of AFSI, we do not expect our TRS to be subject to this AMT in the foreseeable future.

In general, cash dividends declared by the Company will be considered ordinary income to shareholders for income tax purposes. Some portion of the dividends may be characterized as capital gain distributions or a return of capital. For tax years beginning after December 31, 2017, the 2017 Tax Cuts and Jobs Act (the “Tax Act”) (subject to certain limitations) provides a 20% deduction from taxable income for ordinary REIT dividends.

Below is a reconciliation of GAAP year to date net income to taxable income (loss) and the allocation of taxable income (loss) between the TRS and the REIT:

			Taxable income (loss)		
Year ended December 31, 2022	**GAAP net income**	**GAAP/tax differences**	**Total taxable income (loss)**	**Taxable subsidiaries**	**REIT**
			(in thousands)		
Net investment income					
Net loan servicing fees/ESS transactions	$ 909,551	$ 65,857	$ 975,408	$ 975,408	$ —
Net (losses) gains on investments and financings	(658,787)	715,712	56,925	(14,766)	71,691
Net gains on loans acquired for sale	25,692	(671,121)	(645,429)	(645,429)	—
Loan origination fees	52,085	—	52,085	52,085	—
Net interest (expense) income	(26,626)	(4,266)	(30,893)	(161,277)	130,384
Results of real estate acquired in settlement of loans	496	(116)	380	380	—
Other	1,360	—	1,361	1,361	—
Net investment income	303,771	106,066	409,837	207,762	202,075
Expenses	240,684	(3,393)	237,290	213,824	23,466
REIT dividend deduction	—	178,615	178,615	—	178,615
Total expenses and dividend deduction	240,684	175,222	415,905	213,824	202,081
Income (loss) before provision for (benefit from) income taxes	63,087	(69,156)	(6,068)	(6,062)	(6)
Provision for (benefit from) income taxes	136,374	(136,380)	(6)	—	(6)
Net (loss) income	$ (73,287)	$ 67,224	$ (6,062)	$ (6,062)	$ —

Balance Sheet Analysis

Following is a summary of key balance sheet items as of the dates presented:

	December 31, 2022	December 31, 2021
	(in thousands)	
Assets		
Cash	$ 111,866	$ 58,983
Investments:		
Short-term	252,271	167,999
Mortgage-backed securities at fair value	4,462,601	2,666,768
Loans acquired for sale at fair value	1,821,933	4,171,025
Loans at fair value	1,513,399	1,568,726
Derivative assets	84,940	34,238
Deposits securing credit risk transfer arrangements	1,325,294	1,704,911
MSRs	4,012,737	2,892,855
	13,473,175	13,206,522
Other	336,523	507,203
Total assets	$ 13,921,564	$ 13,772,708
Liabilities		
Debt:		
Short-term	$ 6,616,528	$ 6,721,878
Long-term	4,787,162	4,455,012
	11,403,690	11,176,890
Other	555,059	228,300
Total liabilities	11,958,749	11,405,190
Shareholders' equity	1,962,815	2,367,518
Total liabilities and shareholders' equity	$ 13,921,564	$ 13,772,708

Total assets increased by approximately $148.9 million, or 1%, from December 31, 2021 to December 31, 2022, primarily due to an increase in MBS of $1.8 billion and MSRs of $1.1 billion, partially offset by a $2.3 billion decrease in *Loans acquired for sale at fair value* and a $379.6 million decrease in *Deposits securing credit risk transfer arrangements*. The increase in our MBS is primarily due to our increased investment in Agency pass-through securities. The growth in investment in MSRs reflects the growth in our servicing portfolio from our correspondent lending activities.

Asset Acquisitions

Our asset acquisitions are summarized below.

Correspondent Production

Following is a summary of our correspondent production acquisitions at fair value:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Correspondent loan purchases:			
Government-sponsored entity ("GSE") eligible (1)	$ 41,575,252	$ 113,667,618	$ 106,472,654
Held for sale to PLS – Government insured or guaranteed	46,562,853	67,702,945	63,574,547
Jumbo loans	5,029	—	—
Advances to home equity lines of credit	132	—	2,569
	$ 88,143,266	$ 181,370,563	$ 170,049,770

(1) GSE eligibility refers to the eligibility of loans for sale to Fannie Mae or Freddie Mac. The Company sells or finances a portion of its GSE eligible loan production to other investors, including PLS.

During 2022, we purchased for sale $88.1 billion in fair value of correspondent production loans as compared to $181.4 billion during 2021 and $170.0 billion during 2020. The decrease in loan production during the year ended December 31, 2022 reflects the effect of decreased loan demand as a result of the increasing interest rate environment during the year ended December 31, 2022, as compared to the favorable interest rate environment during the same periods in 2021 and 2020.

Other Investment Activities

Following is a summary of our acquisitions of mortgage-related investments held in our credit sensitive strategies and interest rate sensitive strategies segments:

	Year ended December 31, 2022	2021	2020
		(in thousands)	
Credit sensitive assets:			
Credit risk transfer strips			$ (178,501)
Deposits and commitments to fund deposits relating to CRT arrangements			1,700,000
Change in firm commitment to purchase CRT securities			
Fair value			(159,228)
Expected face amount			(1,502,203)
			(1,661,431)
Loans secured by investment properties, net of associated asset-backed financing	$ 23,485	$ 71,071	—
	23,485	71,071	(139,932)
Interest rate sensitive assets:			
Mortgage-backed securities (net of sales)	2,638,267	932,270	352,307
Excess servicing spread received pursuant to a recapture agreement	—	557	2,093
Mortgage servicing rights received in loan sales	670,343	1,484,629	1,158,475
	3,308,610	2,417,456	1,512,875
	$ 3,332,095	$ 2,488,527	$ 1,372,943

Our acquisitions during the three years ended December 31, 2022 were financed through the use of a combination of proceeds from borrowings and liquidations of existing investments. We continue to identify additional means of increasing our investment portfolio through cash flow from our business activities, existing investments, borrowings, and transactions that minimize current cash outlays. However, we expect that, over time, our ability to continue our investment portfolio growth will depend on our ability to raise additional equity capital.

Investment Portfolio Composition

Mortgage-Backed Securities

Following is a summary of our MBS holdings:

	December 31, 2022				December 31, 2021			
			Average				Average	
	Fair value	Principal	Life (in years)	Coupon	Fair value	Principal	Life (in years)	Coupon
				(dollars in thousands)				
Agency pass-through securities	$4,262,502	$4,693,045	10.1	3.5%	$2,666,768	$2,649,238	8.6	2.2%
Subordinate credit-linked securities	177,898	184,620	4.6	11.2%	—	—	—	—
Senior non-Agency securities	22,201	28,103	14.3	2.5%	—	—	—	—
	$4,462,601	$4,905,768			$2,666,768	$2,649,238		

Credit Risk Transfer Transactions

Following is a summary of the composition of the loans underlying our investment in funded CRT arrangements.

CRT Transactions

Following is a summary of the composition of our holdings of CRT arrangements.

	December 31, 2022	December 31, 2021
	(in thousands)	
Carrying value of CRT arrangements:		
Derivative and credit risk transfer strip assets (liabilities), net		
CRT strips	$ (137,193)	$ (26,837)
CRT derivatives	(22,098)	18,964
	(159,291)	(7,873)
Deposits securing CRT arrangements	1,325,294	1,704,911
Interest-only security payable at fair value	(21,925)	(10,593)
	$ 1,144,078	$ 1,686,445
UPB of loans subject to credit guarantee obligations (1)	$ 25,315,524	$ 30,808,907

(1) UPB for December 31, 2022 includes modified loans that have incurred losses; such loans are excluded from UPB for December 31, 2021.

Following is a summary of the composition of the loans underlying our investment in CRT arrangements as of December 31, 2022:

	Year of origination						
	2020	2019	2018	2017	2016	2015	Total
	(in millions)						
UPB (1):							
Outstanding	$ 5,085	$ 11,776	$ 3,087	$ 2,588	$ 2,113	$ 667	$ 25,316
Liquidations:							
Balances	$ —	$ 2.8	$ 54.2	$ 155.1	$ 114.0	$ 56.6	$ 382.7
Losses	$ —	$ 0.2	$ 5.3	$ 18.9	$ 11.8	$ 6.7	$ 42.9
Modifications:							
Balances	$ 64.4	$ 532.0	$ 286.2	$ —	$ —	$ —	$ 882.6
Losses	$ 0.6	$ 6.9	$ 5.7	$ —	$ —	$ —	$ 13.2

(1) Includes modified loans that have incurred losses through December 31, 2022.

	Year of origination						
Original debt-to income ratio	2020	2019	2018	2017	2016	2015	Total
	(in millions)						
<25%	$ 1,049	$ 1,770	$ 286	$ 328	$ 316	$ 72	$ 3,821
25 - 30%	817	1,490	253	299	286	73	3,218
30 - 35%	896	1,805	359	399	364	100	3,923
35 - 40%	877	2,103	498	471	403	120	4,472
40 - 45%	875	2,541	733	656	553	181	5,539
>45%	571	2,067	958	435	191	121	4,343
	$ 5,085	$ 11,776	$ 3,087	$ 2,588	$ 2,113	$ 667	$ 25,316
Weighted average	33.4%	35.8%	38.9%	36.4%	35.0%	31.4%	35.6%

Origination FICO credit score	Year of origination 2020	2019	2018	2017	2016	2015	Total
	(in millions)						
600 - 649	$ 35	$ 169	$ 73	$ 30	$ 19	$ 11	$ 337
650 - 699	254	1,112	649	394	257	133	2,799
700 - 749	1,204	3,454	1,091	880	671	203	7,503
750 or greater	3,584	7,009	1,266	1,280	1,166	320	14,625
Not available	8	32	8	4	—	—	52
	$ 5,085	$ 11,776	$ 3,087	$ 2,588	$ 2,113	$ 667	$ 25,316
Weighted average	763	752	734	744	751	742	751

Origination loan-to value ratio	Year of origination 2020	2019	2018	2017	2016	2015	Total
	(in millions)						
<80%	$ 2,388	$ 4,163	$ 988	$ 838	$ 857	$ 267	$ 9,501
80-85%	854	2,254	736	737	570	177	5,328
85-90%	333	663	140	134	115	38	1,423
90-95%	462	1,249	354	317	236	72	2,690
95-100%	1,048	3,447	869	562	335	113	6,374
	$ 5,085	$ 11,776	$ 3,087	$ 2,588	$ 2,113	$ 667	$ 25,316
Weighted average	80.7%	83.3%	83.5%	82.5%	80.6%	81.0%	82.4%

Current loan-to value ratio (1)	Year of origination 2020	2019	2018	2017	2016	2015	Total
	(in millions)						
<80%	$ 5,046	$ 11,677	$ 3,064	$ 2,584	$ 2,113	$ 667	$ 25,151
80-85%	31	73	13	2	—	—	119
85-90%	6	17	6	1	—	—	30
90-95%	1	5	2	—	—	—	8
95-100%	—	2	1	1	—	—	4
>100%	1	2	1	—	—	—	4
	$ 5,085	$ 11,776	$ 3,087	$ 2,588	$ 2,113	$ 667	$ 25,316
Weighted average	56.1%	55.9%	53.0%	48.0%	43.9%	41.3%	53.4%

(1) Based on current UPB compared to estimated fair value of the property securing the loan.

Geographic distribution	Year of origination 2020	2019	2018	2017	2016	2015	Total
	(in millions)						
CA	$ 519	$ 1,134	$ 373	$ 269	$ 399	$ 121	$ 2,815
FL	564	1,150	398	274	229	60	2,675
TX	615	1,027	247	223	268	103	2,483
VA	268	525	113	123	148	63	1,240
MD	197	491	139	147	138	37	1,149
Other	2,922	7,449	1,817	1,552	931	283	14,954
	$ 5,085	$ 11,776	$ 3,087	$ 2,588	$ 2,113	$ 667	$ 25,316

Regional geographic distribution (1)	Year of origination 2020	2019	2018	2017	2016	2015	Total
				(in millions)			
Northeast	$ 469	$ 1,439	$ 363	$ 372	$ 267	$ 98	$ 3,008
Southeast	1,734	4,074	1,111	895	668	207	8,689
Midwest	472	1,237	263	248	191	48	2,459
Southwest	1,337	2,615	589	508	401	140	5,590
West	1,073	2,411	761	565	586	174	5,570
	$ 5,085	$ 11,776	$ 3,087	$ 2,588	$ 2,113	$ 667	$ 25,316

(1) Northeast consists of CT, DE, ME, MA, NH, NJ, NY, PA, PR, RI, VT, VI; Southeast consists of AL, DC, FL, GA, KY, MD, MS, NC, SC, TN, VA, WV; Midwest consists of IL, IN, IA, MI, MN, NE, ND, OH, SD, WI; Southwest consists of AZ, AR, CO, KS, LA, MO, NM, OK, TX, UT; and West consists of AK, CA, GU, HI, ID, MT, NV, OR, WA and WY.

Collection status	Year of origination 2020	2019	2018	2017	2016	2015	Total
				(in millions)			
Delinquency							
Current - 89 Days	$ 5,063	$ 11,662	$ 3,022	$ 2,572	$ 2,102	$ 663	$ 25,084
90 - 179 Days	10	52	26	12	9	4	113
180+ Days	10	49	28	4	2	—	93
Foreclosure	2	13	11	—	—	—	26
	$ 5,085	$ 11,776	$ 3,087	$ 2,588	$ 2,113	$ 667	$ 25,316
Bankruptcy	$ 2	$ 19	$ 16	$ 7	$ 8	$ 2	$ 54

Cash Flows

Our cash flows for the years ended December 31, 2022, 2021, and 2020 are summarized below:

	Year ended December 31, 2022	2021	2020
		(in thousands)	
Operating activities	$ 1,784,471	$ (2,819,714)	$ 671,656
Investing activities	(1,867,474)	1,093,013	(15,367)
Financing activities	135,886	1,727,980	(702,641)
Net cash flows	$ 52,883	$ 1,279	$ (46,352)

Our cash flows resulted in a net increase in cash of $52.9 million during 2022, as discussed below.

Operating activities

Net cash provided by operating activities totaled $1.8 billion during 2022, as compared to net cash used in operating activities of $2.8 billion during 2021 and net cash provided by operating activities of $671.7 million during 2020. Cash flows from operating activities are most influenced by cash flows from loans acquired for sale as shown below:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Operating cash flows from:			
Loans acquired for sale	$ 1,417,213	$ (2,704,816)	$ (165,398)
Other	367,258	(114,898)	837,054
	$ 1,784,471	$ (2,819,714)	$ 671,656

Cash flows from loans acquired for sale primarily reflect changes in the level of production inventory from the beginning to end of the years presented as well as cash flows relating to associated hedging activities. Our inventory of loans acquired for sale decreased during the year ended December 31, 2022, as compared to 2021, resulting in the cash inflow relating to loans acquired for sale. The negative cash flows relating to loans acquired for sale during the years ended December 31, 2021 and 2020, respectively, reflect the increase in our loans acquired for sale inventory and the significant cash hedging costs that reduced cash inflows from loan sales by more than the decrease in our inventory of loans held for sale.

Investing activities

Net cash used in our investing activities was $1.9 billion during 2022, as compared to net cash provided by investing activities of $1.1 billion during 2021 and net cash used in investing activities of $15.4 million during 2020. During 2022, net cash was used in investing activities primarily due to purchases of our investments in MBS in excess of sales and repayments of such assets partially offset by repayments from our investments in CRT arrangements.

Net cash provided by our investing activities was $1.1 billion during 2021 as compared to net cash used in investing activities of $15.4 million during 2020 due primarily to the $1.3 billion of distributions from CRT arrangements that were not replaced by new investments in CRT arrangements.

Financing activities

Net cash provided by our financing activities was $135.9 million during 2022, as compared to net cash provided by financing activities of $1.7 billion and net cash used in financing activities of $702.6 million during 2021 and 2020, respectively. The change during 2022 reflects the relative stability in the level of our investments during the year, as compared to the growth experienced during 2021. The change during 2021 reflects the increased borrowings to finance our investment activities.

As discussed below in *Liquidity and Capital Resources*, our Manager continually evaluates and pursues additional sources of financing to provide us with future investing capacity. We do not raise equity or enter into borrowings for the purpose of financing the payment of dividends. We believe that the cash flows from our investments are adequate to fund our operating expenses and dividend payment requirements. However, we manage our liquidity in the aggregate and are reinvesting our cash flows in new investments as well as using such cash to fund our dividend requirements.

Liquidity and Capital Resources

Our liquidity reflects our ability to meet our current obligations (including the purchase of loans from correspondent sellers, our operating expenses and, when applicable, retirement of, and margin calls relating to, our debt and derivatives positions), make investments as our Manager identifies them, pursue our share repurchase program when determined to be advantageous and make distributions to our shareholders. We generally need to distribute at least 90% of our taxable income each year (subject to certain adjustments) to our shareholders to qualify as a REIT under the Internal Revenue Code. This distribution requirement limits our ability to retain earnings and thereby replenish or increase capital to support our activities.

We expect our primary sources of liquidity to be cash flows from our investment portfolio, including cash earnings on our investments, cash flows from business activities, liquidation of existing investments and proceeds from borrowings and/or additional equity offerings. When we finance a particular asset, the amount borrowed is less than the asset's fair value and we must provide the cash in the amount of such difference. Our ability to continue making investments is dependent on our ability to invest the cash representing such difference.

Our current debt financing strategy is to finance our assets where we believe such borrowing is prudent, appropriate and available. We make collateralized borrowings in the form of sales of assets under agreements to repurchase, loan participation purchase and sale agreements and notes payable, including secured term financing for our MSRs and our CRT arrangements, which has allowed us to more closely match the terms of our borrowings to the expected lives of the assets securing those borrowings. Our leverage ratio, defined as all borrowings divided by shareholders' equity at the date presented, was 5.81 and 4.72 at December 31, 2022 and December 31, 2021, respectively.

On June 28, 2022, the Company, through its indirect subsidiary, PMT ISSUER TRUST—FMSR, issued an aggregate principal amount of $305 million in secured term notes (the "2022-FT1 Notes") to qualified institutional buyers under Rule 144A of the Securities Act. The 2022-FT1 Notes bear interest at a rate equal to United States 30 Day Average Secured Overnight Financing Rate, or SOFR, plus 4.19% per annum and will mature on June 25, 2027 or, if extended pursuant to the terms of the 2022-FT1 Notes Indenture Supplement, either June 25, 2028 or June 25, 2029. The 2022-FT1 Notes rank pari passu with the 2018-FT1 Notes, the 2021-FT2 Notes, and the Series 2017-MSRVF1 Notes issued by PMT ISSUER TRUST—FMSR.

Sales of Assets Under Agreements to Repurchase

Our repurchase agreements represent the sales of assets together with agreements for us to buy back the assets at a later date. Following is a summary of the activities in our repurchase agreements financing:

	Year ended December 31,		
Assets sold under agreements to repurchase	**2022**	**2021**	**2020**
		(in thousands)	
Average balance outstanding	$ 5,625,345	$ 6,161,755	$ 5,508,147
Maximum daily balance outstanding	$ 8,834,936	$ 8,882,538	$ 10,433,609
Ending balance	$ 6,616,528	$ 6,671,890	$ 6,309,418

The difference between the maximum and average daily amounts outstanding is primarily due to timing of loan purchases and sales in our correspondent production business. The total facility size of our assets sold under agreements to repurchase was approximately $11.6 billion at December 31, 2022.

Because a significant portion of our current debt facilities consists of short-term borrowings, we expect to either renew these facilities in advance of maturity in order to ensure our ongoing liquidity and access to capital or otherwise allow ourselves sufficient time to replace any necessary financing.

As discussed above, all of our repurchase agreements, and mortgage loan participation purchase and sale agreements have short-term maturities:

- The transactions relating to loans and REO under agreements to repurchase generally provide for terms of approximately one to two years;
- The transactions relating to loans under mortgage loan participation purchase and sale agreements provide for terms of approximately one year; and
- The transactions relating to assets under notes payable provide for terms ranging from two to five years.

Debt Covenants

Our debt financing agreements require us and certain of our subsidiaries to comply with various financial covenants. As of the filing of this Report, these financial covenants include the following:

- a minimum of $75 million in unrestricted cash and cash equivalents among the Company and/or our subsidiaries; a minimum of $75 million in unrestricted cash and cash equivalents among our Operating Partnership and its consolidated subsidiaries; a minimum of $25 million in unrestricted cash and cash equivalents between PMC and PennyMac Holdings, LLC ("PMH"); a minimum of $25 million in unrestricted cash and cash equivalents at PMC; and a minimum of $10 million in unrestricted cash and cash equivalents at PMH;
- a minimum tangible net worth for the Company of $1.25 billion; a minimum tangible net worth for our Operating Partnership of $1.25 billion; a minimum tangible net worth for PMH of $250 million; and a minimum tangible net worth for PMC of $300 million;

- a maximum ratio of total liabilities to tangible net worth of less than 10:1 for PMC and PMH and 7:1 for the Company and our Operating Partnership; and
- at least two warehouse or repurchase facilities that finance amounts and assets similar to those being financed under our existing debt financing agreements.

Although these financial covenants limit the amount of indebtedness we may incur and impact our liquidity through minimum cash reserve requirements, we believe that these covenants currently provide us with sufficient flexibility to successfully operate our business and obtain the financing necessary to achieve that purpose.

PLS is also subject to various financial covenants, both as a borrower under its own financing arrangements and as our servicer under certain of our debt financing agreements. The most significant of these financial covenants currently include the following:

- a minimum in unrestricted cash and cash equivalents of $100 million;
- a minimum tangible net worth of $1.25 billion;
- a maximum ratio of total liabilities to tangible net worth of 10:1; and
- at least one other warehouse or repurchase facility that finances amounts and assets that are similar to those being financed under certain of our existing secured financing agreements.

Many of our debt financing agreements contain a condition precedent to obtaining additional funding that requires us to maintain positive net income for at least one (1) of the previous two consecutive quarters, or other similar measures. For the most recent fiscal quarter, the Company is compliant with all such conditions. However, we may be required to obtain waivers from certain lenders in the future if this condition precedent is not met.

Our debt financing agreements also contain margin call provisions that, upon notice from the applicable lender at its option, require us to transfer cash or, in some instances, additional assets in an amount sufficient to eliminate any margin deficit. A margin deficit will generally result from any decline in the market value (as determined by the applicable lender) of the assets subject to the related financing agreement, although in some instances we may agree with the lender upon certain thresholds (in dollar amounts or percentages based on the market value of the assets) that must be exceeded before a margin deficit will arise. Upon notice from the applicable lender, we will generally be required to satisfy the margin call on the day of such notice or within one business day thereafter, depending on the timing of the notice.

Regulatory Capital and Liquidity Requirements

In addition to the financial covenants imposed upon us and PLS under our debt financing agreements, we and/or PLS, as applicable, are also subject to liquidity and net worth requirements established by the Federal Housing Finance Agency (“FHFA”) for Agency sellers/servicers and Ginnie Mae for single-family issuers. FHFA and Ginnie Mae have established minimum liquidity and net worth requirements for approved non-depository single-family sellers/servicers in the case of FHFA, and for approved single-family issuers in the case of Ginnie Mae, as summarized below:

- A minimum net worth of a base of $2.5 million plus 25 basis points of UPB for total 1-4 unit residential loans serviced;
- A tangible net worth/total assets ratio greater than or equal to 6%;
- A liquidity requirement equal to 0.035% (3.5 basis points) of total Agency servicing UPB plus an incremental 200 basis points of the amount by which total nonperforming Agency servicing UPB (reduced by 70% of the UPB of nonperforming Agency loans that are in COVID-19 pandemic-related payment forbearance and were current when they entered such forbearance) exceeds 6% of the applicable Agency servicing UPB; allowable assets to satisfy the liquidity requirement, include cash and cash equivalents (unrestricted), certain investment-grade securities that are available for sale or held for trading including Agency mortgage-backed securities, obligations of Fannie Mae or Freddie Mac, and U.S. Treasury obligations, and unused and available portions of committed servicing advance lines;
- In the case of PLS, liquidity equal to the greater of $1.0 million or 0.10% (10 basis points) of its outstanding Ginnie Mae single-family securities, which must be met with cash and cash equivalents; and
- In the case of PLS, net worth equal to $2.5 million plus 0.35% (35 basis points) of its outstanding Ginnie Mae single-family obligations.

We believe that we and PLS are currently in compliance with the applicable Agency requirements. In August 2022, the Agencies issued revised capital and liquidity requirements. The requirements will be effective at various dates beginning September 30, 2023, for issuers of securities guaranteed by seller/servicers of mortgage loans to Fannie Mae and Freddie Mac and issuers of Ginnie Mae securities. We believe that we and PLS were in compliance with the applicable Agencies’ revised requirements as of December 31, 2022.

Our Manager continues to explore a variety of additional means of financing our business, including debt financing through bank warehouse lines of credit, repurchase agreements, term financing, securitization transactions and additional equity offerings. However, there can be no assurance as to how much additional financing capacity such efforts will produce, what form the financing will take or that such efforts will be successful.

Off-Balance Sheet Arrangements and Aggregate Contractual Obligations

Off-Balance Sheet Arrangements

As of December 31, 2022, we have not entered into any off-balance sheet arrangements.

All debt financing arrangements that matured between December 31, 2022 and the date of this Report have been renewed, extended or replaced.

The amount at risk (the fair value of the assets pledged plus the related margin deposit, less the amount advanced by the counterparty and accrued interest) relating to our assets sold under agreements to repurchase is summarized by counterparty below as of December 31, 2022:

Counterparty	Amount at risk (in thousands)
Bank of America, N.A.	$ 110,367
Goldman Sachs & Co. LLC	101,768
Citibank, N.A.	95,553
Barclays Capital Inc.	71,837
JPMorgan Chase & Co.	59,677
Wells Fargo Securities, LLC	18,527
Credit Suisse First Boston Mortgage Capital LLC	15,093
Morgan Stanley & Co. LLC	11,452
RBC Capital Markets, L.P.	8,996
Daiwa Capital Markets America Inc.	9,904
Amherst Pierpont Securities LLC	6,744
BNP Paribas Corporate & Institutional Banking	6,480
Nomura Holdings America, Inc	1,707
	$ 518,105

Management Agreement. We are externally managed and advised by our Manager pursuant to a management agreement, which requires our Manager to oversee our business affairs in conformity with the investment policies that are approved and monitored by our board of trustees. Our Manager is responsible for our day-to-day management and will perform such services and activities related to our assets and operations as may be appropriate.

Pursuant to our management agreement, our Manager collects a base management fee and may collect a performance incentive fee, both payable quarterly and in arrears. The management agreement, as amended, expires on June 30, 2025 subject to automatic renewal for additional 18-month periods, unless terminated earlier in accordance with the terms of the servicing agreement.

The base management fee is calculated at a defined annualized percentage of “shareholders’ equity.” Our “shareholders’ equity” is defined as the sum of the net proceeds from any issuances of our equity securities since our inception (weighted for the time outstanding during the measurement period); plus our retained earnings at the end of the quarter; less any amount that we pay for repurchases of our common shares (weighted for the time held during the measurement period); and excluding one-time events pursuant to changes in GAAP and certain other non-cash charges after discussions between our Manager and our independent trustees and approval by a majority of our independent trustees.

Pursuant to the terms of our management agreement, the base management fee is equal to the sum of (i) 1.5% per year of average shareholders’ equity up to $2 billion, (ii) 1.375% per year of average shareholders’ equity in excess of $2 billion and up to $5 billion, and (iii) 1.25% per year of average shareholders’ equity in excess of $5 billion.

The performance incentive fee is calculated at a defined annualized percentage of the amount by which “net income,” on a rolling four-quarter basis and before deducting the incentive fee, exceeds certain levels of annualized return on our “equity.” For the purpose of determining the amount of the performance incentive fee, “net income” is defined as net income attributable to common shares or loss computed in accordance with GAAP and adjusted to exclude one-time events pursuant to changes in GAAP and certain other non-cash charges determined after discussions between PCM and our independent trustees and approval by a majority of our independent trustees. For this purpose, “equity” is the weighted average of the issue price per common share of all of our public offerings of common shares, multiplied by the weighted average number of common shares outstanding (including restricted share units issued under our equity incentive plans) in the four-quarter period.

The performance incentive fee is calculated quarterly and is equal to: (a) 10% of the amount by which net income attributable to common shares of beneficial interest for the quarter exceeds (i) an 8% return on equity plus the high watermark, up to (ii) a 12% return on equity; plus (b) 15% of the amount by which net income for the quarter exceeds (i) a 12% return on equity plus the high watermark, up to (ii) a 16% return on equity; plus (c) 20% of the amount by which net income for the quarter exceeds a 16% return on equity plus the high watermark.

The "high watermark" is the quarterly adjustment that reflects the amount by which the net income (stated as a percentage of return on equity) in that quarter exceeds or falls short of the lesser of 8% and the Fannie Mae MBS yield (the target yield) for such quarter. The "high watermark" starts at zero and is adjusted quarterly. If the net income is lower than the target yield, the high watermark is increased by the difference. If the net income is higher than the target yield, the high watermark is reduced by the difference. Each time a performance incentive fee is earned, the high watermark returns to zero. As a result, the threshold amounts required for PCM to earn a performance incentive fee are adjusted cumulatively based on the performance of our net income over (or under) the target yield, until the net income in excess of the target yield exceeds the then-current cumulative high watermark amount, and a performance incentive fee is earned.

Under the management agreement, PCM is entitled to reimbursement of its organizational and operating expenses, including third-party expenses, incurred on our behalf, it being understood that PCM and its affiliates shall allocate a portion of their personnel's time to provide certain legal, tax and investor relations services for our direct benefit. With respect to the allocation of PCM's and its affiliates' personnel, PCM was reimbursed $120,000 per fiscal quarter through June 30, 2020 and is reimbursed $165,000 per fiscal quarter from and after July 1, 2020, such amount to be reviewed annually and to not preclude reimbursement for any other services performed by PCM or its affiliates.

We are required to pay PCM and its affiliates a pro rata portion of rent, telephone, utilities, office furniture, equipment, machinery and other office, internal and overhead expenses of PCM and its affiliates required for our and our subsidiaries' operations. These expenses will be allocated based on the ratio of our and our subsidiaries' proportion of gross assets compared to all remaining gross assets managed or owned by PCM and/or its affiliates as calculated at each fiscal quarter end.

PCM may also be entitled to a termination fee under certain circumstances. Specifically, the termination fee is payable for (1) our termination of our management agreement without cause, (2) PCM's termination of our management agreement upon a default by us in the performance of any material term of the agreement that has continued uncured for a period of 30 days after receipt of written notice thereof or (3) PCM's termination of the agreement after the termination by us without cause (excluding a non-renewal) of our MBS agreement, our MSR recapture agreement or our servicing agreement (each as described and/or defined below). The termination fee is equal to three times the sum of (a) the average annual base management fee and (b) the average annual (or, if the period is less than 24 months, annualized) performance incentive fee earned by our Manager during the 24-month period immediately preceding the date of termination.

We may terminate the management agreement without the payment of any termination fee under certain circumstances, including, among other circumstances, uncured material breaches by our Manager of the management agreement, upon a change in control of our Manager (defined to include a 50% change in the shareholding of our Manager in a single transaction or related series of transactions).

Our management agreement also provides that, prior to the undertaking by PCM or its affiliates of any new investment opportunity or any other business opportunity requiring a source of capital with respect to which PCM or its affiliates will earn a management, advisory, consulting or similar fee, PCM shall present to us such new opportunity and the material terms on which PCM proposes to provide services to us before pursuing such opportunity with third parties.

Servicing Agreement. We have entered into a loan servicing agreement with PLS, pursuant to which PLS provides servicing for our portfolio of residential loans and subservicing for our portfolio of MSRs. Such servicing and subservicing provided by PLS include collecting principal, interest and escrow account payments, if any, with respect to loans, as well as managing loss mitigation, which may include, among other things, collection activities, loan workouts, modifications, foreclosures and short sales. PLS also engages in certain loan origination activities that include refinancing loans and financings that facilitate sales of real estate owned properties, or REOs.

The base servicing fee rates for non-distressed loans subserviced by PLS on our behalf are also calculated through a monthly per-loan dollar amount, with the actual dollar amount for each loan based on whether the loan is a fixed-rate or adjustable-rate loan. The base servicing fee rates for loans subserviced on our behalf are $7.50 per month for fixed-rate loans and $8.50 per month for adjustable-rate loans. To the extent that these loans become delinquent, PLS is entitled to an additional servicing fee per loan falling within a range of $10 to $55 per month and based on the delinquency, bankruptcy and foreclosure status of the loan or $75 per month if the underlying mortgaged property becomes REO. PLS is also entitled to customary ancillary income and certain market-based fees and charges, including boarding and deboarding fees, liquidation and disposition fees, and assumption, modification and origination fees, as well as certain fees for COVID-19 related forbearance and modification activities provided for under the CARES Act.

The base servicing fee rates for distressed whole loans are charged based on a monthly per-loan dollar amount, with the actual dollar amount for each loan based on the delinquency, bankruptcy and/or foreclosure status of such loan or whether the underlying mortgage property has become REO. The base servicing fee rates for distressed whole loans range from $30 per month for current loans up to $95 per month for loans where the borrower has declared bankruptcy. The base servicing fee rate for REO is $75 per month. To the extent that we rent our REO under our REO rental program, we pay PLS an REO rental fee of $30 per month per REO, an REO property lease renewal fee of $100 per lease renewal, and a property management fee in an amount equal to PLS' cost if property management services and/or any related software costs are outsourced to a third-party property management firm or 9% of gross rental income if PLS provides property management services directly. PLS is also entitled to retain any tenant paid application fees and late rent fees and seek reimbursement for certain third-party vendor fees.

PLS is also entitled to certain activity-based fees for distressed whole loans that are charged based on the achievement of certain events. These fees range from $750 for a streamline modification to $1,750 for a full modification or liquidation and $500 for a deed-in-lieu of foreclosure. PLS is not entitled to earn more than one liquidation fee, re-performance fee or modification fee per loan in any 18-month period.

In addition, because we have limited employees and infrastructure, PLS is required to provide a range of services and activities significantly greater in scope than the services provided in connection with a customary servicing arrangement. For these services, PLS receives a supplemental servicing fee of $25 per month for each distressed whole loan. PLS is entitled to reimbursement for all customary, good faith reasonable and necessary out-of-pocket expenses incurred by PLS in the performance of its servicing obligations.

Except as otherwise provided in our MSR recapture agreement, when PLS effects a refinancing of a loan on our behalf and not through a third-party lender and the resulting loan is readily saleable, or PLS originates a loan to facilitate the disposition of the real estate acquired by us in settlement of a loan, PLS is entitled to receive from us market-based fees and compensation consistent with pricing and terms PLS offers unaffiliated third parties on a retail basis.

Mortgage Banking Services Agreement. Pursuant to a mortgage banking services agreement (the "MBS agreement"), PLS provides us with certain mortgage banking services, including fulfillment and disposition-related services, with respect to loans acquired by us from correspondent sellers.

Pursuant to the MBS agreement, PLS has agreed to provide such services exclusively for our benefit, and PLS and its affiliates are prohibited from providing such services for any other third party. However, such exclusivity and prohibition shall not apply, and certain other duties instead will be imposed upon PLS, if we are unable to purchase or finance loans as contemplated under our MBS agreement for any reason.

In consideration for the mortgage banking services provided by PLS with respect to our acquisition of loans, through June 30, 2020, PLS was entitled to a monthly fulfillment fee that shall equal (a) no greater than the product of (i) 0.35% and (ii) the aggregate initial unpaid principal balance (the "Initial UPB") of all loans purchased in such month, plus (b) in the case of all loans other than loans sold to or securitized through Fannie Mae or Freddie Mac, no greater than the product of (i) 0.50% and (ii) the aggregate Initial UPB of all such loans sold and securitized in such month; provided however, that no fulfillment fee shall be due or payable to PLS with respect to any Ginnie Mae loans. We do not hold the Ginnie Mae approval required to issue Ginnie Mae MBS and act as a servicer. Accordingly, under the MBS agreement, PLS purchased loans underwritten in accordance with the Ginnie Mae Mortgage-Backed Securities Guide "as is" and without recourse of any kind from us at our cost less an administrative fee plus accrued interest and, through June 30, 2020, a sourcing fee ranging from two to three and one-half basis points, generally based on the average number of calendar days that loans are held by us prior to purchase by PLS.

Effective July 1, 2020, the fulfillment fees and sourcing fees were revised as follows:

- Fulfillment fees shall not exceed the following:
  - (i) the number of loan commitments multiplied by a pull-through factor of either .99 or .80 depending on whether the loan commitments are subject to a "mandatory trade confirmation" or a "best efforts lock confirmation", respectively, and then multiplied by $585 for each pull-through adjusted loan commitment up to and including 16,500 per quarter and $355 for each pull-through adjusted loan commitment in excess of 16,500 per quarter, plus
  - (ii) $315 multiplied by the number of purchased loans up to and including 16,500 per quarter and $195 multiplied by the number of purchased loans in excess of 16,500 per quarter, plus
  - (iii) $750 multiplied by the number of all purchased loans that are sold or securitized to parties other than Fannie Mae and Freddie Mac; provided, however, that no fulfillment fee shall be due or payable to PLS with respect to any Ginnie Mae loans, and as of October 1, 2022, designated Fannie Mae or Freddie Mac loans acquired by PLS.

- Sourcing fees charged to PLS range from one to two basis points, generally based on the average number of calendar days the loans are held by us before purchase by PLS.

PLS may also purchase conventional loans from us at our mutual consent subject to the same sourcing fees and other terms as their purchases of Ginnie Mae loans.

Notwithstanding any provision of the MBS agreement to the contrary, if it becomes reasonably necessary or advisable for PLS to engage in additional services in connection with post-breach or post-default resolution activities for the purposes of a correspondent agreement, then we have generally agreed with PLS to negotiate in good faith for additional compensation and reimbursement of expenses to be paid to PLS for the performance of such additional services.

MSR Recapture Agreement. Through June 30, 2020, pursuant to the terms of the MSR recapture agreement entered into by PMC with PLS, if PLS refinanced through its consumer direct lending business loans for which we previously held the MSRs, PLS was generally required to transfer and convey to PMC, cash in an amount equal to 30% of the fair market value of the MSRs related to all such loans so originated.

Effective July 1, 2020, the 2020 MSR recapture agreement changes the recapture fee payable by PLS to a tiered amount equal to:

- 40% of the fair market value of the MSRs relating to the recaptured loans subject to the first 15% of the “recapture rate”;
- 35% of the fair market value of the MSRs relating to the recaptured loans subject to the recapture rate in excess of 15% and up to 30%; and
- 30% of the fair market value of the MSRs relating to the recaptured loans subject to the recapture rate in excess of 30%.

The “recapture rate” means, during each month, the ratio of (i) the aggregate unpaid principal balance of all recaptured loans, to (ii) the aggregate unpaid principal balance of all mortgage loans for which the Company held the MSRs and that were refinanced or otherwise paid off in such month. The Company has further agreed to allocate sufficient resources to target a recapture rate of 15%.

The MSR recapture agreement expires, unless terminated earlier in accordance with its terms, on June 30, 2025, subject to automatic renewal for additional 18-month periods, unless terminated in accordance with its terms.

Spread Acquisition and MSR Servicing Agreement. On December 19, 2016, we amended and restated a master spread acquisition and MSR servicing agreement with PLS (the “12/19/16 Spread Acquisition Agreement”). Pursuant to the 12/19/16 Spread Acquisition Agreement, we may acquire from PLS, from time to time, the right to receive participation certificates representing beneficial ownership in ESS arising from Ginnie Mae MSRs acquired by PLS, in which case PLS generally would be required to service or subservice the related loans for Ginnie Mae. The primary purpose of the amendment and restatement was to facilitate the continued financing of the ESS owned by us in connection with the parties’ participation in the GNMA MSR Facility (as defined below).

To the extent PLS refinances any of the loans relating to the ESS we have acquired, the 12/19/16 Spread Acquisition Agreement also contains recapture provisions requiring that PLS transfer to us, at no cost, the ESS relating to a certain percentage of the unpaid principal balance of the newly originated loans. However, under the 12/19/16 Spread Acquisition Agreement, in any month where the transferred ESS relating to newly originated Ginnie Mae loans is not equivalent to at least 90% of the product of the excess servicing fee rate and the unpaid principal balance of the refinanced loans, PLS is also required to transfer additional ESS or cash in the amount of such shortfall. Similarly, in any month where the transferred ESS relating to modified Ginnie Mae loans is not equivalent to at least 90% of the product of the excess servicing fee rate and the unpaid principal balance of the modified loans, the 12/19/16 Spread Acquisition Agreement contains provisions that require PLS to transfer additional ESS or cash in the amount of such shortfall. To the extent the fair market value of the aggregate ESS to be transferred for the applicable month is less than $200,000, PLS may, at its option, wire cash to us in an amount equal to such fair market value in lieu of transferring such ESS. The remaining balance of the ESS was repaid during the quarter ended March 31, 2021.

Master Repurchase Agreement with PLS. On December 19, 2016, we, through PMH, entered into a master repurchase agreement with PLS (the “PMH Repurchase Agreement”), pursuant to which PMH may borrow from PLS for the purpose of financing PMH’s participation certificates representing beneficial ownership in ESS acquired from PLS under the 12/19/16 Spread Acquisition Agreement. PLS then re-pledges such participation certificates to PNMAC GMSR ISSUER TRUST (the “Issuer Trust”) under a master repurchase agreement by and among PLS, the Issuer Trust and Private National Mortgage Acceptance Company, LLC, as guarantor (the “PC Repurchase Agreement”). The Issuer Trust was formed for the purpose of allowing PLS to finance MSRs and ESS relating to such MSRs (the “GNMA MSR Facility”).

In connection with the GNMA MSR Facility, PLS pledges and/or sells to the Issuer Trust participation certificates representing beneficial interests in MSRs and ESS pursuant to the terms of the PC Repurchase Agreement. In return, the Issuer Trust (a) has issued to PLS, pursuant to the terms of an indenture, the Series 2016-MSRVF1 Variable Funding Note, dated December 19, 2016, known as the “PNMAC GMSR ISSUER TRUST MSR Collateralized Notes, Series 2016-MSRVF1” (the “VFN”), and (b) has issued and may, from time to time pursuant to the terms of any supplemental indenture, issue to institutional investors additional term notes (“Term

Notes”), in each case secured on a *pari passu* basis by the participation certificates relating to the MSRs and ESS. The maximum principal balance of the VFN is $1,000,000,000.

The principal amount paid by PLS for the participation certificates under the PMH Repurchase Agreement is based upon a percentage of the market value of the underlying ESS. Upon PMH’s repurchase of the participation certificates, PMH is required to repay PLS the principal amount relating thereto plus accrued interest (at a rate reflective of the current market and consistent with the weighted average note rate of the VFN and any outstanding Term Notes) to the date of such repurchase. PLS is then required to repay the Issuer Trust the corresponding amount under the PC Repurchase Agreement.

As a condition to our entry into the 12/19/16 Spread Acquisition Agreement and our participation in the GNMA MSR Facility, we were also required to enter into a subordination, acknowledgement and pledge agreement (the “Subordination Agreement”). Under the terms of the Subordination Agreement, we pledged to the Issuer Trust our rights under the 12/19/16 Spread Acquisition Agreement and our interest in any ESS purchased thereunder.

The Subordination Agreement contains representations, warranties and covenants by us that are substantially similar to those contained in our other financing arrangements. To the extent there exists an event of default under the PC Repurchase Agreement or a “trigger event” (as defined in the Subordination Agreement), the Issuer Trust would be entitled to liquidate any and all of the collateral securing the PC Repurchase Agreement, including the ESS subject to the PMH Repurchase Agreement. PMH repaid all borrowings under this agreement in connection with PLS repurchasing the remaining balance of the ESS during the quarter ended March 31, 2021.

Loan Purchase Agreement. We have entered into a loan purchase agreement with our Servicer. Currently, we use the loan purchase agreement for the purpose of acquiring prime jumbo and Agency-eligible residential loans originated by our Servicer. The loan purchase agreement contains customary terms and provisions, including representations and warranties, covenants, repurchase remedies and indemnities. The purchase prices we pay our Servicer for such loans are market-based.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Market risk is the exposure to loss resulting from changes in interest rates, foreign currency exchange rates, commodity prices, equity prices, real estate values and other market-based risks. The primary market risks that we are exposed to are real estate risk, credit risk, interest rate risk, prepayment risk, inflation risk and market value risk. Our primary trading asset is our inventory of loans acquired for sale. We believe that such assets’ fair values respond primarily to changes in the market interest rates for comparable recently-originated loans. Our other market-risk assets are a substantial portion of our investments and are primarily comprised of MSRs, ESS, CRT arrangements and MBS. We believe that the fair values of MSRs, ESS and MBS also respond primarily to changes in the market interest rates for comparable loans or yields on MBS. Changes in interest rates are reflected in the prepayment speeds underlying these investments and in the pricing spread (an element of the discount rate) used in their valuation. We believe that the primary market risks to the fair values of our investment in CRT arrangements are changes in market credit spreads and the fair value of the real estate securing the loans underlying such arrangements.

Real Estate Risk

Residential property values are subject to volatility and may be affected adversely by a number of factors, including, but not limited to, national, regional and local economic conditions (which may be adversely affected by industry slowdowns and other factors); local real estate conditions (such as an oversupply of housing); construction quality, age and design; demographic factors; and retroactive changes to building or similar codes. Decreases in property values reduce the value of the collateral and the potential proceeds available to a borrower to repay loans, which could cause us to suffer losses.

Credit Risk

We are subject to credit risk in connection with our investments. A significant portion of our assets is comprised of or dependent upon the performance of residential loans. The credit risk related to these investments pertains to the ability and willingness of the borrowers to pay, which is assessed before credit is granted. We believe that residual loan credit quality is primarily determined by the borrowers’ credit profiles and loan characteristics. We have entered into CRT arrangements which involve the absorption on our part of losses relating to certain loans we sell that subsequently default. The fair value of the assets we carry related to these arrangements are sensitive to credit market conditions generally, perceptions of the performance of the loans in our CRT arrangements’ reference pools specifically and to the actual performance of such loans.

In the event of a significant rising interest rate environment and/or economic downturn, defaults could increase and result in credit losses to us, which could materially and adversely affect our business, financial condition, liquidity, results of operations and prospects. Furthermore, such defaults could have an adverse effect on the spread between our interest earning assets and interest bearing liabilities.

Interest Rate Risk

Interest rate risk is highly sensitive to many factors, including governmental monetary and tax policies, domestic and international economic and political considerations and other factors beyond our control. Changes in interest rates affect the fair value of interest income and net servicing income we earn from our mortgage-related investments. This effect is most pronounced with fixed-rate investments, MSRs and ESS. Changes in interest rates significantly influence the prepayment speed of the loans underlying our investment in MSRs and ESS which affects those assets' estimated lives. In general, rising interest rates negatively affect the fair value of our investments in MBS and loans, while decreasing market interest rates negatively affect the fair value of our MSRs and ESS.

Our operating results will depend, in part, on differences between the income from our investments and our financing costs. Presently much of our debt financing is based on a floating rate of interest calculated on a fixed spread over the relevant index, as determined by the particular financing arrangement.

We engage in interest rate risk management activities in an effort to reduce the variability of earnings caused by changes in interest rates. To manage this price risk resulting from interest rate risk, we use derivative financial instruments acquired with the intention of moderating the risk that changes in market interest rates will result in unfavorable changes in the value of our interest rate lock commitments, inventory of loans acquired for sale, MBS, ESS, loans and MSRs. We do not use derivative financial instruments for purposes other than in support of our risk management activities.

Prepayment Risk

To the extent that the actual prepayment rate on our mortgage-based investments differs from what we projected when we purchased the loans and when we measured fair value as of the end of each reporting period, our gain or loss will be affected. As we receive prepayments of principal on our MBS investments, any premiums paid for such investments will be amortized against interest income using the interest method through the expected maturity dates of the investments. In general, an increase in prepayment rates will accelerate the amortization of purchase premiums, thereby reducing the interest income earned on such MBS investments and will accelerate the fair value decline of MSRs and ESS thereby reducing net servicing income. Conversely, as we receive prepayments of principal on our investments, any discounts realized on the purchase of such investments will be accrued into interest income using the interest method through the expected maturity dates of the investments. In general, an increase in prepayment rates will accelerate the accrual of purchase discounts, thereby increasing the interest income earned on such MBS investments.

Inflation Risk

Virtually all of our assets and liabilities are interest rate sensitive in nature. As a result, interest rates and other factors will influence our performance more so than inflation. Changes in interest rates do not necessarily correlate with inflation rates or changes in inflation rates. Furthermore, our consolidated financial statements are prepared in accordance with GAAP and any distributions we may make to our shareholders will be determined by our board of trustees based primarily on our taxable income and, in each case, our activities and balance sheet are measured with reference to historical cost and/or fair value without considering inflation.

Risk Management Activities

We engage in risk management activities primarily in an effort to mitigate the effect of changes in interest rates on the fair value of our assets. To manage this price risk and its impact on our profitability, book value, and available liquidity, we use derivative financial instruments acquired with the intention of moderating the risk that changes in market interest rates will result in unfavorable changes in the fair value of our assets, primarily on our MSR investments as well as IRLCs and our inventory of loans held for sale. Our objective is to maintain our loss coverage levels within established thresholds while minimizing our hedging expense. We do not use derivative financial instruments other than IRLCs and repurchase agreement derivatives (both of which arise from our operations) for purposes other than in support of our risk management activities.

Our strategies are reviewed daily within a disciplined risk management framework. We use a variety of interest rate and spread shifts and scenarios and define target limits for market value and liquidity loss in those scenarios. With respect to our IRLCs and inventory of loans held for sale, we use MBS forward sale contracts to lock in the price at which we will sell the mortgage loans or resulting MBS, and further use MBS put options to mitigate the risk of our IRLCs not closing at the rate we expect. With respect to our MSRs and other interest rate sensitive assets and liabilities, we seek to mitigate mortgage-based loss exposure utilizing MBS forward purchase and sale contracts, address exposures to smaller interest rate shifts with Treasury and interest rate swap futures, and use options and swaptions to achieve target coverage levels for larger interest rate shocks.

Fair Value Risk

Our loans, MBS, MSRs, ESS and CRT arrangements are reported at their fair values. The fair value of these assets fluctuates primarily based on the exposure of the underlying investment. Performing prime loans (along with any related recognized IRLCs), MBS, MSRs and ESS are more sensitive to changes in market interest rates, while CRT arrangements are more sensitive to changes in the market credit spreads, underlying real estate values relating to the loans underlying our investments, and other factors such as the effectiveness and servicing practices of the servicers associated with the properties securing such investment.

Generally, in an interest rate market where interest rates are rising or are expected to rise, the fair value of our loans and MBS would be expected to decrease, whereas in an interest rate market where interest rates are generally decreasing or are expected to decrease, loan and MBS values would be expected to increase. The fair value of MSRs and ESS, on the other hand, tends to respond generally in an opposite manner to that of loans acquired for sale and MBS.

Generally, in a real estate market where values are rising or are expected to rise, the fair value of our investment in CRT arrangements would be expected to appreciate, whereas in a real estate market where values are generally dropping or are expected to drop, the fair values of CRT arrangements would be expected to decrease.

The following sensitivity analyses are limited in that they were performed at a particular point in time; only contemplate the movements in the indicated variables; do not incorporate changes to other variables; are subject to the accuracy of various models and inputs used; and do not incorporate other factors that would affect our overall financial performance in such scenarios, including operational adjustments made by management to account for changing circumstances. For these reasons, the following estimates should not be viewed as earnings forecasts.

The following tables summarize the fair value sensitivity of the respective assets to changes in the market inputs that we believe most affect their fair values as of December 31, 2022.

Mortgage-backed securities at fair value

The following table summarizes the estimated change in fair value of our mortgage-backed securities given several hypothetical (instantaneous) changes in interest rates and parallel shifts in the yield curve:

Interest rate shift in basis points	**-200**	**-75**	**-50**	**50**	**75**	**200**
			(in thousands)			
Change in fair value	$ 394,796	$ 176,799	$ 120,005	$ (125,362)	$ (188,929)	$ (501,175)

Mortgage Servicing Rights

The following tables summarize the estimated change in fair value of MSRs given several shifts in pricing spread, prepayment speeds and annual per-loan cost of servicing:

Change in fair value attributable to shift in:	**-20%**	**-10%**	**-5%**	**+5%**	**+10%**	**+20%**
			(in thousands)			
Pricing spread	$ 221,745	$ 108,032	$ 53,330	$ (52,004)	$ (102,727)	$ (200,497)
Prepayment speed	$ 221,309	$ 107,046	$ 52,668	$ (51,044)	$ (100,544)	$ (195,201)
Annual per-loan cost of servicing	$ 70,515	$ 35,258	$ 17,629	$ (17,629)	$ (35,258)	$ (70,515)

CRT Arrangements

Following is a summary of the effect on fair value of various changes to the pricing spread input used to estimate the fair value of our CRT arrangements given several shifts in pricing spread:

Pricing spread shift in basis points	**-100**	**-50**	**-25**	**25**	**50**	**100**
			(in thousands)			
Change in fair value	$ 42,115	$ 20,688	$ 10,246	$ (10,114)	$ (20,040)	$ (39,400)

Following is a summary of the effect on fair value of various instantaneous changes in home values from those used to estimate the fair value of our CRT arrangements given several shifts:

Property value shift in %	**-15%**	**-10%**	**-5%**	**5%**	**10%**	**15%**
			(in thousands)			
Change in fair value	$ (119,403)	$ (70,147)	$ (31,008)	$ 24,864	$ 44,802	$ 60,627

Item 8. Financial Statements and Supplementary Data

The information called for by this Item 8 is hereby incorporated by reference from our Financial Statements and Auditors' Report beginning at page F-1 of this Report.

Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure

None

Item 9A. Controls and Procedures

Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our reports filed under the Securities Exchange Act of 1934 (the "Exchange Act") is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosures. However, no matter how well a control system is designed and operated, it can provide only reasonable, not absolute, assurance that it will detect or uncover failures within the Company to disclose material information otherwise required to be set forth in our periodic reports.

Our management has conducted an evaluation, with the participation of our Chief Executive Officer and Chief Financial Officer, of the effectiveness of our disclosure controls and procedures as of the end of the period covered by this Report as required by paragraph (b) of Rules 13a-15 and 15d-15 under the Exchange Act. Based on our evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective, as of the end of the period covered by this Report, to provide reasonable assurance that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the applicable rules and forms, and that it is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Management's Annual Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Exchange Act Rule 13a-15(f). Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. Management assessed the effectiveness of its internal control over financial reporting based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control—Integrated Framework (2013). Based on those criteria, management concluded that our internal control over financial reporting was effective as of December 31, 2022.

The effectiveness of our internal control over financial reporting as of December 31, 2021 has been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report which appears herein.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting during the quarter ended December 31, 2022, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Trustees of
PennyMac Mortgage Investment Trust

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of PennyMac Mortgage Investment Trust and subsidiaries (the "Company") as of December 31, 2022, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control—Integrated Framework (2013) issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2022, of the Company and our report dated February 24, 2023, expressed an unqualified opinion on those financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Deloitte & Touche LLP

Los Angeles, California
February 24, 2023

Item 9B. Other Information

None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this Item 10 is hereby incorporated by reference from our definitive proxy statement, or will be contained in an amendment to this Report, in either case to be filed within 120 days after the end of fiscal year 2022.

Item 11. Executive Compensation

The information required by this Item 11 is hereby incorporated by reference from our definitive proxy statement, or will be contained in an amendment to this Report, in either case to be filed by within 120 days after the end of fiscal year 2022.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Equity Compensation Plan Information

The PennyMac Mortgage Investment Trust 2019 Equity Incentive Plan (the "2019 Plan") was adopted and approved by the Company's shareholders in June 2019. The 2019 Plan provides for the issuance of equity based awards, including share options, restricted shares, restricted share units, unrestricted common share awards and other awards based on our shares that may be awarded by us to our officers and trustees, and the members, officers, trustees, directors and employees of PFSI and its subsidiaries or other entities that provide services to us and the employees of such other entities. The 2019 Plan is administered by our compensation committee, pursuant to authority delegated by our board of trustees, which has the authority to make awards to the eligible participants referenced above, and to determine what form the awards will take, and the terms and conditions of the awards. The 2019 Plan allows for grants of equity-based awards up to an aggregate of 8% of our issued and outstanding common shares on a diluted basis at the time of the award. However, the total number of shares available for issuance under the 2019 Plan cannot exceed 40 million.

The following table provides information as of December 31, 2022 concerning our common shares authorized for issuance under our 2019 Plan.

Plan category	(a) Number of securities to be issued upon exercise of outstanding options, warrants and rights	(b) Weighted average exercise price of outstanding options, warrants and rights	(c) Number of securities remaining available for future issuance under equity compensation plans excluding securities reflected in column(a))
Equity compensation plans approved by security holders (1)	444,299	$ —	8,007,008
Equity compensation plans not approved by security holders (2)	—	—	—
Total	444,299	—	8,007,008

(1) Represents equity awards outstanding under the 2019 Plan.
(2) We do not have any equity plans that have not been approved by our shareholders.

The information otherwise required by this Item 12 is hereby incorporated by reference from our definitive proxy statement, or will be contained in an amendment to this Report, in either case to be filed within 120 days after the end of fiscal year 2022.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this Item 13 is hereby incorporated by reference from our definitive proxy statement, or will be contained in an amendment to this Report, in either case to be filed within 120 days after the end of fiscal year 2022.

Item 14. Principal Accounting Fees and Services

The information required by this Item 14 is hereby incorporated by reference from our definitive proxy statement, or will be contained in an amendment to this Report, in either case to be filed within 120 days after the end of fiscal year 2022.

PART IV

Item 15. Exhibits and Financial Statement Schedules

Exhibit No.	Exhibit Description	Incorporated by Reference from the Below-Listed Form (Each Filed under SEC File Number 14-64423) Form	Filing Date
3.1	Declaration of Trust of PennyMac Mortgage Investment Trust, as amended and restated.	10-Q	November 6, 2009
3.2	Second Amended and Restated Bylaws of PennyMac Mortgage Investment Trust.	8-K	March 16, 2018
3.3	Articles Supplementary classifying and designating the 8.125% Series A Fixed-to-Floating Rate Cumulative Redeemable Preferred Shares of Beneficial Interest.	8-A	March 7, 2017
3.4	Articles Supplementary classifying and designating the 8.00% Series B Fixed-to-Floating Rate Cumulative Redeemable Preferred Shares of Beneficial Interest.	8-A	June 30, 2017
3.5	Articles Supplementary classifying and designating the 6.75% Series C Cumulative Redeemable Preferred Shares of Beneficial Interest.	8-A	August 20, 2021
4.1	Description of Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934.	10-K	February 25, 2022
4.2	Specimen Common Share Certificate of PennyMac Mortgage Investment Trust.	10-Q	November 6, 2009
4.3	Specimen Certificate for 8.125% Series A Fixed-to-Floating Rate Cumulative Redeemable Preferred Shares of Beneficial Interest.	8-A	March 7, 2017
4.4	Specimen Certificate for 8.00% Series B Fixed-to-Floating Rate Cumulative Redeemable Preferred Shares of Beneficial Interest.	8-A	June 30, 2017
4.5	Specimen Certificate for 6.75% Series C Cumulative Redeemable Preferred Shares of Beneficial Interest.	8-A	August 20, 2021
4.6	Indenture for Senior Debt Securities, dated as of April 30, 2013, among PennyMac Corp., PennyMac Mortgage Investment Trust and The Bank of New York Mellon Trust Company, N.A.	8-K	April 30, 2013
4.7	Second Supplemental Indenture, dated as of November 7, 2019, among PennyMac Corp., PennyMac Mortgage Investment Trust and The Bank of New York Mellon Trust Company, N.A.	8-K	November 8, 2019
4.8	Third Supplemental Indenture, dated as of March 5, 2021, among PennyMac Corp., PennyMac Mortgage Investment Trust and The Bank of New York Mellon Trust Company, N.A.	8-K	March 5, 2021
4.9	Form of 5.50% Exchangeable Senior Notes due 2024 (included in Exhibit 4.6).	8-K	November 8, 2019
4.10	Form of 5.50% Exchangeable Senior Notes due 2026 (included in Exhibit 4.7).	8-K	March 5, 2021
10.1	Amended and Restated Limited Partnership Agreement of PennyMac Operating Partnership, L.P.	10-Q	November 6, 2009
10.2	First Amendment to the Amended and Restated Limited Partnership Agreement of PennyMac Operating Partnership, L.P., dated as of March 9, 2017.	8-K	March 9, 2017
10.3	Second Amendment to the Amended and Restated Limited Partnership Agreement of PennyMac Operating Partnership, L.P., dated as of July 5, 2017.	8-K	July 6, 2017
10.4	Third Amendment to the Amended and Restated Limited Partnership Agreement of PennyMac Operating Partnership, L.P., as amended, dated as of August 24, 2021.	8-K	August 24, 2021
10.5	Registration Rights Agreement, dated as of August 4, 2009, among PennyMac Mortgage Investment Trust, Stanford L. Kurland, David A. Spector, BlackRock Holdco 2, Inc., Highfields Capital Investments LLC and Private National Mortgage Acceptance Company, LLC.	10-Q	November 6, 2009

10.6	Third Amended and Restated Management Agreement, dated as of June 30, 2020, by and among PennyMac Mortgage Investment Trust, PennyMac Operating Partnership, L.P. and PNMAC Capital Management, LLC.	8-K	July 2, 2020
10.7	Fourth Amended and Restated Flow Servicing Agreement, dated as of June 30, 2020, between PennyMac Operating Partnership, L.P. and PennyMac Loan Services, LLC.	10-Q	July 2, 2020
10.8	Amendment No. 1 to Fourth Amended and Restated Flow Servicing Agreement, dated as of March 9, 2021, by and between PennyMac Loan Services, LLC and PennyMac Operating Partnership, L.P.	10-Q	May 7, 2021
10.9	Amendment No. 2 to the Fourth Amended and Restated Flow Servicing Agreement, dated as of June 4, 2021, by and between PennyMac Loan Services, LLC and PennyMac Operating Partnership, L.P.	10-Q	August 6, 2021
10.10	Amendment No. 3 to Fourth Amended and Restated Flow Servicing Agreement, dated as of September 29, 2021, by and between PennyMac Loan Services, LLC and PennyMac Operating Partnership, L.P.	10-Q	November 5, 2021
10.11	Flow Servicing Agreement, dated as of June 1, 2022, by and between PennyMac Loan Services, LLC and PennyMac Corp.	10-Q	August 5, 2022
10.12	Second Amended and Restated Mortgage Banking Services Agreement, dated as of June 30, 2020, between PennyMac Loan Services, LLC and PennyMac Corp.	8-K	July 2, 2020
10.13	Amendment No. 1 to Second Amended and Restated Mortgage Banking Services Agreement, dated as of December 8, 2020, between PennyMac Loan Services, LLC and PennyMac Corp.	10-K	February 26, 2021
10.14	Amendment No. 2 to Second Amended and Restated Mortgage Banking Services Agreement, dated as of September 28, 2022, by and between PennyMac Loan Services, LLC and PennyMac Corp., and effective as of October 1, 2022.	10-Q	November 3, 2022
10.15	Amendment No. 3 to Second Amended and Restated Mortgage Banking Services Agreement, dated as of December 6, 2022, by and between PennyMac Loan Services, LLC and PennyMac Corp., and effective as of November 1, 2022.	*	
10.16	Second Amended and Restated MSR Recapture Agreement, dated as of June 30, 2020, between PennyMac Loan Services, LLC and PennyMac Corp.	8-K	July 2, 2020
10.17	Amendment No. 1 to Second Amended and Restated MSR Recapture Agreement, dated as of December 8, 2020, between PennyMac Loan Services, LLC and PennyMac Corp.	10-K	February 26, 2021
10.18	Mortgage Loan Purchase Agreement, dated as of September 25, 2012, by and between PennyMac Loan Services, LLC and PennyMac Corp.	10-K	February 29, 2016
10.19	Flow Sale Agreement, dated as of June 16, 2015, by and between PennyMac Corp. and PennyMac Loan Services, LLC.	10-Q	August 10, 2015
10.20	HELOC Flow Purchase and Servicing Agreement, dated as of February 25, 2019, by and between PennyMac Loan Services, LLC and PennyMac Corp.	10-Q	May 5, 2019
10.21†	PennyMac Mortgage Investment Trust 2009 Equity Incentive Plan.	10-Q	November 6, 2009
10.22†	First Amendment to the PennyMac Mortgage Investment Trust Equity Incentive Plan.	10-Q	November 8, 2017
10.23†	Second Amendment to the PennyMac Mortgage Investment Trust Equity Incentive Plan.	10-K	March 1, 2018
10.24†	PennyMac Mortgage Investment Trust 2019 Equity Incentive Plan.	DEF 14A	April 22, 2019
10.25†	Form of Restricted Share Unit Award Agreement under the PennyMac Mortgage Investment Trust 2009 Equity Incentive Plan (2019).	10-Q	February 26, 2019
10.26†	Form of Performance Share Unit Award Agreement under the PennyMac Mortgage Investment Trust 2009 Equity Incentive Plan (2019).	10-Q	February 26, 2019

10.27†	Form of Restricted Share Unit Award Agreement for Non-Employee Trustee under the PennyMac Mortgage Investment Trust 2009 Equity Incentive Plan (2019).	10-Q	May 3, 2019
10.28†	Form of Performance Share Unit Award Agreement under the PennyMac Mortgage Investment Trust 2019 Equity Incentive Plan (2020 MBOs).	10-Q	May 8, 2020
10. 29†	Form of Performance Share Unit Award Agreement under the PennyMac Mortgage Investment Trust 2019 Equity Incentive Plan (Net Share Withholding) (2020).	10-Q	May 8, 2020
10.30†	Form of Restricted Share Unit Award Agreement under the PennyMac Mortgage Investment Trust 2019 Equity Incentive Plan (Net Share Withholding) (2020).	10-Q	May 8, 2020
10.31†	Form of Restricted Share Unit Award Agreement under the PennyMac Mortgage Investment Trust 2019 Equity Incentive Plan (Non Employee Trustee) (2020).	10-Q	May 8, 2020
10.32†	Form of Restricted Stock Award Agreement under the PennyMac Mortgage Investment Trust 2019 Equity Incentive Plan (Net Share Withholding) (2021).	10-Q	May 7, 2021
10.33†	Form of Performance Stock Award Agreement under the PennyMac Mortgage Investment Trust 2019 Equity Incentive Plan (Net Share Withholding) (2021).	10-Q	May 7, 2021
10.34†	Form of Restricted Stock Award Agreement under the PennyMac Mortgage Investment Trust 2019 Equity Incentive Plan (Non Employee Trustee) (2021).	10-Q	May 7, 2021
10.35†	Form of Restricted Stock Award Agreement under the PennyMac Mortgage Investment Trust 2019 Equity Incentive Plan (Non-Employee Trustee) (2022).	10-Q	May 6, 2022
10.36	Base Indenture, dated as of December 20, 2017, by and among PMT ISSUER TRUST-FMSR, Citibank, N.A., PennyMac Corp. and Credit Suisse First Boston Mortgage Capital LLC.	8-K	December 27, 2017
10.37	Amendment No. 1, dated as of April 25, 2018, to the Base Indenture dated as of December 20, 2017, by and among PMT ISSUER TRUST - FMSR, Citibank, N.A., PennyMac Corp., and Credit Suisse First Boston Mortgage Capital LLC	8-K	April 30, 2018
10.38	Amendment No. 2, dated as of July 31, 2020 to the Base Indenture dated as of December 20, 2017, by and among PMT ISSUER TRUST - FMSR, Citibank, N.A., PennyMac Corp., and Credit Suisse First Boston Mortgage Capital LLC.	10-Q	August 7, 2020
10.39	Amendment No. 3, dated as of October 20, 2020 to the Base Indenture dated as of December 20, 2017, by and among PMT ISSUER TRUST – FMSR, Citibank, N.A., PennyMac Corp., and Credit Suisse First Boston Mortgage Capital LLC.	10-Q	November 6, 2020
10.40	Amendment No. 4, dated as of March 30, 2021, to the Base Indenture dated as of December 20, 2017, by and among PMT ISSUER TRUST – FMSR, Citibank, N.A., PennyMac Corp. and Credit Suisse First Boston Mortgage Capital LLC.	8-K	March 31, 2021
10.41	Amendment No. 5, dated as of June 28, 2022, to the Base Indenture dated as of December 20, 2017, by and among PMT ISSUER TRUST – FMSR, Citibank, N.A., PennyMac Corp. and Credit Suisse First Boston Mortgage Capital LLC.	8-K	July 5, 2022
10.42	Series 2017-VF1 Indenture Supplement, dated as of December 20, 2017, by and among PMT ISSUER TRUST-FMSR, Citibank, N.A., PennyMac Corp. and Credit Suisse First Boston Mortgage Capital LLC.	10-K	March 1, 2018
10.43	Amendment No. 1 to the Series 2017-VF1 Indenture Supplement, dated as of June 29, 2018, by and among PMT ISSUER TRUST-FMSR, Citibank, N.A., PennyMac Corp. and Credit Suisse First Boston Mortgage Capital LLC.	8-K	July 6, 2018
10.44	Amendment No. 2 to the Series 2017-VF1 Indenture Supplement, dated as of August 4, 2020, among PMT ISSUER TRUST - FMSR, Citibank, N.A., PennyMac Corp. and Credit Suisse First Boston Mortgage Capital LLC.	8-K	August 10, 2020
10.45^	Amendment No. 3 to Series 2017-VF1 Indenture Supplement, dated as of August 9, 2021, by and among PMT ISSUER TRUST – FSMR, Citibank, N.A., PennyMac Corp. and Credit Suisse First Boston Mortgage Capital, LLC.	10-Q	November 5, 2021

10.46	Amendment No. 4 to Series 2017-VF1 Indenture Supplement, dated as of February 8, 2022, by and among PMT ISSUER TRUST – FSMR, Citibank, N.A., PennyMac Corp. and Credit Suisse First Boston Mortgage Capital, LLC.	10-Q	May 6, 2022
10.47	Series 2018-FT1 Indenture Supplement, dated as of April 25, 2018 to Base Indenture dated as of December 20, 2017, by and among PMT ISSUER TRUST – FMSR, Citibank, N.A., PennyMac Corp., and Credit Suisse First Boston Mortgage Capital LLC.	8-K	April 30, 2018
10.48	Series 2021-FT1 Indenture Supplement, dated as of March 30, 2021, to Base Indenture dated as of December 20, 2017, by and among PMT ISSUER TRUST – FMSR, Citibank, N.A., PennyMac Corp. and Credit Suisse First Boston Mortgage Capital LLC.	8-K	March 31, 2021
10.49	Series 2022-FT1 Indenture Supplement to Base Indenture, dated as of June 28, 2022, by and among PMT ISSUER TRUST – FMSR, Citibank, N.A., PennyMac Corp., and Credit Suisse First Boston Mortgage Capital LLC.	8-K	July 5, 2022
10.50	Master Repurchase Agreement, dated as of December 20, 2017, by and among PennyMac Corp., PMT ISSUER TRUST-FMSR and PennyMac Mortgage Investment Trust.	8-K	December 27, 2017
10.51	Guaranty, dated as of December 20, 2017, by PennyMac Mortgage Investment Trust in favor of PMT ISSUER TRUST – FMSR.	8-K	December 27, 2017
10.52	Master Repurchase Agreement, dated as of December 20, 2017, by and among PennyMac Holdings, LLC, PennyMac Corp. and PennyMac Mortgage Investment Trust.	8-K	December 27, 2017
10.53	Guaranty, dated as of December 20, 2017, by PennyMac Mortgage Investment Trust in favor of PennyMac Corp.	8-K	December 27, 2017
10.54	Subordination, Acknowledgement and Pledge Agreement, dated as of December 20, 2017, between PMT ISSUER TRUST – FMSR and PennyMac Holdings, LLC.	8-K	December 27, 2017
10.55	Amended and Restated Master Repurchase Agreement, dated as of June 29, 2018, by and among Credit Suisse First Boston Mortgage Capital LLC and PennyMac Corp.	8-K	July 6, 2018
10.56	Joint Amendment No. 1 to the Series 2017-VF1 Repurchase Agreement and Amendment No. 2 to the Pricing Side Letter, dated as of August 4, 2020, among PennyMac Mortgage Investment Trust, PennyMac Corp., Credit Suisse First Boston Mortgage Capital LLC, and Credit Suisse AG, Cayman Islands Branch and Citibank, N.A.	8-K	August 10, 2020
10.57 ^	Joint Amendment No. 2 to the Series 2017-VF1 Repurchase Agreement and Amendment No. 5 to the Pricing Side Letter, dated as of August 9, 2021 by and among Credit Suisse First Boston Mortgage Capital, LLC, Credit Suisse AG, Cayman Islands Branch, Citibank, N.A., PennyMac Corp. and PennyMac Mortgage Investment Trust.	8-K	November 5, 2021
10.58^	Amendment No. 3 to the Series 2017-VF1 Repurchase Agreement, dated as of January 3, 2022, by and among Credit Suisse First Boston Mortgage Capital, LLC, Credit Suisse AG, Cayman Islands Branch, Citibank, N.A., PennyMac Corp. and PennyMac Mortgage Investment Trust.	10-K	February 25, 2022
10.59	Joint Amendment No. 4 to the Series 2017-VF1 Repurchase Agreement and Amendment No. 7 to the Pricing Side Letter, dated as of March 30, 2022 by and among Credit Suisse First Boston Mortgage Capital, LLC, Credit Suisse AG, Cayman Islands Branch, Citibank, N.A., PennyMac Corp. and PennyMac Mortgage Investment Trust.	10-Q	May 6, 2022
10.60	Joint Amendment No. 5 to the Series 2017-VF1 Repurchase Agreement and Amendment No. 9 to the Pricing Side Letter, dated as of June 30, 2022 by and among Credit Suisse First Boston Mortgage Capital, LLC, Credit Suisse AG, Cayman Islands Branch, Citibank, N.A., PennyMac Corp. and PennyMac Mortgage Investment Trust.	10-Q	August 5, 2022

10.61	Joint Amendment No. 6 to the Series 2017-VF1 Repurchase Agreement and Amendment No. 1 to the Pricing Side Letter, dated as of September 30, 2022 by and among Credit Suisse First Boston Mortgage Capital, LLC, Credit Suisse AG, Cayman Islands Branch, PennyMac Corp. and PennyMac Mortgage Investment Trust.	10-Q	November 3, 2022
10.62	Amended and Restated Guaranty, dated as of June 29, 2018 by PennyMac Mortgage Investment Trust in favor of Credit Suisse AG, Cayman Island Branch and Citibank, N.A.	8-K	July 6, 2018
21.1	Subsidiaries of PennyMac Mortgage Investment Trust.	*	
23.1	Consent of Deloitte & Touche LLP.	*	
31.1	Certification of David A. Spector pursuant to Rule 13a-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	*	
31.2	Certification of Daniel S. Perotti pursuant to Rule 13a-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	*	
32.1**	Certification of David A. Spector pursuant to Rule 13a-14(b) and 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	**	
32.2**	Certification of Daniel S. Perotti pursuant to Rule 13a-14(b) and 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	**	
101	Interactive data files pursuant to Rule 405 of Regulation S-T, formatted in Inline XBRL: (i) the Consolidated Balance Sheets as of December 31, 2022 and December 31, 2021 (ii) the Consolidated Statements of income for the years ended December 31, 2022 and December 31, 2021, (iii) the Consolidated Statements of Changes in Stockholders' Equity for the years ended December 31, 2022 and December 31, 2021, (iv) the Consolidated Statements of Cash Flows for the years ended December 31, 2022 and December 31, 2021 and (v) the Notes to the Consolidated Financial Statements.	*	
101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because XBRL tags are embedded within the Inline XBRL document.	*	
101.SCH	Inline XBRL Taxonomy Extension Schema Document	*	
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document	*	
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document	*	
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document	*	
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	*	
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)		

* Filed herewith

** The certifications attached hereto as Exhibits 32.1 and 32.2 are furnished to the SEC pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 and shall not be deemed filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933, except as shall be expressly set forth by specific reference in such filing.

† Indicates management contract or compensatory plan or arrangement

^ Portions of the exhibit have been redacted.

Item 16. Form 10-K Summary

None.

PENNYMAC MORTGAGE INVESTMENT TRUST AND SUBSIDIARIES

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

December 31, 2022

Report of Independent Registered Public Accounting Firm (PCAOB ID No. 34) F-2

Financial Statements:

- Consolidated Balance Sheets F-4
- Consolidated Statements of Operations F-6
- Consolidated Statements of Changes in Shareholders' Equity F-7
- Consolidated Statements of Cash Flows F-8
- Notes to Consolidated Financial Statements F-10

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Trustees of
PennyMac Mortgage Investment Trust

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of PennyMac Mortgage Investment Trust and subsidiaries (the "Company") as of December 31, 2022 and 2021, the related consolidated statements of operations, changes in shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2022, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 24, 2023, expressed an unqualified opinion on the Company's internal control over financial reporting.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current-period audit of the financial statements that were communicated or required to be communicated to the audit committee and that (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Mortgage Servicing Rights ("MSRs") — Refer to Notes 3, 7 and 12 to the financial statements

Critical Audit Matter Description

The Company accounts for MSRs at fair value and categorizes its MSRs as "Level 3" fair value assets. The Company uses a discounted cash flow approach to estimate the fair value of MSRs. The key inputs used in the estimation of the fair value of MSRs include the applicable pricing spread (a component of the discount rate), the prepayment rates of the underlying loans ("prepayment speed") and the annual per-loan cost of servicing, all of which are unobservable. Significant changes to any of those inputs in isolation could result in a significant change in the MSRs' fair value measurement.

We identified the pricing spread and prepayment speed assumptions used in the valuation of MSRs as a critical audit matter because of the significant judgments made by management in determining these assumptions. Auditing these assumptions required a high degree of auditor judgment and an increased extent of effort, including the need to involve our fair value specialists, to evaluate the reasonableness of management's estimates and assumptions related to selection of the pricing spread and prepayment speed.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the pricing spread and prepayment speed assumptions used by the Company to estimate the fair value of MSRs included the following, among others:

- We tested the design and operating effectiveness of internal controls over determining the fair value of MSRs, including those over the determination of the pricing spread and prepayment speed assumptions
- With the assistance of our fair value specialists, we evaluated the reasonableness of management's prepayment speed assumptions by preparing a value for comparison to the Company's valuation
- We evaluated the reasonableness of management's prepayment speed assumptions of the underlying mortgage loans, by comparing historical prepayment speed assumptions to actual results
- We tested management's process for determining the pricing spread assumptions by comparing them to the implied spreads within market transactions and other third-party information used by management

Credit Risk Transfer Agreements and Credit Risk Transfer Strip Assets and Liabilities — Refer to Notes 2, 3, 6, 7 and 11 to the financial statements

Critical Audit Matter Description

The Company invests in credit risk transfer ("CRT") arrangements whereby it sells pools of recently originated mortgage loans into Fannie Mae-guaranteed securitizations while retaining a portion of the credit risk underlying such mortgage loans. The Company retains an interest-only ("IO") ownership interest in such mortgage loans and an obligation to absorb credit losses arising from such mortgage loans ("Recourse Obligations"). The Company placed deposits securing CRT arrangements into subsidiary trust entities to secure its Recourse Obligations. The deposits securing CRT arrangements represent the Company's maximum contractual exposure to claims under its Recourse Obligations and is the sole source of settlement of losses. Together, the Recourse Obligations and the IO ownership interest comprise the CRT agreements and CRT strip assets and liabilities.

The Company accounts for CRT agreements and CRT strip assets and liabilities at fair value and categorizes them as "Level 3" fair value assets and liabilities. The Company determines the fair value of the CRT agreements and CRT strip assets and liabilities based on indications of fair value provided to the Company by nonaffiliated brokers for the certificates representing the beneficial interest in the CRT agreements and CRT strip assets and liabilities and the related deposits. The Company applies adjustments to the indications of fair value of the CRT strip assets and liabilities when contractual restrictions limit the Company's ability to sell them. The fair value of the CRT agreements and CRT strip assets and liabilities are estimated by deducting the balance of the deposits securing the CRT arrangements from the estimated fair value of the certificates.

We identified the valuation of the CRT agreements and CRT strip assets and liabilities as a critical audit matter. Auditing the related fair values, particularly developing the discount rate used in the valuation required a high degree of auditor judgment and an increased extent of effort, including the need to involve our fair value specialists.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the fair value of the CRT agreements and CRT strip assets and liabilities included the following, among others:

- We tested the design and operating effectiveness of internal controls over the evaluation and approval of the fair value provided by nonaffiliated brokers.
- With the assistance of our fair value specialists, we developed independent fair value estimates of the CRT agreements and CRT strip assets and liabilities, which included discount rate assumptions, and compared our estimates to the Company's fair value.

/s/ Deloitte & Touche LLP

Los Angeles, California
February 24, 2023

We have served as the Company's auditor since 2009.

PENNYMAC MORTGAGE INVESTMENT TRUST AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

	December 31, 2022	December 31, 2021
	(in thousands, except share information)	
ASSETS		
Cash	$ 111,866	$ 58,983
Short-term investments at fair value	252,271	167,999
Mortgage-backed securities at fair value pledged to creditors	4,462,601	2,666,768
Loans acquired for sale at fair value ($1,801,368 and $4,059,479 pledged to creditors, respectively)	1,821,933	4,171,025
Loans at fair value ($1,510,148 and $1,564,924 pledged to creditors, respectively)	1,513,399	1,568,726
Derivative assets ($1,262 and $19,627 pledged to creditors, respectively)	84,940	34,238
Deposits securing credit risk transfer arrangements pledged to creditors	1,325,294	1,704,911
Mortgage servicing rights at fair value ($3,962,820 and $2,863,544 pledged to creditors, respectively)	4,012,737	2,892,855
Servicing advances ($100,888 and $93,455 pledged to creditors, respectively)	197,972	204,951
Due from PennyMac Financial Services, Inc.	3,560	15,953
Other ($3,297 and $7,293 pledged to creditors, respectively)	134,991	286,299
Total assets	$ 13,921,564	$ 13,772,708
LIABILITIES		
Assets sold under agreements to repurchase	$ 6,616,528	$ 6,671,890
Mortgage loan participation purchase and sale agreements	—	49,988
Notes payable secured by credit risk transfer and mortgage servicing assets	2,804,028	2,471,961
Exchangeable senior notes	546,254	502,459
Asset-backed financing of variable interest entities at fair value	1,414,955	1,469,999
Interest-only security payable at fair value	21,925	10,593
Derivative and credit risk transfer strip liabilities at fair value	167,226	42,206
Accounts payable and accrued liabilities	160,212	96,156
Due to PennyMac Financial Services, Inc.	36,372	40,091
Income taxes payable	151,778	9,598
Liability for losses under representations and warranties	39,471	40,249
Total liabilities	11,958,749	11,405,190
Commitments and contingencies ─ Note 17		
SHAREHOLDERS' EQUITY		
Preferred shares of beneficial interest, $0.01 par value per share, authorized 100,000,000 shares, issued and outstanding 22,400,000, liquidation preference $560,000,000	541,482	541,482
Common shares of beneficial interest—authorized, 500,000,000 common shares of $0.01 par value; issued and outstanding, 88,888,889 and 94,897,255 common shares, respectively	889	949
Additional paid-in capital	1,947,266	2,081,757
Accumulated deficit	(526,822)	(256,670)
Total shareholders' equity	1,962,815	2,367,518
Total liabilities and shareholders' equity	$ 13,921,564	$ 13,772,708

The accompanying notes are an integral part of these consolidated financial statements.

PENNYMAC MORTGAGE INVESTMENT TRUST AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

Assets and liabilities of consolidated variable interest entities ("VIEs") included in total assets and liabilities (the assets of each VIE can only be used to settle liabilities of that VIE) are summarized below:

	December 31, 2022	December 31, 2021
	(in thousands)	
ASSETS		
Loans at fair value	$ 1,509,942	$ 1,564,565
Derivative assets at fair value	1,262	19,627
Deposits securing credit risk transfer arrangements	1,325,294	1,704,911
Other—interest receivable	4,343	3,701
	$ 2,840,841	$ 3,292,804
LIABILITIES		
Asset-backed financings at fair value	$ 1,414,955	$ 1,469,999
Derivative and credit risk transfer strip liabilities at fair value	160,553	27,500
Interest-only security payable at fair value	21,925	10,593
Accounts payable and accrued liabilities—interest payable	4,343	3,701
	$ 1,601,776	$ 1,511,793

The accompanying notes are an integral part of these consolidated financial statements.

PENNYMAC MORTGAGE INVESTMENT TRUST AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS

	Year ended December 31,		
	2022	2021	2020
	(in thousands, except per common share amounts)		
Net investment income			
Net loan servicing fees:			
From nonaffiliates			
Contractually specified	$ 625,210	$ 526,245	$ 406,060
Other	26,041	69,101	56,457
	651,251	595,346	462,517
Change in fair value of mortgage servicing rights	449,435	(337,186)	(938,937)
Mortgage servicing rights hedging results	(204,879)	(345,041)	601,743
	895,807	(86,881)	125,323
From PennyMac Financial Services, Inc.	13,744	50,859	28,373
	909,551	(36,022)	153,696
Net (losses) gains on investments and financings:			
From nonaffiliates	(658,787)	302,428	(148,156)
From PennyMac Financial Services, Inc.	—	1,651	(22,729)
	(658,787)	304,079	(170,885)
Net gains on loans acquired for sale:			
From nonaffiliates	20,724	80,801	368,885
From PennyMac Financial Services, Inc.	4,968	6,472	11,037
	25,692	87,273	379,922
Loan origination fees	52,085	170,672	147,272
Net interest expense:			
Interest income:			
From nonaffiliates	383,794	193,959	213,717
From PennyMac Financial Services, Inc.	—	1,280	8,418
	383,794	195,239	222,135
Interest expense:			
To nonaffiliates	410,420	304,350	267,445
To PennyMac Financial Services, Inc.	—	387	3,325
	410,420	304,737	270,770
Net interest expense	(26,626)	(109,498)	(48,635)
Results of real estate acquired in settlement of loans	496	3,075	5,465
Other	1,360	718	2,516
Net investment income	303,771	420,297	469,351
Expenses			
Earned by PennyMac Financial Services, Inc.:			
Loan servicing fees	81,915	80,658	67,181
Loan fulfillment fees	67,991	178,927	222,200
Management fees	31,065	37,801	34,538
Loan origination	12,036	28,792	26,437
Professional services	9,569	11,148	6,405
Safekeeping	8,201	9,087	7,090
Compensation	5,941	4,000	3,890
Loan collection and liquidation	5,396	11,279	10,363
Other	18,570	13,944	11,517
Total expenses	240,684	375,636	389,621
Income before provision for (benefit from) income taxes	63,087	44,661	79,730
Provision for (benefit from) income taxes	136,374	(12,193)	27,357
Net (loss) income	(73,287)	56,854	52,373
Dividends on preferred shares	41,819	30,891	24,938
Net (loss) income attributable to common shareholders	$ (115,106)	$ 25,963	$ 27,435
(Loss) earnings per common share			
Basic	$ (1.26)	$ 0.26	$ 0.27
Diluted	$ (1.26)	$ 0.26	$ 0.27
Weighted average common shares outstanding			
Basic	91,434	97,402	99,373
Diluted	91,434	97,402	99,373

The accompanying notes are an integral part of these consolidated financial statements.

PENNYMAC MORTGAGE INVESTMENT TRUST AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY

	Preferred shares		Common shares			Retained earnings (accumulated deficit)	Total
	Number of shares	Amount	Number of shares	Par value	Additional paid-in capital		
	(in thousands, except per share amounts)						
Balance at December 31, 2019	12,400	$299,707	100,182	$ 1,002	$2,127,889	$ 22,317	$2,450,915
Net income	—	—	—	—	—	52,373	52,373
Share-based compensation	—	—	207	2	663	—	665
Issuance of common shares	—	—	241	2	5,652	—	5,654
Issuance cost relating to common shares	—	—	—	—	(57)	—	(57)
Dividends:							
Preferred shares	—	—	—	—	—	(24,945)	(24,945)
Common shares ($1.52 per share)	—	—	—	—	—	(150,479)	(150,479)
Repurchase of common shares	—	—	(2,767)	(27)	(37,240)	—	(37,267)
Balance at December 31, 2020	12,400	$299,707	97,863	$ 979	$2,096,907	$ (100,734)	$2,296,859
Net income	—	—	—	—	—	56,854	56,854
Share-based compensation	—	—	133	1	1,688	—	1,689
Issuance of exchangeable notes with cash conversion option	—	—	—	—	39,986	—	39,986
Issuance of preferred shares	10,000	250,000	—	—	—	—	250,000
Issuance costs relating to preferred shares	—	(8,225)	—	—	—	—	(8,225)
Dividends:							
Preferred shares	—	—	—	—	—	(30,146)	(30,146)
Common shares ($1.88 per share)	—	—	—	—	—	(182,644)	(182,644)
Repurchase of common shares	—	—	(3,099)	(31)	(56,824)	—	(56,855)
Balance at December 31, 2021	22,400	$541,482	94,897	$ 949	$2,081,757	$ (256,670)	$2,367,518
Cumulative effect of adoption of ASU 2020-06	—	—	—	—	(50,347)	9,394	(40,953)
Balance at January 1, 2022	22,400	541,482	94,897	949	2,031,410	(247,276)	2,326,565
Net loss	—	—	—	—	—	(73,287)	(73,287)
Share-based compensation	—	—	86	1	3,787	—	3,788
Dividends:							
Preferred shares	—	—	—	—	—	(41,819)	(41,819)
Common shares ($1.81 per share)	—	—	—	—	—	(164,440)	(164,440)
Repurchase of common shares	—	—	(6,094)	(61)	(87,931)	—	(87,992)
Balance at December 31, 2022	22,400	$541,482	88,889	$ 889	$1,947,266	$ (526,822)	$1,962,815

The accompanying notes are an integral part of these consolidated financial statements.

PENNYMAC MORTGAGE INVESTMENT TRUST AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Cash flows from operating activities			
Net (loss) income	$ (73,287)	$ 56,854	$ 52,373
Adjustments to reconcile net (loss) income to net cash provided by (used in) operating activities:			
Change in fair value of mortgage servicing rights	(449,435)	337,186	938,937
Mortgage servicing rights hedging results	204,879	345,041	(601,743)
Net losses (gains) on investments and financings	658,787	(304,079)	170,885
Net gains on loans acquired for sale	(25,692)	(87,273)	(379,922)
Capitalization of interest and fees on loans at fair value	—	(251)	—
Accrual of interest on excess servicing spread purchased from PennyMac Financial Services, Inc.	—	(1,280)	(8,418)
Accrual of unearned discounts and amortization of purchase premiums on mortgage-backed securities, loans at fair value, and asset-backed financings	(9,815)	9,803	24,712
Amortization of debt issuance costs	16,563	27,156	18,987
Results of real estate acquired in settlement of loans	(496)	(3,075)	(5,465)
Share-based compensation expense	4,310	2,419	2,294
Gain on early extinguishment of debt	—	—	(1,738)
Purchase of loans acquired for sale from nonaffiliates	(87,844,404)	(181,370,296)	(167,768,999)
Purchase of loans acquired for sale from PennyMac Financial Services, Inc.	(298,862)	—	(2,248,896)
Sale to nonaffiliates and repayment of loans acquired for sale	39,077,156	110,919,477	106,306,805
Sale of loans acquired for sale to PennyMac Financial Services, Inc.	50,575,617	67,851,630	63,618,185
Repurchase of loans subject to representation and warranties	(92,294)	(105,627)	(72,493)
Decrease (increase) in servicing advances	6,979	(83,219)	(73,129)
Decrease (increase) in due from PennyMac Financial Services, Inc.	12,393	(7,744)	(5,244)
(Increase) decrease in other assets	(189,551)	(318,237)	604,211
Increase (decrease) in accounts payable and accrued liabilities	73,162	(27,320)	34,836
(Decrease) increase in due to PennyMac Financial Services, Inc.	(3,719)	(46,914)	38,406
Settlement of repurchase agreement derivatives	—	—	5,328
Increase (decrease) in income taxes payable	142,180	(13,965)	21,744
Net cash provided by (used in) operating activities	1,784,471	(2,819,714)	671,656
Cash flows from investing activities			
Net increase in short-term investments	(84,272)	(40,704)	(36,459)
Purchase of mortgage-backed securities	(3,718,093)	(2,232,923)	(2,332,096)
Sale and repayment of mortgage-backed securities	1,358,199	1,696,400	3,022,336
Purchase of subordinate mortgage pass-through security associated with consolidated variable interest entity	—	(28,815)	—
Repayment and sale of loans at fair value	159,647	122,260	114,553
Repurchase of loans at fair value	—	—	(1,058)
Settlement and repayment of excess servicing spread receivable from PennyMac Financial Services, Inc.	—	134,624	32,377
Net settlement of derivative financial instruments	25,489	3,863	(8,029)
Settlement of firm commitment to purchase credit risk transfer securities	—	—	128,786
Deposit of cash securing credit risk transfer arrangements	—	—	(1,700,000)
Distribution from credit risk transfer arrangements	478,388	1,300,061	871,485
Transfer of mortgage servicing rights relating to delinquent loans to Agency	(104)	—	—
Sale of mortgage servicing rights	—	—	7
Sale of real estate acquired in settlement of loans	7,999	17,096	43,505
(Increase) decrease in margin deposits	(94,727)	121,151	(150,774)
Net cash (used in) provided by investing activities	(1,867,474)	1,093,013	(15,367)

The accompanying notes are an integral part of these consolidated financial statements.

Statements continued on the next page

PENNYMAC MORTGAGE INVESTMENT TRUST AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS (CONTINUED)

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Cash flows from financing activities			
Sale of assets under agreements to repurchase	121,017,757	193,729,139	190,821,908
Repurchase of assets sold under agreements to repurchase	(121,073,659)	(193,372,527)	(191,152,716)
Issuance of mortgage loan participation purchase and sale agreements	3,742,870	4,172,863	5,159,029
Repayment of mortgage loan participation purchase and sale agreements	(3,792,858)	(4,139,725)	(5,142,178)
Issuance of notes payable secured by credit risk transfer and mortgage servicing assets	944,999	2,022,127	850,000
Repayment of notes payable secured by credit risk transfer and mortgage servicing assets	(611,943)	(1,472,508)	(622,549)
Issuance of exchangeable senior notes	—	345,000	—
Repayment of exchangeable senior notes	—	—	(248,262)
Issuance of asset-backed financings	382,423	690,550	—
Repayment of asset-backed financings	(155,654)	(115,137)	(107,333)
Repurchase of assets sold to PennyMac Financial Services, Inc. under agreement to repurchase	—	(80,862)	(26,650)
Payment of debt issuance costs	(14,170)	(21,007)	(23,990)
Payment of dividends to preferred shareholders	(41,819)	(30,146)	(24,945)
Payment of dividends to common shareholders	(173,546)	(183,973)	(151,580)
Issuance of preferred shares	—	250,000	—
Payment of issuance costs related to preferred shares	—	(8,225)	—
Payment of vested share-based compensation tax withholdings	(522)	(730)	(1,629)
Issuance of common shares	—	—	5,654
Payment of issuance costs related to common shares	—	—	(57)
Payment of contingent underwriting fees payable related to common shares	—	(4)	(76)
Repurchase of common shares	(87,992)	(56,855)	(37,267)
Net cash provided by (used in) financing activities	135,886	1,727,980	(702,641)
Net increase (decrease) in cash	52,883	1,279	(46,352)
Cash at beginning of year	58,983	57,704	104,056
Cash at end of year	$ 111,866	$ 58,983	$ 57,704
Supplemental cash flow information			
(Refunds) payments, net:			
Income taxes	$ (5,806)	$ 1,771	$ 5,613
Interest	$ 368,671	$ 298,862	$ 290,225
Non-cash investing activities:			
Retention of subordinate mortgage-backed securities in loan securitizations	$ 23,485	$ 42,256	$ —
Recognition of loans at fair value resulting from initial consolidation of variable interest entities	$ 405,908	$ 1,542,333	$ —
Recombination of MSRs to loans at fair value resulting from initial consolidation of variable interest entity	$ —	$ 9,824	$ —
Transfer of loans and advances to real estate acquired in settlement of loans	$ —	$ —	$ 1,166
Receipt of excess servicing spread pursuant to recapture agreement with PennyMac Financial Services, Inc.	$ —	$ 557	$ 2,093
Transfer of firm commitment to purchase CRT securities to investment securities	$ —	$ —	$ 178,501
Receipt of mortgage servicing rights as proceeds from sales of loans	$ 670,343	$ 1,484,629	$ 1,158,475
Non-cash financing activities:			
Recognition of asset-backed financings resulting from initial consolidation of VIEs	$ 382,423	$ 1,471,262	$ —
Dividends declared, not paid	$ 35,658	$ 44,764	$ 46,093

The accompanying notes are an integral part of these consolidated financial statements.

Note 1—Organization

PennyMac Mortgage Investment Trust ("PMT" or the "Company") is a specialty finance company, which, through its subsidiaries (all of which are wholly-owned), invests primarily in residential mortgage-related assets. The Company operates in four segments: credit sensitive strategies, interest rate sensitive strategies, correspondent production, and corporate:

- The credit sensitive strategies segment represents the Company's investments in credit risk transfer ("CRT") arrangements, including CRT agreements ("CRT Agreements") and other CRT securities (together, "CRT arrangements"), subordinate mortgage-backed securities ("MBS"), distressed loans and real estate.
- The interest rate sensitive strategies segment represents the Company's investments in mortgage servicing rights ("MSRs"), excess servicing spread ("ESS") purchased from PennyMac Financial Services, Inc. ("PFSI"), a publicly-traded mortgage banking and investment management company, Agency and senior non-Agency MBS and the related interest rate hedging activities.
- The correspondent production segment represents the Company's operations aimed at serving as an intermediary between lenders and the capital markets by purchasing, pooling and reselling newly originated prime credit quality loans either directly or in the form of MBS, using the services of PNMAC Capital Management, LLC ("PCM") and PennyMac Loan Services, LLC ("PLS"), both subsidiaries of PFSI.

  The Company primarily sells the loans it acquires through its correspondent production activities to government-sponsored entities ("GSEs") such as the Federal National Mortgage Association ("Fannie Mae") and the Federal Home Loan Mortgage Corporation ("Freddie Mac") or to PLS for sale into securitizations guaranteed by the Government National Mortgage Association ("Ginnie Mae"). Fannie Mae, Freddie Mac and Ginnie Mae are each referred to as an "Agency" and, collectively, as the "Agencies."
- The corporate segment includes management fees, corporate expense amounts and certain interest income.

The Company conducts substantially all of its operations and makes substantially all of its investments through its subsidiary, PennyMac Operating Partnership, L.P. (the "Operating Partnership"), and the Operating Partnership's subsidiaries. A wholly-owned subsidiary of the Company is the sole general partner, and the Company is the sole limited partner, of the Operating Partnership.

The Company believes that it qualifies, and has elected to be taxed, as a real estate investment trust ("REIT") under the Internal Revenue Code of 1986, as amended. To maintain its tax status as a REIT, the Company is required to distribute at least 90% of its taxable income in the form of qualifying distributions to shareholders.

Note 2—Concentration of Risks

As discussed in Note 1 – *Organization* above, PMT's operations and investing activities are centered in residential mortgage-related assets, including CRT arrangements, MBS and MSRs. CRT arrangements and subordinate MBS are more sensitive to borrower credit performance than other mortgage-related investments such as traditional loans and Agency MBS. MSRs are sensitive to changes in prepayment rate activity and expectations.

Credit Risk

Note 6 – *Variable Interest Entities* details the Company's investments in CRT arrangements whereby the Company sold pools of recently-originated loans into Fannie Mae-guaranteed securitizations while either:

- through May 2018, entering into CRT Agreements, whereby it retained a portion of the credit risk underlying such loans as part of the retention of an interest-only ("IO") ownership interest in such loans and an obligation to absorb scheduled credit losses arising from such loans reaching a specific number of days delinquent; or
- from June 2018 through 2020, entering into firm commitments to purchase and purchasing CRT securities and, upon purchase of such securities, holding CRT strips representing an IO ownership interest that absorbs realized credit losses arising from such loans. The obligation to absorb the losses for both CRT Agreements and CRT securities represents the Company's recourse obligations relating to the CRT arrangements ("Recourse Obligations").

The Company also invests in subordinate MBS which are among the first beneficial interests in those securitizations to absorb credit losses on the underlying loans.

The Company's retention of credit risk through its investment in CRT arrangements and subordinate MBS subjects it to risks associated with delinquency and foreclosure similar to the risks of loss associated with owning the underlying loans, which is greater than the risk of loss associated with selling such loans to the GSEs or other entities without the retention of such credit risk.

CRT Agreements are structured such that loans that reach a specific number of days delinquent (including loans in forbearance which also includes those subject to the forbearance provided in the Coronavirus Aid, Relief, and Economic Security Act ("CARES Act")) trigger losses chargeable to the CRT Agreements based on the size of the loan and a contractual schedule of loss severity. Therefore, the risks associated with delinquency and foreclosure may in some instances be greater than the risks associated with owning the related loans because the structure of the CRT Agreements provides that the Company may be required to absorb losses in the event of delinquency or foreclosure even when there is ultimately no loss realized with respect to such loans (e.g., as a result of a borrower's re-performance). In contrast, the structure of the Company's investment in other CRT securities requires PMT to absorb losses only when the reference loans realize actual losses.

Fair Value Risk

The Company is exposed to fair value risk in addition to the risks specific to credit and, as a result of prevailing market conditions or the economy generally, may be required to recognize losses associated with adverse changes to the fair value of its investments in MSRs, CRT arrangements, and MBS:

- MSRs are generally subject to loss in fair value when prepayment speeds increase as a result of decreasing mortgage interest rates, when estimates of cost to service the underlying loans increase or when the returns demanded by market participants increase;
- The fair value of CRT arrangements and subordinate MBS is sensitive to market perceptions of future credit performance of the underlying loans as well as the actual credit performance of such loans and to the returns required by market participants to hold such investments; and
- The fair value of Agency and senior non-Agency MBS is sensitive to changes in market interest rates.

Note 3—Significant Accounting Policies

PMT's significant accounting policies are summarized below.

Basis of Presentation

The Company's consolidated financial statements have been prepared in compliance with accounting principles generally accepted in the United States ("GAAP") as codified in the Financial Accounting Standards Board's ("FASB") *Accounting Standards Codification* ("ASC").

Use of Estimates

Preparation of financial statements in compliance with GAAP requires the Company to make estimates and judgments that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, and revenues and expenses during the reporting period. Actual results will likely differ from those estimates.

Consolidation

The consolidated financial statements include the accounts of PMT and all wholly-owned subsidiaries. PMT has no significant equity method or cost-basis investments. Intercompany accounts and transactions are eliminated upon consolidation. The Company also consolidates the assets and liabilities included in certain Variable Interest Entities ("VIEs") discussed below.

Variable Interest Entities

The Company enters into various types of on- and off-balance sheet transactions with special purpose entities ("SPEs"), which are trusts that are established for a limited purpose. Generally, SPEs are formed in connection with securitization transactions. In a securitization transaction, the Company transfers assets on its balance sheet to an SPE, which then issues various forms of beneficial interests in those assets to investors. In a securitization transaction, the Company typically receives a combination of cash and beneficial interests in the SPE in exchange for the assets transferred by the Company.

SPEs are generally VIEs. A VIE is an entity having either a total equity investment at risk that is insufficient to finance its activities without additional subordinate financial support or whose equity investors at risk lack the ability to control the entity's activities. Variable interests are investments or other interests that will absorb portions of a VIE's expected losses or receive portions of the VIE's expected residual returns. Expected residual returns represent the expected positive variability in the fair value of a VIE's net assets.

PMT consolidates the assets and liabilities of VIEs of which the Company is the primary beneficiary. The primary beneficiary is the party that has both the power to direct the activities that most significantly impact the economic performance of the VIE and holds a variable interest that could potentially be significant to the VIE. To determine whether a variable interest the Company holds could potentially be significant to the VIE, the Company considers both qualitative and quantitative factors regarding the nature, size and form of its involvement with the VIE. The Company evaluates whether it is the primary beneficiary of a VIE on an ongoing basis.

The Company also evaluates the securitization trust holding the assets to determine whether the entity is a VIE and whether the Company is the primary beneficiary and therefore is required to consolidate the securitization trust.

Credit Risk Transfer Arrangements

The Company holds CRT arrangements with Fannie Mae, pursuant to which PennyMac Corp. ("PMC"), through subsidiary trust entities, sold pools of loans into Fannie Mae-guaranteed loan securitizations while retaining Recourse Obligations for credit losses and IO ownership interests in such loans. Loans subject to the CRT arrangements were transferred by PMC to subsidiary trust entities which sold the loans into Fannie Mae loan securitizations. Transfers of loans subject to CRT arrangements received sale accounting treatment.

The Company has concluded that its subsidiary trust entities holding its CRT arrangements are VIEs and the Company is the primary beneficiary of the VIEs as it is the holder of the primary beneficial interests which absorb the variability of the trusts' results of operations. Consolidation of the VIEs results in the inclusion on the Company's consolidated balance sheet of the fair value of the Recourse Obligations, and retained IO ownership interests in the form of derivative and interest-only strip assets and liabilities, the deposits pledged to fulfill the Recourse Obligations and an interest only security payable at fair value. The deposits represent the Company's maximum contractual exposure to claims under its Recourse Obligations and are the sole source of settlement of losses under the CRT arrangements. Gains and losses on the derivative and interest-only strip assets and liabilities related to CRT arrangements are included in *Net (losses) gains on investments and financings* in the consolidated statements of operations.

Subordinate Mortgage-Backed Securities

The Company retains or purchases subordinate MBS backed by loans secured by investment properties in transactions sponsored by PMC or a nonaffiliate. Subordinate MBS provide the Company with a higher yield than senior securities. However, the Company retains credit risk in the subordinate MBS since they are the first securities to absorb credit losses relating to the underlying loans.

Cash inflows from the loans underlying subordinate MBS are distributed to investors and service providers in accordance with the contractual priority of payments and, as such, most of these inflows must be directed first to service and repay the senior certificates. The rights of holders of the subordinate certificates to receive distributions of principal and/or interest, as applicable, are subordinate to the rights of holders of the senior certificates. After the senior certificates are repaid, substantially all cash inflows will be directed to the subordinate certificates, including those held by the Company, until they are fully repaid.

The Company has concluded that the trusts holding the assets underlying certain of these transactions are VIEs. The Company has concluded that it is the primary beneficiary of the VIEs as it has the power, through PLS, in its role as the servicer or sub-servicer of the loans, to direct the activities of the trusts that most significantly impact the trusts' economic performance and, as a holder of subordinate securities, that PMT is exposed to losses that could potentially be significant to the VIEs. Therefore, PMT consolidates the VIEs where it holds subordinate interests and services the majority of the loans held in the VIEs.

Jumbo Loan Securitization Transaction

On September 30, 2013, the Company completed a securitization transaction in which a VIE issued $537.0 million in unpaid principal balance ("UPB") of certificates backed by fixed-rate prime jumbo loans at a 3.9% weighted cost.

The securities issued by the VIE are backed by the expected cash flows from its underlying fixed-rate prime jumbo loans. Cash inflows from these fixed-rate prime jumbo loans are distributed to investors and service providers in accordance with the contractual priority of payments and, as such, most of these inflows must be directed first to service and repay the senior certificates. After the senior certificates are repaid, substantially all cash inflows will be directed to the subordinate certificates until fully repaid and, thereafter, to the residual interest in the trust that the Company owns.

The Company holds beneficial interests in the securitization transaction, including subordinate certificates and residual interests issued by the VIE. The Company retains credit risk in the securitization because the Company's beneficial interests include the most subordinate interests in the securitized assets, which are the first beneficial interests to absorb credit losses on those assets. The Company expects that any credit losses in the pools of securitized assets will likely be limited to the Company's subordinate and residual interests. The Company has no obligation to repurchase or replace securitized assets that subsequently become delinquent or are otherwise in default other than pursuant to breaches of representations and warranties.

The VIE is consolidated by PMT as the Company determined that it is the primary beneficiary of the VIE. The Company concluded that it is the primary beneficiary of the VIE as it has the power, through its affiliate, PLS, in its role as servicer of the loans, to direct the activities of the trust that most significantly impact the trust's economic performance and the subordinate and residual interest trust certificates expose PMT to losses and returns that could potentially be significant to the VIE.

For financial reporting purposes, the loans owned by the consolidated VIEs are included in *Loans at fair value* and the securities issued to third parties by the consolidated VIEs are included in *Asset-backed financings at fair value* on the Company's consolidated balance sheets. Both the *Loans at fair value* and the *Asset-backed financings at fair value* included in the consolidated VIEs are also included in a separate statement following the Company's consolidated balance sheets. The Company previously recognized MSRs relating to loans owned by one of the consolidated VIEs. Upon purchase of the subordinate securities and consolidation of the VIE, the Company recombined the MSRs with the loans in the VIE to *Loans at fair value*.

The Company recognizes the interest income earned on the loans owned by the VIEs and the interest expense attributable to the asset-backed securities issued to nonaffiliates by the VIEs on its consolidated statements of operations.

Fair Value

The Company's consolidated financial statements include assets and liabilities that are measured at or based on their fair values. Measurement at or based on fair value may be on a recurring or nonrecurring basis depending on the accounting principles applicable to the specific asset or liability and whether the Company has elected to carry the item at its fair value as discussed in the following paragraphs.

The Company groups its assets and liabilities at fair value in three levels, based on the markets in which the assets and liabilities are traded and the observability of the inputs used to determine fair value. These levels are:

- Level 1—Quoted prices in active markets for identical assets or liabilities.
- Level 2—Prices determined or determinable using other significant observable inputs. Observable inputs are inputs that other market participants would use in pricing an asset or liability and are developed based on market data obtained from sources independent of the Company.
- Level 3—Prices determined using significant unobservable inputs. In situations where significant observable inputs are unavailable, unobservable inputs may be used. Unobservable inputs reflect the Company's own judgments about the factors that market participants use in pricing an asset or liability, and are based on the best information available in the circumstances.

  As a result of the difficulty in observing certain significant valuation inputs affecting "Level 3" fair value assets and liabilities, the Company is required to make judgments regarding these items' fair values. Different persons in possession of the same facts may reasonably arrive at different conclusions as to the inputs to be applied in valuing these assets and liabilities and their fair values. Such differences may result in significantly different fair value measurements. Likewise, due to the general illiquidity of some of these assets and liabilities, subsequent transactions may be at values significantly different from those reported.

The Company reclassifies its assets and liabilities between levels of the fair value hierarchy when the inputs required to establish fair value at a level of the fair value hierarchy are no longer readily available, requiring the use of lower-level inputs, or when the inputs required to establish fair value at a higher level of the hierarchy become available.

Fair Value Accounting Elections

The Company identified all of PMT's non-cash financial assets, its *Firm commitment to purchase CRT securities* and MSRs to be accounted for at fair value. The Company has elected to account for these assets at fair value so such changes in fair value will be reflected in income as they occur and more timely reflect the results of the Company's performance.

The Company has also identified its *Asset-backed financings at fair value* and *Interest-only security payable at fair value* to be accounted for at fair value to reflect the generally offsetting changes in fair value of these borrowings to changes in fair value of the assets at fair value collateralizing these financings. For other borrowings, the Company has determined that historical cost accounting is more appropriate because under this method debt issuance costs are amortized over the term of the debt facility, thereby matching the debt issuance cost to the periods benefiting from the availability of the debt.

Short-Term Investments

Short-term investments are carried at fair value with changes in fair value recognized in current period results of operations. Short-term investments represent deposit accounts. The Company categorizes its short-term investments as "Level 1" fair value assets.

Mortgage-Backed Securities

The Company's investments in MBS are carried at fair value with changes in fair value recognized in current period results of operations. Changes in fair value arising from amortization of purchase premiums and accrual of unearned discounts are recognized using the interest method and are included in *Interest income.* Changes in fair value arising from other factors are included in *Net (losses) gains on investments and financings.* Purchases and sales of MBS are recorded as of the trade date. The Company categorizes its investments in MBS as "Level 2" fair value assets.

Interest Income Recognition

Interest income on MBS is recognized over the life of the security using the interest method. The Company estimates, at the time of purchase, the future expected cash flows and determines the effective interest rate based on the estimated cash flows and the security's purchase price. The Company updates its cash flow estimates monthly.

Loans

Loans are carried at their fair values with changes in fair value recognized in current period results of operations. Changes in fair value, other than changes in fair value attributable to accrual of unearned discounts and amortization of purchase premiums, are included in *Net (losses) gains on investments and financings* for loans classified as *Loans at fair value* and *Net gains on loans acquired for sale* for loans classified as *Loans acquired for sale at fair value*. Changes in fair value attributable to accrual of unearned discounts and amortization of purchase premiums are included in *Interest income* on the consolidated statements of operations. The Company categorizes its *Loans acquired for sale at fair value* that are readily saleable into active markets with observable inputs that are significant to their fair values and its *Loans at fair value held in VIEs* as "Level 2" fair value assets. The Company categorizes all other loans as "Level 3" fair value assets.

Sale Recognition

The Company purchases from and sells loans into the secondary mortgage market without recourse for credit losses. However, the Company maintains continuing involvement with the loans in the form of servicing arrangements and the liability under the representations and warranties it makes to purchasers and insurers of the loans.

The Company recognizes transfers of loans as sales based on whether the transfer is made to a VIE:

- For loans that are transferred to a VIE, the Company recognizes the transfer as a sale when it determines that the Company is not the primary beneficiary of the VIE.
- For loans that are not transferred to a VIE, the Company recognizes the transfer as a sale when it surrenders control over the loans. Control over transferred loans is deemed to be surrendered when (i) the loans have been isolated from the Company, (ii) the transferee has the right (free of conditions that constrain it from taking advantage of that right) to pledge or exchange the transferred loans, and (iii) the Company does not maintain effective control over the transferred loans through either (a) an agreement that entitles and obligates the Company to repurchase or redeem the loans before their maturity or (b) the ability to unilaterally cause the holder to return specific loans.

Interest Income Recognition

The Company has the ability but not the intent to hold loans acquired for sale and loans at fair value other than loans held in VIEs for the foreseeable future. Therefore, interest income on loans acquired for sale and loans at fair value other than loans held in VIEs is recognized over the life of the loans using their contractual interest rates.

The Company has both the ability and intent to hold loans held in VIEs for the foreseeable future. Therefore, interest income on loans held in VIEs is recognized over the estimated remaining life of the loans using the interest method. Unearned discounts and purchase premiums are accrued and amortized to interest income using the effective interest rate inherent in the estimated cash flows from the loans.

Income recognition is suspended and the accrued unpaid interest receivable is reversed against interest income when a loan becomes 90 days delinquent. Income recognition is resumed when the loan becomes contractually current.

Excess Servicing Spread

The Company has acquired the right to receive the ESS related to certain of the MSRs owned by PFSI. ESS is carried at its fair value. The Company categorizes ESS as a "Level 3" fair value asset.

Interest Income Recognition

Interest income for ESS is accrued using the interest method, based upon the expected yield from the ESS through the expected life of the underlying mortgages.

Derivative and Credit Risk Transfer Strip Assets and Liabilities

The Company holds and issues derivative financial instruments in connection with its operating, investing and financing activities. Derivative financial instruments are created as a result of certain of the Company's operations and the Company also enters into derivative transactions as part of its interest rate risk management activities.

Derivative financial instruments created as a result of the Company's operations include:

- Interest rate lock commitments ("IRLCs") that are created when the Company commits to purchase loans acquired for sale; and
- CRT Agreements whereby the Company retained a Recourse Obligation relating to certain loans it sold into Fannie Mae guaranteed securitizations as part of the retention of an IO ownership interest in such loans.

The Company engages in interest rate risk management activities in an effort to reduce the variability of earnings caused by the effects of changes in interest rates on the fair value of certain of its assets and liabilities. The Company bears price risk related to its mortgage production, servicing and MBS financing activities due to changes in market interest rates as discussed below:

- The Company is exposed to loss if market mortgage interest rates increase because market interest rate increases generally cause the fair value of MBS, IRLCs and loans acquired for sale to decrease.
- The Company is exposed to losses if market mortgage interest rates decrease because market interest rate decreases generally cause the fair value of MSRs and ESS to decrease.

To manage the price risk resulting from these interest rate risks, the Company uses derivative financial instruments with the intention of moderating the risk that changes in market interest rates will result in unfavorable changes in the fair value of the Company's inventory of loans acquired for sale, IRLCs, MSRs and MBS financing.

The Company records all derivative and CRT strip assets and liabilities at fair value and records changes in fair value in current period results of operations. The Company does not designate and qualify any of its derivative financial instruments for hedge accounting.

Cash flows from derivative financial instruments relating to hedging of IRLCs and loans acquired for sale are included in *Cash flows from operating activities* in *Sale and repayment of loans acquired for sale at fair value to nonaffiliates.* Cash flows from derivative financial instruments relating to hedging of MSRs are included in *Cash flows from investing activities*.

Firm Commitment to Purchase Credit Risk Transfer Securities

The Company carried its firm commitment to purchase CRT securities at fair value. The firm commitment to purchase CRT securities was recognized initially as a component of *Net gains on loans acquired for sale*. Subsequent changes in fair value were recorded in *Net (losses) gains on investments and financings*. The Company categorized its firm commitment to purchase CRT securities as a "Level 3" fair value asset or liability.

Real Estate Acquired in Settlement of Loans

Real estate acquired in settlement of loans ("REO") is measured at the lower of the acquisition cost of the property (as measured by the fair value of the loan immediately before acquisition of the property in settlement of a loan) or its fair value reduced by estimated costs to sell. Changes in fair value to levels that are less than or equal to acquisition cost and gains or losses on sale of REO are recognized in the consolidated statements of operations under the caption *Results of real estate acquired in settlement of loans*. The Company categorizes REO as a "Level 3" fair value asset.

Mortgage Servicing Rights

MSRs arise from contractual agreements between the Company and investors (or their agents) in mortgage securities and loans. Under these agreements, the Company is obligated to provide loan servicing functions in exchange for fees and other remuneration. The servicing functions typically performed include, among other responsibilities, collecting and remitting loan payments; responding to borrower inquiries; accounting for principal and interest, holding custodial (impound) funds for payment of property taxes and insurance premiums; counseling delinquent mortgagors, administering loss mitigation activities, including modification and forbearance programs; and supervising foreclosures and property dispositions. The Company has engaged PFSI to provide these services on its behalf.

The Company recognizes MSRs initially at their fair values, either as proceeds from sales of loans where the Company assumes the obligation to service the loan in the sale transaction, or from the purchase of MSRs. The Company categorizes its MSR as a "Level 3" fair value asset.

Servicing Advances

Servicing advances represent advances made on behalf of borrowers and the loans' investors to fund property tax and insurance premiums for impounded loans with inadequate impound balances and for non-impounded loans with delinquent property taxes or insurance premiums and out of pocket collection costs for delinquent loans (e.g., preservation and restoration of mortgaged property, legal fees, appraisals and insurance premiums). Servicing advances are made in accordance with the Company's servicing agreements and, when made, are deemed recoverable. The Company periodically reviews servicing advances for collectability. Servicing advances are written off when they are deemed uncollectible.

Borrowings

Borrowings, other than *Asset-backed financings at fair value* and *Interest-only security payable at fair value*, are carried at amortized cost. Costs of creating the facilities underlying the agreements and premiums received relating to advances under the facilities are included in the carrying value of the borrowing facilities and are accrued to *Interest expense* over the term of revolving borrowing facilities on the straight-line basis and over non-revolving borrowings' contractual lives using the interest method.

Asset-backed financings at Fair Value* and *Interest-only security payable at fair value

The certificates issued to nonaffiliates by the Company relating to the asset-backed financings and interest only security payable are recorded as borrowings. Certificates issued to nonaffiliates have the right to receive principal and interest payments of the loans held by the consolidated VIEs. Asset-backed financings of the VIEs and *Interest-only security payable at fair value* are carried at fair value. Changes in fair value are recognized in current period results of operations as a component of *Net (losses) gains on investments and financings*. The Company categorizes asset-backed financings of the consolidated VIEs at fair value as "Level 2" fair value liabilities and the *Interest-only security payable at fair value* as a "Level 3" fair value liability.

Liability for Losses Under Representations and Warranties

The Company provides for its estimate of the losses that it expects to incur in the future as a result of its breach of the representations and warranties that it provides to the purchasers and insurers of the loans it has sold. The Company's sales agreements include representations and warranties related to the loans the Company sells to the Agencies and other investors. The representations and warranties require adherence to Agency and other investor origination and underwriting guidelines, including but not limited to the validity of the lien securing the loan, property eligibility, property value, loan amount, borrower credit, income and asset requirements, and compliance with applicable federal, state and local law.

In the event of a breach of its representations and warranties, the Company may be required to either repurchase the loans with the identified defects or indemnify the investor or insurer against credit losses arising from such loans. In either case, the Company bears any subsequent credit loss on the loans. The Company's credit loss may be reduced by any recourse it has to correspondent sellers that, in turn, had sold such loans to the Company and breached similar or other representations and warranties. In such event, the Company has the right to seek a recovery of related repurchase losses from that correspondent seller.

The Company records a provision for losses relating to representations and warranties as part of its loan sale transactions. The method used to estimate the liability for representations and warranties is a function of the representations and warranties given and considers a combination of factors, including, but not limited to, estimated future defaults and loan defect rates, the estimated severity of loss in the event of default and the probability of reimbursement by the correspondent loan seller. The Company establishes a liability at the time loans are sold and periodically updates its liability estimate. The level of the liability for representations and warranties is reviewed and approved by the Company's management credit committee.

The level of the liability for representations and warranties is difficult to estimate and requires considerable judgment. The level of loan repurchase losses is dependent on economic factors, investor demand strategies, and other external conditions that may change over the lives of the underlying loans. The Company's representations and warranties are generally not subject to stated limits of exposure. However, the Company believes that the current UPB of loans sold by PMT to date represents the maximum exposure to repurchases related to representations and warranties.

Loan Servicing Fees

Loan servicing fees and other remuneration are received by the Company for servicing residential loans. Loan servicing activities are described under *Mortgage servicing rights* above. The Company's obligation under its loan servicing agreements is fulfilled as the Company services the loans.

Loan servicing fee amounts are based upon fee rates established at the time a loan sale or securitization is entered into and upon the unpaid principal balance of the loans. Loan servicing fees are recognized in the period in which they are earned.

Share-Based Compensation

The Company amortizes the fair value of previously granted share-based awards to *Compensation* expense over the vesting period using the graded vesting method. The initial cost of share-based awards is established at the Company's closing share price adjusted for the portion of the awards expected to vest on the date of the award. The Company adjusts the cost of its share-based awards for changes in estimates of the portion of the awards it expects to be forfeited by grantees and for changes in expected performance attainment in each subsequent reporting period until the units have vested or have been forfeited, the service being provided is subsequently completed, or, under certain circumstances, is likely to be completed, whichever occurs first.

Income Taxes

The Company has elected to be taxed as a REIT and the Company believes PMT complies with the provisions of the Internal Revenue Code applicable to REITs. Accordingly, the Company believes PMT will not be subject to federal income tax on that portion of its REIT taxable income that is distributed to shareholders as long as certain asset, income and share ownership tests are met. If PMT fails to qualify as a REIT, and does not qualify for certain statutory relief provisions, it will be subject to income taxes and may be precluded from qualifying as a REIT for the four tax years following the year of loss of the Company's REIT qualification.

PMC, the Company's taxable REIT subsidiary ("TRS"), is subject to federal and state income taxes. Income taxes are provided for using the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred tax assets and liabilities are measured using enacted rates expected to apply to taxable income in the years in which the Company expects those temporary differences to be recovered or settled. The effect on deferred taxes of a change in tax rates is recognized in income in the period in which the change occurs.

A valuation allowance is established if, in the Company's judgment, realization of deferred tax assets is not more likely than not. The Company recognizes a tax benefit relating to tax positions it takes only if it is more likely than not that the position will be sustained upon examination by the appropriate taxing authority. A tax position that meets this standard is recognized as the largest amount that exceeds 50 percent likelihood of being realized upon settlement. The Company will classify any penalties and interest as a component of income tax expense.

Accounting Standard Adopted in 2022

Effective January 1, 2022, the Company adopted FASB Accounting Standards Update 2020-06, *Debt – Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging – Contracts in Entity's Own Equity (Subtopic 815-40)* ("ASU 2020-06"). ASU 2020-06 simplifies the accounting for convertible instruments by removing certain separation models in ASC subtopic 470-20, *Debt – Debt with Conversion and Other Options* for convertible instruments.

As a result of the adoption of ASU 2020-06, the Company reclassified approximately $50.3 million of issuance discount originally recognized in the issuance of *Exchangeable senior notes* from *Additional paid-in capital* to the carrying value of the *Exchangeable senior notes* and $9.4 million of previously recognized accrual of the issuance discount, as an adjustment to the *Accumulated deficit* effective January 1, 2022. The adoption of ASU 2020-06 reduced *Interest expense* by approximately $7.1 million for the year ended December 31, 2022, as the result of the reclassification of the issuance discount.

Note 4—Transactions with Related Parties

Operating Activities

Correspondent Production Activities

The Company is provided fulfillment and other services by PLS under an amended and restated mortgage banking services agreement.

Through June 30, 2020, pursuant to the terms of the agreement, the monthly fulfillment fee was an amount equal to (a) no greater than the product of (i) 0.35% and (ii) the aggregate initial unpaid principal balance (the "Initial UPB") of all loans purchased in such month, plus (b) in the case of all loans other than loans sold to or securitized through Fannie Mae or Freddie Mac, no greater than the product of (i) 0.50% and (ii) the aggregate Initial UPB of all such loans sold and securitized in such month; provided however, that no fulfillment fee shall be due or payable to PLS with respect to any loans underwritten in accordance with the Ginnie Mae MBS Guide.

The Company does not hold the Ginnie Mae approval required to issue securities guaranteed by Ginnie Mae MBS and act as a servicer. Accordingly, under the agreement, PLS currently purchases loans saleable in accordance with the Ginnie Mae MBS Guide "as is" and without recourse of any kind from the Company at cost less any administrative fees paid by the correspondent to the Company plus accrued interest and a sourcing fee, which, through June 30, 2020, ranged from two to three and one-half basis points, generally based on the average number of calendar days loans are held by the Company prior to purchase by PLS. The Company may also sell conventional loans to PLS under the same arrangement subject to mutual agreement between the parties.

Effective July 1, 2020, the fulfillment fees and sourcing fees were revised as follows.

Fulfillment and sourcing fees are summarized below:

- Fulfillment fees shall not exceed the following:
  - (iv) the number of loan commitments issued by the Company multiplied by a pull-through factor of either .99 or .80 depending on whether the loan commitments are subject to a "mandatory trade confirmation" or a "best efforts lock confirmation", respectively, and then multiplied by $585 for each pull-through adjusted loan commitment up to and including 16,500 per quarter and $355 for each pull-through adjusted loan commitment in excess of 16,500 per quarter, plus
  - (v) $315 multiplied by the number of purchased loans up to and including 16,500 per quarter and $195 multiplied by the number of purchased loans in excess of 16,500 per quarter, plus
  - (vi) $750 multiplied by the number of all purchased loans that are sold or securitized to parties other than Fannie Mae and Freddie Mac; provided however, that no fulfillment fee shall be due or payable to PLS with respect to any Ginnie Mae loans, and as of October 1, 2022, designated Fannie Mae or Freddie Mac loans acquired by PLS.
- Sourcing fees range from one to two basis points of the UPB, generally based on the average number of calendar days the loans are held by PMT before purchase by PLS.

The mortgage banking services agreement expires, unless terminated earlier in accordance with its terms, on June 30, 2025, subject to automatic renewal for additional 18-month periods, unless terminated in accordance with its terms.

The Company may purchase newly originated conforming balance non-government insured or guaranteed loans from PLS under a mortgage loan purchase and sale agreement.

Following is a summary of correspondent production activity between the Company and PLS:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Loan fulfillment fees earned by PLS	$ 67,991	$ 178,927	$ 222,200
UPB of loans fulfilled by PLS	$ 37,090,031	$ 110,003,574	$ 100,389,252
Sourcing fees received from PLS included in *Net gains on loans acquired for sale*	$ 4,968	$ 6,472	$ 11,037
UPB of loans sold to PLS	$ 49,680,267	$ 64,774,728	$ 60,540,530
Purchases of loans acquired for sale from PLS	$ 298,862	$ —	$ 2,248,896
Tax service fees paid to PLS	$ 8,418	$ 26,126	$ 23,408

	December 31, 2022	December 31, 2021
	(in thousands)	
Loans included in *Loans acquired for sale at fair value* pending sale to PLS	$ 159,671	$ 314,995

Loan Servicing

The Company, through its Operating Partnership, has a loan servicing agreement with PLS (the "Servicing Agreement") pursuant to which PLS provides subservicing for the Company's portfolio of MSRs, loans held for sale, loans held in VIEs (prime servicing) and its portfolio of residential loans purchased with credit deterioration (special servicing). The Servicing Agreement provides for servicing fees earned by PLS that are established at a fixed per loan monthly amount based on the delinquency, bankruptcy and/or foreclosure status of the serviced loan or REO. The Servicing Agreement expires on June 30, 2025, subject to automatic renewal for additional 18-month periods, unless terminated earlier in accordance with its terms.

Prime Servicing

The base servicing fees for prime loans subserviced by PLS on the Company's behalf are $7.50 per month for fixed-rate loans and $8.50 per month for adjustable-rate loans.

To the extent that these prime loans become delinquent, PLS is entitled to an additional servicing fee per loan ranging from $10 to $55 per month and based on the delinquency, bankruptcy and foreclosure status of the loan or $75 per month if the underlying mortgaged property becomes REO.

PLS is also entitled to customary ancillary income and certain market-based fees and charges, including boarding and deboarding fees, liquidation and disposition fees, assumption, modification and origination fees.

Effective July 1, 2020, PLS also receives certain fees for COVID-19 pandemic-related forbearance and modification activities it provides as required by the CARES Act.

Special Servicing

The base servicing fee rates for loans purchased with credit deterioration (distressed loans) range from $30 per month for current loans up to $95 per month for loans in foreclosure proceedings. The base servicing fee rate for REO is $75 per month. PLS also receives a supplemental servicing fee of $25 per month for each distressed loan.

PLS receives activity-based fees for modifications, foreclosures and liquidations that it facilitates with respect to distressed loans, as well as other market-based refinancing and loan disposition fees. PLS may also receive REO rental fees, property lease renewal fees, property management fees, tenant paid application fees, late rent fees, and third-party vendor fees.

MSR Recapture Agreement

The Company has an MSR recapture agreement with PFSI. Pursuant to the terms of the MSR recapture agreement, if PFSI refinances mortgage loans for which the Company previously held the MSRs, through June 30, 2020, PFSI was generally required to transfer and convey to the Company cash in an amount equal to 30% of the fair market value of the MSRs related to all such loans so originated.

Effective July 1, 2020, the 2020 MSR recapture agreement changed the recapture fee payable by PLS to a tiered amount equal to:

- 40% of the fair market value of the MSRs relating to the recaptured loans subject to the first 15% of the "recapture rate";
- 35% of the fair market value of the MSRs relating to the recaptured loans subject to the "recapture rate" in excess of 15% and up to 30%; and
- 30% of the fair market value of the MSRs relating to the recaptured loans subject to the "recapture rate" in excess of 30%.

The "recapture rate" means, during each month, the ratio of (i) the aggregate unpaid principal balance of all recaptured loans, to (ii) the aggregate unpaid principal balance of all mortgage loans for which the Company held the MSRs and that were refinanced or otherwise paid off in such month. PFSI has further agreed to allocate sufficient resources to target a recapture rate of at least 15%.

The MSR recapture agreement expires, unless terminated earlier in accordance with its terms, on June 30, 2025, subject to automatic renewal for additional 18-month periods, unless terminated in accordance with its terms.

Following is a summary of loan servicing fees earned by PLS:

	Year ended December 31,		
	2022	2021	2020
	(in thousands)		
Loan servicing fees:			
Loans acquired for sale at fair value	$ 1,018	$ 2,363	$ 2,067
Loans at fair value	529	505	807
MSRs	80,368	77,790	64,307
	$ 81,915	$ 80,658	$ 67,181
Average investment in:			
Loans acquired for sale at fair value	$ 1,938,470	$ 4,135,140	$ 3,469,392
Loans at fair value	$ 1,615,982	$ 481,433	$ 223,628
Average MSR portfolio UPB	$ 222,847,593	$ 196,996,623	$ 147,832,880

Management Fees

The Company has a management agreement with PCM pursuant to which PMT pays PCM management fees as follows:

- A base management fee that is calculated quarterly and is equal to the sum of (i) 1.5% per year of average shareholders' equity up to $2 billion, (ii) 1.375% per year of average shareholders' equity in excess of $2 billion and up to $5 billion, and (iii) 1.25% per year of average shareholders' equity in excess of $5 billion.
- A performance incentive fee that is calculated quarterly at a defined annualized percentage of the amount by which "net income," on a rolling four-quarter basis and before deducting the incentive fee, exceeds certain levels of return on "equity."

The performance incentive fee is equal to the sum of: (a) 10% of the amount by which "net income" for the quarter exceeds (i) an 8% return on "equity" plus the "high watermark", up to (ii) a 12% return on "equity"; plus (b) 15% of the amount by which "net income" for the quarter exceeds (i) a 12% return on "equity" plus the high watermark, up to (ii) a 16% return on "equity"; plus (c) 20% of the amount by which "net income" for the quarter exceeds a 16% return on "equity" plus the "high watermark".

For the purpose of determining the amount of the performance incentive fee:

"Net income" is defined as net income or loss attributable to its common shares of beneficial interest ("Common Shares") calculated in accordance with GAAP, and adjusted to exclude one-time events pursuant to changes in GAAP and certain other non-cash charges after discussion between PCM and the Company's independent trustees and after approval by a majority of the Company's independent trustees.

"Equity" is the weighted average of the issue price per Common Share of all of the Company's public offerings, multiplied by the weighted average number of Common Shares outstanding (including restricted share units) in the rolling four-quarter period.

"High watermark" is the quarterly adjustment that reflects the amount by which the "net income" (stated as a percentage of return on "equity") in that quarter exceeds or falls short of the lesser of 8% and the average Fannie Mae 30-year MBS yield (the target yield) for the four quarters then ended. The "high watermark" starts at zero and is adjusted quarterly. If "net income" is lower than the target yield, the high watermark is increased by the difference. If the "net income" is higher than the target yield, the high watermark is reduced by the difference. Each time a performance incentive fee is earned, the high watermark returns to zero. As a result, the threshold amounts required for PCM to earn a performance incentive fee are adjusted cumulatively based on the performance of PMT's "net income" over (or under) the target yield, until the "net income" in excess of the target yield exceeds the then-current cumulative "high watermark" amount.

The base management fee and the performance incentive fee are both payable quarterly in arrears. The performance incentive fee may be paid in cash or a combination of cash and the Company's Common Shares (subject to a limit of no more than 50% paid in Common Shares), at the Company's option.

In the event of termination of the management agreement between the Company and PCM, PCM may be entitled to a termination fee in certain circumstances. The termination fee is equal to three times the sum of (a) the average annual base management fee, and (b) the average annual performance incentive fee earned by PCM, in each case during the 24-month period before termination.

Following is a summary of management fee expenses:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Base management	$ 31,065	$ 34,794	$ 34,538
Performance incentive	—	3,007	—
	$ 31,065	$ 37,801	$ 34,538
Average shareholders' equity amounts used to calculate base management fee expense	$ 2,079,851	$ 2,348,395	$ 2,330,154

Expense Reimbursement and Amounts Payable to and Receivable from PCM

Under the management agreement, PCM is entitled to reimbursement of its organizational and operating expenses, including third-party expenses, incurred on the Company's behalf, it being understood that PCM and its affiliates shall allocate a portion of their personnel's time to provide certain legal, tax and investor relations services for the direct benefit of the Company. PCM was reimbursed $120,000 per fiscal quarter through June 30, 2020. Effective July 1, 2020, PMT's reimbursement of PCM's and its affiliates' compensation expenses was increased from $120,000 to $165,000 per fiscal quarter, such amount to be reviewed annually and to not preclude reimbursement for any other services performed by PCM or its affiliates.

The Company is required to pay PCM and its affiliates a portion of rent, telephone, utilities, office furniture, equipment, machinery and other office, internal and overhead expenses of PCM and its affiliates required for the Company's and its subsidiaries' operations. These expenses are allocated based on the ratio of the Company's and its subsidiaries' proportion of gross assets compared to all remaining gross assets managed or owned by PCM and/or its affiliates as calculated at each fiscal quarter end.

Following is a summary of the Company's reimbursements to PCM and its affiliates for expenses:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Reimbursement of:			
Expenses incurred on the Company's behalf, net	$ 23,829	$ 18,812	$ 22,583
Common overhead incurred by PCM and its affiliates	8,588	4,906	5,172
Compensation	660	660	570
	$ 33,077	$ 24,378	$ 28,325
Payments and settlements during the year (1)	$ 144,012	$ 284,381	$ 378,162

(1) Payments and settlements include payments and netting settlements made pursuant to master netting agreements between the Company and PFSI for the operating, investing and financing activities itemized in this Note.

Investing Activities

Spread Acquisition and MSR Servicing Agreements

The Company, through a wholly-owned subsidiary, PennyMac Holdings, LLC ("PMH"), has an amended and restated master spread acquisition and MSR servicing agreement with PLS (the "Spread Acquisition Agreement"), pursuant to which the Company may purchase from PLS, from time to time, participation certificates representing beneficial ownership in ESS arising from Ginnie Mae MSRs acquired by PLS, in which case PLS generally would be required to service or subservice the related loans for Ginnie Mae. The primary purpose of the amendment and restatement was to facilitate the continued financing of the ESS owned by the Company in connection with its participation in the GNMA MSR Facility (as defined below).

To the extent PLS refinances any of the loans relating to the ESS the Company has acquired, the Spread Acquisition Agreement also contains recapture provisions requiring that PLS transfer to the Company, at no cost, the ESS relating to a certain percentage of the UPB of the newly originated loans. However, under the Spread Acquisition Agreement, in any month where the transferred ESS relating to newly originated Ginnie Mae loans is not equal to at least 90% of the product of the excess servicing fee rate and the UPB of the refinanced loans, PLS is also required to transfer additional ESS or cash in the amount of such shortfall. Similarly, in any month where the transferred ESS relating to modified Ginnie Mae mortgage loans is not equivalent to at least 90% of the product of the excess servicing fee rate and the unpaid principal balance of the modified mortgage loans, the Spread Acquisition Agreement contains provisions that require the Company to transfer additional ESS or cash in the amount of such shortfall. To the extent the fair market value of the aggregate ESS to be transferred for the applicable month is less than $200,000, PLS may, at its option, settle its recapture liability to the Company in cash in an amount equal to such fair market value in lieu of transferring such ESS.

The remaining balance of the ESS was repaid during the quarter ended March 31, 2021.

Following is a summary of investing activities between the Company and PFSI:

	Year ended December 31,	
	2021	2020
	(in thousands)	
ESS:		
Received pursuant to a recapture agreement	$ 557	$ 2,093
Repayments	$ 134,624	$ 32,377
Interest income	$ 1,280	$ 8,418
Net gain (loss) included in *Net (losses) gains on investments and financings:*		
Valuation changes	$ 1,037	$ (24,970)
Recapture income	614	2,241
	$ 1,651	$ (22,729)

Financing Activities

PFSI held 75,000 of the Company's Common Shares at both December 31, 2022 and December 31, 2021.

Repurchase Agreement with PLS

The Company, through PMH, has a master repurchase agreement with PLS (the "PMH Repurchase Agreement"), pursuant to which PMH may borrow from PLS for the purpose of financing PMH's participation certificates representing beneficial ownership in ESS acquired from PLS under the Spread Acquisition Agreement. PLS then re-pledges such participation certificates to PNMAC GMSR ISSUER TRUST (the "Issuer Trust") under a master repurchase agreement by and among PLS, the Issuer Trust and Private National Mortgage Acceptance Company, LLC, as guarantor (the "PC Repurchase Agreement"). The Issuer Trust was formed for the purpose of allowing PLS to finance MSRs and ESS relating to such MSRs (the "GNMA MSR Facility").

In the first quarter of 2021, PLS repurchased the ESS from PMH at fair market value, effectively terminating the borrowing arrangements allowing PMH to finance its participation certificates representing beneficial ownership in ESS.

Following is a summary of financing activities between the Company and PFSI:

	Year ended December 31,	
	2021	2020
	(in thousands)	
Net repayments of assets sold under agreements to repurchase	$ 80,862	$ 26,650
Interest expense	$ 387	$ 3,325

Amounts Receivable from and Payable to PFSI

Amounts receivable from and payable to PFSI are summarized below:

	December 31, 2022	December 31, 2021
	(in thousands)	
Due from PFSI-Miscellaneous receivables	$ 3,560	$ 15,953
Due to PFSI:		
Allocated expenses and expenses and costs paid by PFSI on PMT's behalf	$ 11,447	$ 15,431
Management fees	7,307	8,918
Correspondent production fees	6,835	8,894
Loan servicing fees	6,740	6,848
Fulfillment fees	4,043	—
	$ 36,372	$ 40,091

The Company has also transferred cash to PLS to fund loan servicing advances and REO property acquisition and preservation costs on its behalf. Such amounts are included in various balance sheet items as summarized below:

Balance sheet line including advance amount	December 31, 2022		December 31, 2021	
	(in thousands)			
Loan servicing advances	$	197,972	$	204,951
Real estate acquired in settlement of loans		3,479		7,115
	$	201,451	$	212,066

Note 5—Loan Sales

The following table summarizes cash flows between the Company and transferees in transfers of loans that are accounted for as sales where the Company maintains continuing involvement with the loans:

	Year ended December 31,					
	2022		2021		2020	
			(in thousands)			
Cash flows:						
Proceeds from sales	$	39,077,156	$	110,919,477	$	106,306,805
Loan servicing fees received	$	625,210	$	526,245	$	406,060

The following table summarizes for the dates presented collection status information for loans that are accounted for as sales where the Company maintains continuing involvement:

	December 31, 2022		December 31, 2021	
	(in thousands)			
UPB of loans outstanding	$	229,858,573	$	215,927,495
Collection status (UPB) (1)				
Delinquency:				
30-89 days delinquent	$	1,903,007	$	1,148,542
90 or more days delinquent:				
Not in foreclosure	$	880,841	$	1,726,488
In foreclosure	$	70,921	$	36,658
Bankruptcy	$	123,239	$	130,582
Delinquent loans in COVID-19 pandemic-related forbearance:				
30-89 days	$	176,346	$	169,654
90 days or more	$	464,694	$	614,882
Custodial funds managed by the Company (2)	$	1,783,157	$	3,823,527

(1) Includes delinquent loans in COVID-19 pandemic-related forbearance plans that were requested by borrowers seeking payment relief in accordance with the CARES Act.

(2) Custodial funds include borrower and investor custodial cash accounts relating to loans serviced under mortgage servicing agreements and are not included on the Company's consolidated balance sheets. The Company earns placement fees on certain of the custodial funds it manages on behalf of the loans' borrowers and investors, which are included in *Interest income* in the Company's consolidated statements of operations.

Note 6—Variable Interest Entities

The Company is a variable interest holder in various VIEs that relate to its investing and financing activities.

Credit Risk Transfer Arrangements

The Company has previously entered into certain loan sales arrangements pursuant to which it accepts credit risk relating to the loans sold in exchange for a portion of the interest earned on such loans. These arrangements absorb scheduled or realized credit losses on such loans and include CRT Agreements, CRT strips and sales of loans that include firm commitments to purchase CRT securities.

The Company, through its subsidiary, PMC, entered into CRT Agreements with Fannie Mae, pursuant to which PMC, through subsidiary trust entities, sold pools of loans into Fannie Mae-guaranteed securitizations while retaining Recourse Obligations as part of the retention of IO ownership interests in such loans. CRT Agreements are structured such that loans that reach a specific number of days delinquent (including loans in forbearance, which also includes those subject to the forbearance provided in the CARES Act) trigger losses chargeable to the CRT Agreements based on the size of the loan and a contractual schedule of loss severity. The Company placed *Deposits securing CRT arrangements* into the subsidiary trust entities to secure its Recourse Obligations. The *Deposits securing CRT arrangements* represent the Company's maximum contractual exposure to claims under its Recourse Obligations and are the sole source of settlement of losses under the CRT Agreements. The Company recognizes its IO ownership interests and Recourse Obligations on the consolidated balance sheets as *CRT Derivatives* in *Derivative assets* and *Derivative and credit risk transfer strip liabilities.*

Effective in June 2018, the Company began entering into a different type of CRT arrangement. Under the new arrangement, the Company sold loans subject to agreements that required PMT to purchase securities that absorb incurred credit losses on such loans. Unlike the CRT Agreements, these CRT securities require the Company to absorb losses only when the reference loans realize credit losses. The Company recognized these firm purchase commitments initially as a component of *Net gains on loans acquired for sale*; subsequent changes in fair value were recognized in *Net (losses) gains on investments and financings*. The final sales of loans subject to this type of CRT arrangement were made during September 2020.

The Company purchased the securities subject to the firm commitments. Similar to the CRT Agreements, the Company accounts for the deposits collateralizing these securities as *Deposits securing CRT arrangements* and recognizes its IO ownership interests and Recourse Obligations as *CRT strips* which are also included on the consolidated balance sheet in *Derivative and credit risk transfer strip liabilities.* Like CRT Agreements, the *Deposits securing CRT arrangements* relating to these arrangements represent the Company's maximum contractual exposure to losses. Gains and losses on the derivatives and strips (including the IO ownership interest sold to nonaffiliates) included in the CRT arrangements are included in *Net (losses) gains on investments and financings* in the consolidated statements of operations.

The Company's exposure to losses under its Recourse Obligations was initially established at rates ranging from 3.5% to 4.0% of the UPB of the loans sold under the CRT arrangements. As the UPB of the underlying loans subject to each CRT arrangement is reduced through repayments, the percentage exposure of each CRT arrangement will increase to maximums ranging from 4.5% to 5.0% of outstanding UPB, although the total dollar amount of exposure to losses does not increase.

Following is a summary of the CRT arrangements:

	Year ended December 31, 2022	2021	2020
		(in thousands)	
UPB of loans sold			$ 18,277,263
Investments:			
Deposits securing CRT arrangements			$ 1,700,000
Change in expected face amount of firm commitment to purchase CRT securities			(1,502,203)
			$ 197,797
Net investment income:			
Net (losses) gains on investments and financings:			
CRT Derivatives and strips:			
CRT derivatives			
Realized	$ 38,382	$ 93,837	$ (53,965)
Valuation changes	(42,220)	(12,829)	(82,633)
	(3,838)	81,008	(136,598)
CRT strips			
Realized	60,389	111,872	54,929
Valuation changes	(110,356)	175,955	(79,221)
	(49,967)	287,827	(24,292)
Interest-only security payable at fair value	(11,332)	164	14,952
	(65,137)	368,999	(145,938)
Firm commitments to purchase CRT securities	—	—	(121,067)
	(65,137)	368,999	(267,005)
Net gains on loans acquired for sale — Fair value of firm commitment to purchase CRT securities recognized upon sale of loans	—	—	(38,161)
Interest income — Deposits securing CRT arrangements	21,324	559	7,012
	$ (43,813)	$ 369,558	$ (298,154)
Net (recoveries received) payments made to settle (recoveries) losses on CRT arrangements	$ (19,016)	$ (62,387)	$ 115,475

	December 31, 2022	December 31, 2021
	(in thousands)	
Carrying value of CRT arrangements:		
Derivative and credit risk transfer strip assets (liabilities), net		
CRT derivatives	$ (22,098)	$ 18,964
CRT strips	(137,193)	(26,837)
	$ (159,291)	$ (7,873)
Deposits securing CRT arrangements	$ 1,325,294	$ 1,704,911
Interest-only security payable at fair value	$ 21,925	$ 10,593
CRT arrangement assets pledged to secure borrowings:		
Derivative assets	$ 1,262	$ 19,627
Deposits securing CRT arrangements (1)	$ 1,325,294	$ 1,704,911
UPB of loans underlying CRT arrangements	$ 25,315,524	$ 30,808,907
Collection status (UPB):		
Delinquency (2)		
Current	$ 24,673,719	$ 29,581,803
30-89 days delinquent	$ 409,049	$ 349,291
90-180 days delinquent	$ 112,286	$ 120,775
180 or more days delinquent	$ 93,717	$ 748,576
Foreclosure	$ 26,753	$ 8,462
Bankruptcy	$ 54,395	$ 64,694
Delinquent loans in COVID-19 pandemic-related forbearance plans:		
30-89 days delinquent	$ 35,388	$ 44,015
90-180 days delinquent	$ 39,033	$ 57,815
180 or more days delinquent	$ 35,588	$ 174,041

(1) *Deposits securing credit risk transfer strip liabilities* also secure $160.6 million and $27.5 million in CRT strip and CRT derivative liabilities at December 31, 2022 and 2021, respectively.

(2) Includes delinquent loans in COVID-19 pandemic-related forbearance plans that were requested by borrowers seeking payment relief in accordance with the CARES Act.

Subordinate Mortgage-Backed Securities

The Company retains or purchases subordinate MBS in transactions sponsored by PMC or a nonaffiliate. Cash inflows from the loans underlying these securities are distributed to investors and service providers in accordance with the contractual priority of payments and, as such, most of these inflows must be directed first to service and repay the senior securities.

The rights of holders of the subordinate securities to receive distributions of principal and/or interest, as applicable, are subordinate to the rights of holders of the senior securities. After the senior securities are repaid, substantially all cash inflows will be directed to the subordinate securities, including those held by the Company, until they are fully repaid.

The Company’s retention or purchase of subordinate MBS exposes PMT to the credit risk in the underlying loans because the Company’s beneficial interests are among the first beneficial interests to absorb credit losses on those assets. The Company’s exposure to losses from its investments in subordinate MBS is limited to its recorded investment in such securities.

Whether the Company concludes that it is the primary beneficiary of the VIEs issuing these subordinate MBS and therefore consolidates these entities is based on its exposure to losses that could be significant to the VIEs and its power to direct activities that most significantly impact the VIEs' economic performance:

- Certain of the Company's investments in subordinate MBS either do not expose the Company to losses or residual returns that could be significant to the issuing VIE or the Company has concluded that it does not have the power to direct the activities that most significantly impact the VIE's economic performance. These investments are classified as subordinate credit-linked securities in its investment in MBS as shown in Note 8 – *Mortgage-Backed Securities*.
- For other investments in subordinate MBS, comprised of transactions backed by loans purchased by the Company that were subsequently included in securitizations sponsored by the Company or a nonaffiliate and serviced by PLS, the Company concluded that it is the primary beneficiary of the VIEs as it has the power, through PLS, in its role as the servicer or sub-servicer of the loans, to direct the activities of the VIEs that most significantly impact the VIEs' economic performance and, as a holder of subordinate securities, is exposed to losses or residual returns that could potentially be significant to the VIEs. Therefore, PMT consolidates the VIEs that issue those subordinate MBS.

The Company recognizes the interest income earned on the loans owned by the VIEs and the interest expense attributable to the asset-backed securities issued to nonaffiliates by the VIEs on its consolidated statements of operations.

Following is a summary of the Company's investment in subordinate mortgage-backed securities held in consolidated VIEs:

	Year ended December 31,		
	2022	2021	2020
	(in thousands)		
Fair value changes:			
Loans at fair value	$ (301,164)	$ (12,536)	$ (6,617)
Asset-backed financings at fair value	$ 283,586	$ 19,708	$ 5,519
Interest income	$ 59,263	$ 17,014	$ 10,609
Interest expense	$ 53,570	$ 15,076	$ 10,971

	December 31, 2022	December 31, 2021
	(in thousands)	
Loans at fair value	$ 1,509,942	$ 1,564,565
Asset-backed financings at fair value	$ 1,414,955	$ 1,469,999
Subordinate MBS retained at fair value pledged to secure *Assets sold under agreements to repurchase*	$ 84,044	$ 85,266

Note 7—Fair Value

Fair Value Accounting Elections

The Company identified all of PMT's non-cash financial assets, firm commitment to purchase CRT securities and MSRs to be accounted for at fair value. The Company has elected to account for these assets at fair value so such changes in fair value will be reflected in income as they occur and more timely reflect the results of the Company's performance.

The Company also identified PMT's asset-backed financings of VIEs and interest only security payable to be accounted for at fair value to reflect the generally offsetting changes in fair value of these borrowings to changes in fair value of the assets at fair value collateralizing these financings. For other borrowings, the Company has determined that historical cost accounting is more appropriate because under this method debt issuance costs are amortized over the term of the debt facility, thereby matching the debt issuance cost to the periods benefiting from the availability of the debt.

Financial Statement Items Measured at Fair Value on a Recurring Basis

Following is a summary of financial statement items that are measured at fair value on a recurring basis:

	December 31, 2022			
	Level 1	Level 2	Level 3	Total
	(in thousands)			
Assets:				
Short-term investments	$ 252,271	$ —	$ —	$ 252,271
Mortgage-backed securities at fair value	—	4,462,601	—	4,462,601
Loans acquired for sale at fair value	—	1,811,225	10,708	1,821,933
Loans at fair value	—	1,509,942	3,457	1,513,399
Derivative assets:				
Call options on interest rate futures purchase contracts	2,906	—	—	2,906
Put options on interest rate futures purchase contracts	8,130	—	—	8,130
Forward purchase contracts	—	418	—	418
Forward sale contracts	—	43,435	—	43,435
MBS put options	—	2,783	—	2,783
CRT derivatives	—	—	1,262	1,262
Interest rate lock commitments	—	—	3,877	3,877
Total derivative assets before netting	11,036	46,636	5,139	62,811
Netting	—	—	—	22,129
Total derivative assets after netting	11,036	46,636	5,139	84,940
Mortgage servicing rights at fair value	—	—	4,012,737	4,012,737
	$ 263,307	$ 7,830,404	$ 4,032,041	$12,147,881
Liabilities:				
Asset-backed financings at fair value	$ —	$ 1,414,955	$ —	$ 1,414,955
Interest-only security payable at fair value	—	—	21,925	21,925
Derivative and credit risk transfer strip liabilities:				
Forward purchase contracts	—	15,196	—	15,196
Forward sales contracts	—	17,279	—	17,279
CRT derivatives	—	—	23,360	23,360
Interest rate lock commitments	—	—	4,355	4,355
Total derivative liabilities before netting	—	32,475	27,715	60,190
Netting	—	—	—	(30,157)
Total derivative liabilities after netting	—	32,475	27,715	30,033
Credit risk transfer strips	—	—	137,193	137,193
Total derivative and credit risk transfer strip liabilities	—	32,475	164,908	167,226
	$ —	$ 1,447,430	$ 186,833	$ 1,604,106

	December 31, 2021			
	Level 1	Level 2	Level 3	Total
	(in thousands)			
Assets:				
Short-term investments	$ 167,999	$ —	$ —	$ 167,999
Mortgage-backed securities at fair value	—	2,666,768	—	2,666,768
Loans acquired for sale at fair value	—	4,140,896	30,129	4,171,025
Loans at fair value	—	1,564,565	4,161	1,568,726
Derivative assets:				
Call options on interest rate futures purchase contracts	2,828	—	—	2,828
Put options on interest rate futures purchase contracts	3,180	—	—	3,180
Forward purchase contracts	—	5,806	—	5,806
Forward sale contracts	—	6,307	—	6,307
MBS put options	—	3,662	—	3,662
Swaption purchase contracts	—	39	—	39
CRT derivatives	—	—	19,627	19,627
Interest rate lock commitments	—	—	3,897	3,897
Total derivative assets before netting	6,008	15,814	23,524	45,346
Netting	—	—	—	(11,108)
Total derivative assets after netting	6,008	15,814	23,524	34,238
Mortgage servicing rights at fair value	—	—	2,892,855	2,892,855
	$ 174,007	$ 8,388,043	$ 2,950,669	$11,501,611
Liabilities:				
Asset-backed financings at fair value	$ —	$ 1,469,999	$ —	$ 1,469,999
Interest-only security payable at fair value	—	—	10,593	10,593
Derivative liabilities and credit risk transfer strips:				
Forward purchase contracts	—	3,620	—	3,620
Forward sales contracts	—	13,782	—	13,782
CRT derivatives	—	—	663	663
Interest rate lock commitments	—	—	1,446	1,446
Total derivative liabilities before netting	—	17,402	2,109	19,511
Netting	—	—	—	(4,142)
Total derivative liabilities after netting	—	17,402	2,109	15,369
Credit risk transfer strips	—	—	26,837	26,837
Total derivative and credit risk transfer strip liabilities	—	17,402	28,946	42,206
	$ —	$ 1,487,401	$ 39,539	$ 1,522,798

The following is a summary of changes in items measured at fair value on a recurring basis using "Level 3" inputs that are significant to the estimation of the fair values of the assets and liabilities at either the beginning or end of the years presented:

Assets (1)	Loans acquired for sale	Loans at fair value	CRT derivatives	Interest rate lock commitments	CRT strips	Mortgage servicing rights	Total
	Year ended December 31, 2022 (in thousands)						
Balance, December 31, 2021	$ 30,129	$ 4,161	$ 18,964	$ 2,451	$ (26,837)	$ 2,892,855	$ 2,921,723
Purchases and issuances	13,619	—	—	(87,393)	—	—	(73,774)
Repayments and sales	(29,674)	(1,390)	(37,224)	—	(60,389)	—	(128,677)
Amounts received pursuant to sales of loans	—	—	—	—	—	670,343	670,343
Changes in fair value included in income arising from:							
Changes in instrument - specific credit risk	—	—	—	—	—	—	—
Other factors	(3,366)	686	(3,838)	(234,146)	(49,967)	449,435	158,804
	(3,366)	686	(3,838)	(234,146)	(49,967)	449,435	158,804
Transfers of:							
Interest rate lock commitments to loans acquired for sale (2)	—	—	—	318,610	—	—	318,610
Mortgage servicing rights relating to delinquent loans to Agency	—	—	—	—	—	104	104
Balance, December 31, 2022	$ 10,708	$ 3,457	$ (22,098)	$ (478)	$ (137,193)	$ 4,012,737	$ 3,867,133
Changes in fair value recognized during the year relating to assets still held at December 31, 2022	$ (1,098)	$ 196	$ (42,220)	$ (478)	$ (110,356)	$ 449,435	$ 295,479

(1) For the purpose of this table, CRT derivative, interest rate lock commitment ("IRLC"), and CRT strip asset and liability positions are shown net.

(2) The Company had transfers among the fair value levels arising from transfers of IRLCs to loans acquired for sale at fair value upon purchase of the respective loans.

Liabilities	Year ended December 31, 2022 (in thousands)
Interest-only security payable:	
Balance, December 31, 2021	$ 10,593
Changes in fair value included in results of operations arising from:	
Changes in instrument - specific credit risk	—
Other factors	11,332
	11,332
Balance, December 31, 2022	$ 21,925
Changes in fair value recognized during the year relating to liability outstanding at December 31, 2022	$ 11,332

Assets (1)	Year ended December 31, 2021 Loans acquired for sale	Loans at fair value	Excess servicing spread	CRT derivatives	Interest rate lock commitments	CRT strips	Mortgage servicing rights	Total
	(in thousands)							
Balance, December 31, 2020	$ 33,875	$ 8,027	$ 131,750	$ 31,795	$ 72,386	$ (202,792)	$1,755,236	$1,830,277
Purchases and issuances	86,285	—	—	—	76,934	—	—	163,219
Repayments and sales	(90,603)	(5,121)	(134,624)	(93,839)	—	(111,872)	—	(436,059)
Capitalization of interest	—	251	1,280	—	—	—	—	1,531
ESS received pursuant to a recapture agreement with PFSI	—	—	557	—	—	—	—	557
Amounts received pursuant to sales of loans	—	—	—	—	—	—	1,484,629	1,484,629
Changes in fair value included in results of operations arising from:								
Changes in instrument - specific credit risk	—	—	—	—	—	—	—	—
Other factors	572	610	1,037	81,008	(156,840)	287,827	(337,186)	(122,972)
	572	610	1,037	81,008	(156,840)	287,827	(337,186)	(122,972)
Transfers of:								
Loans from REO	—	394	—	—	—	—	—	394
Interest rate lock commitments to loans acquired for sale (2)	—	—	—	—	9,971	—	—	9,971
Recombination of MSRs with loans at fair value resulting from consolidation of a VIE	—	—	—	—	—	—	(9,824)	(9,824)
Balance, December 31, 2021	$ 30,129	$ 4,161	$ —	$ 18,964	$ 2,451	$ (26,837)	$2,892,855	$2,921,723
Changes in fair value recognized during the year relating to assets still held at December 31, 2021	$ (157)	$ (371)	$ —	$ (12,829)	$ 2,451	$ 175,955	$ (337,186)	$ (172,137)

(1) For the purpose of this table, CRT derivative, IRLC, and CRT strip asset and liability positions are shown net.
(2) The Company had transfers among the fair value levels arising from transfers of IRLCs to loans acquired for sale at fair value upon purchase of the respective loans.

Liabilities	Year ended December 31, 2021
	(in thousands)
Interest-only security payable:	
Balance, December 31, 2020	$ 10,757
Changes in fair value included in income arising from:	
Changes in instrument - specific credit risk	—
Other factors	(164)
	(164)
Balance, December 31, 2021	$ 10,593
Changes in fair value recognized during the year relating to liability outstanding at December 31, 2021	$ (164)

Assets (1)	Loans acquired for sale	Loans at fair value	Excess servicing spread	CRT derivatives	Interest rate lock commitments	CRT strips	Repurchase agreement derivatives	Firm commitments to purchase CRT securities	Mortgage servicing rights	Total
	Year ended December 31, 2020									
	(in thousands)									
Balance, December 31, 2019	$ 18,567	$14,426	$178,586	$ 115,863	$ 11,154	$ 54,930	$ 5,275	$ 109,513	$1,535,705	$ 2,044,019
Purchases and issuances	74,339	1,058	—	—	369,802	—	—	—	—	445,199
Repayments and sales	(58,290)	(5,734)	(32,377)	52,530	—	(54,929)	(5,328)	(128,786)	(7)	(232,921)
Capitalization of interest	—	—	8,418	—	—	—	—	—	—	8,418
ESS received pursuant to a recapture agreement with PFSI	—	—	2,093	—	—	—	—	—	—	2,093
Amounts (incurred) received pursuant to sales of loans	—	—	—	—	—	—	—	(38,161)	1,158,475	1,120,314
Changes in fair value included in results of operations arising from:										
Changes in instrument - specific credit risk	—	—	—	—	—	—	—	—	—	—
Other factors	(741)	(837)	(24,970)	(136,598)	536,943	(24,292)	53	(121,067)	(938,937)	(710,446)
	(741)	(837)	(24,970)	(136,598)	536,943	(24,292)	53	(121,067)	(938,937)	(710,446)
Transfers of:										
Loans to REO	—	(886)	—	—	—	—	—	—	—	(886)
Firm commitment to purchase CRT securities to CRT strips	—	—	—	—	—	(178,501)	—	178,501	—	—
Interest rate lock commitments to loans acquired for sale (2)	—	—	—	—	(845,513)	—	—	—	—	(845,513)
Balance, December 31, 2020	$ 33,875	$ 8,027	$131,750	$ 31,795	$ 72,386	$(202,792)	$ —	$ —	$1,755,236	$ 1,830,277
Changes in fair value recognized during the year relating to assets still held at December 31, 2020	$ (899)	$ (1,033)	$ (24,970)	$ (82,633)	$ 72,386	$ (79,221)	$ —	$ —	$ (938,937)	$(1,055,307)

(1) For the purpose of this table, CRT derivative, IRLC, and CRT strip asset and liability positions are shown net.
(2) The Company had transfers among the fair value levels arising from transfers of IRLCs to loans acquired for sale at fair value upon purchase of the respective loans.

Liabilities	Year ended December 31, 2020
	(in thousands)
Interest-only security payable:	
Balance, December 31, 2019	$ 25,709
Changes in fair value included in income arising from:	
Changes in instrument - specific credit risk	—
Other factors	(14,952)
	(14,952)
Balance, December 31, 2020	$ 10,757
Changes in fair value recognized during the year relating to liability outstanding at December 31, 2020	$ (14,952)

Financial Statement Items Measured at Fair Value under the Fair Value Option

Following are the fair values and related principal amounts due upon maturity of loans accounted for under the fair value option (including loans acquired for sale, loans held in consolidated VIEs, and distressed loans):

	December 31, 2022			December 31, 2021		
	Fair value	Principal amount due upon maturity	Difference	Fair value	Principal amount due upon maturity	Difference
	(in thousands)					
Loans acquired for sale at fair value:						
Current through 89 days delinquent	$1,819,551	$ 1,795,445	$ 24,106	$4,166,177	$ 4,048,967	$ 117,210
90 or more days delinquent:						
Not in foreclosure	1,666	1,927	(261)	4,848	5,801	(953)
In foreclosure	716	809	(93)	—	—	—
	2,382	2,736	(354)	4,848	5,801	(953)
	$1,821,933	$ 1,798,181	$ 23,752	$4,171,025	$ 4,054,768	$ 116,257
Loans at fair value:						
Held in consolidated VIEs:						
Current through 89 days delinquent	$1,508,540	$ 1,788,911	$(280,371)	$1,561,794	$ 1,514,575	$ 47,219
90 or more days delinquent:						
Not in foreclosure	1,231	1,642	(411)	2,141	2,722	(581)
In foreclosure	171	226	(55)	630	809	(179)
	1,402	1,868	(466)	2,771	3,531	(760)
	1,509,942	1,790,779	(280,837)	1,564,565	1,518,106	46,459
Distressed:						
Current through 89 days delinquent	498	682	(184)	782	1,455	(673)
90 or more days delinquent:						
Not in foreclosure	1,230	2,964	(1,734)	1,181	3,824	(2,643)
In foreclosure	1,729	2,728	(999)	2,198	5,490	(3,292)
	2,959	5,692	(2,733)	3,379	9,314	(5,935)
	3,457	6,374	(2,917)	4,161	10,769	(6,608)
	$1,513,399	$ 1,797,153	$(283,754)	$1,568,726	$ 1,528,875	$ 39,851

Following are the changes in fair value included in current period results of operations by consolidated statements of operations line item for financial statement items accounted for under the fair value option:

	Year ended December 31, 2022				
	Net loan servicing fees	Net (losses) gains on investments and financings	Net gains on loans acquired for sale	Net interest expense	Total
	(in thousands)				
Assets:					
Mortgage-backed securities at fair value	$ —	$ (576,758)	$ —	$ 12,697	$ (564,061)
Loans acquired for sale at fair value	—	—	(539,102)	—	(539,102)
Loans at fair value	—	(300,478)	—	(1,109)	(301,587)
Credit risk transfer strips	—	(49,967)	—	—	(49,967)
MSRs at fair value	449,435	—	—	—	449,435
	$ 449,435	$ (927,203)	$ (539,102)	$ 11,588	$ (1,005,282)
Liabilities:					
Interest-only security payable at fair value	$ —	$ (11,332)	$ —	$ —	$ (11,332)
Asset-backed financings at fair value	—	283,586	—	1,773	285,359
	$ —	$ 272,254	$ —	$ 1,773	$ 274,027

	Year ended December 31, 2021				
	Net loan servicing fees	Net (losses) gains on investments and financings	Net gains on loans acquired for sale	Net interest expense	Total
			(in thousands)		
Assets:					
Mortgage-backed securities at fair value	$ —	$ (74,354)	$ —	$ (9,323)	$ (83,677)
Loans acquired for sale at fair value	—	—	3,960	—	3,960
Loans at fair value	—	(11,925)	—	(1,624)	(13,549)
ESS at fair value	—	1,037	—	1,280	2,317
Credit risk transfer strips	—	287,827	—	—	287,827
MSRs at fair value	(337,186)	—	—	—	(337,186)
	$ (337,186)	$ 202,585	$ 3,960	$ (9,667)	$ (140,308)
Liabilities:					
Interest-only security payable at fair value	$ —	$ 164	$ —	$ —	$ 164
Asset-backed financings at fair value	—	19,708	—	(1,144)	18,564
	$ —	$ 19,872	$ —	$ (1,144)	$ 18,728

	Year ended December 31, 2020				
	Net loan servicing fees	Net (losses) gains on investments and financings	Net gains on loans acquired for sale	Net interest expense	Total
			(in thousands)		
Assets:					
Mortgage-backed securities at fair value	$ —	$ 87,852	$ —	$ (23,323)	$ 64,529
Loans acquired for sale at fair value	—	—	817,158	—	817,158
Loans at fair value	—	(7,454)	—	2,776	(4,678)
ESS at fair value	—	(24,970)	—	8,418	(16,552)
Credit risk transfer strips	—	(24,292)	—	—	(24,292)
Firm commitment to purchase CRT securities at fair value	—	(121,067)	(38,161)	—	(159,228)
MSRs at fair value	(938,937)	—	—	—	(938,937)
	$ (938,937)	$ (89,931)	$ 778,997	$ (12,129)	$ (262,000)
Liabilities:					
Interest-only security payable	$ —	$ 14,952	$ —	$ —	$ 14,952
Asset-backed financings at fair value	—	5,519	—	(4,218)	1,301
	$ —	$ 20,471	$ —	$ (4,218)	$ 16,253

Financial Statement Item Measured at Fair Value on a Nonrecurring Basis

Following is a summary of the carrying value of assets that were re-measured during the year based on fair value on a nonrecurring basis:

Real estate acquired in settlement of loans	Level 1	Level 2	Level 3	Total
		(in thousands)		
December 31, 2022	$ —	$ —	$ 1,292	$ 1,292
December 31, 2021	$ —	$ —	$ 5,147	$ 5,147

The following table summarizes the fair value changes recognized during the year on assets held at year end that were remeasured based on fair value on a nonrecurring basis:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Real estate asset acquired in settlement of loans	$ (505)	$ 279	$ (1,638)

The Company remeasures its REO based on fair value when it evaluates the REO for impairment. The Company evaluates its REO for impairment with reference to the respective properties' fair values less costs to sell. REO may be revalued after acquisition due to the Company receiving greater access to the property, the property being held for an extended period or receiving indications that the property's fair value may not be supported by developing market conditions. Any subsequent change in fair value to a level that is less than or equal to the property's cost is recognized in *Results of real estate acquired in settlement of loans* in the Company's consolidated statements of operations.

Fair Value of Financial Instruments Carried at Amortized Cost

Most of the Company's borrowings are carried at amortized cost. The Company's *Assets sold under agreements to repurchase, Mortgage loan participation purchase and sale agreements, Notes payable secured by credit risk transfer and mortgage servicing assets* and *Exchangeable senior notes* are classified as "Level 3" fair value liabilities due to the Company's reliance on unobservable inputs to estimate these instruments' fair values.

The Company has concluded that the fair values of these borrowings, other than the *Exchangeable senior notes, Notes payable secured by credit risk transfer and mortgage servicing assets* described in *Note 15—Long-Term Debt*, approximate the agreements' carrying values due to the borrowing agreements' variable interest rates and short maturities.

Following are the carrying and fair values of the *Notes payable secured by credit risk transfer and mortgage servicing assets* and *Exchangeable senior notes*:

	December 31, 2022		December 31, 2021	
Instrument	**Carrying value**	**Fair value**	**Carrying value**	**Fair value**
		(in thousands)		
Notes payable secured by credit risk transfer and mortgage servicing assets	$ 2,804,028	$ 2,721,391	$ 2,471,961	$ 2,480,842
Exchangeable senior notes	$ 546,254	$ 471,781	$ 502,459	$ 536,460

The Company estimates the fair value of the *Notes payable secured by credit risk transfer and mortgage servicing assets* and *Exchangeable senior notes* using indications of fair value provided by nonaffiliate brokers.

Valuation Governance

Most of the Company's assets, its *Asset-backed financings at fair value, Interest-only security payable at fair value* and *Derivative and credit risk transfer strip liabilities at fair value* are carried at fair value with changes in fair value recognized in current period results of operations. A substantial portion of these items are "Level 3" fair value assets and liabilities which require the use of unobservable inputs that are significant to the estimation of the fair values of the assets and liabilities. Unobservable inputs reflect the Company's own judgments about the factors that market participants use in pricing an asset or liability and are based on the best information available under the circumstances.

Due to the difficulty in estimating the fair values of "Level 3" fair value assets and liabilities, the Company has assigned responsibility for estimating the fair value of these assets and liabilities to specialized staff and subjects the valuation process to significant senior management oversight:

- PFSI's Financial Analysis and Valuation group (the "FAV group") is responsible for estimating the fair values of "Level 3" fair value assets and liabilities other than IRLCs and maintaining its valuation policies and procedures.
- PFSI's Capital Markets Risk Management staff is responsible for estimating the fair value of the Company's IRLCs which is reviewed by PFSI's Capital Markets Operations group.

With respect to the non-IRLC "Level 3" valuations, the FAV group reports to PFSI's senior management valuation committee, which oversees the valuations. The FAV group monitors the models used for valuation of the Company's "Level 3" fair value assets and liabilities other than IRLCs, including the models' performance versus actual results, and reports those results to PFSI's senior management valuation committee. PFSI's senior management valuation committee includes the Company's chief financial, risk, credit, and deputy chief investment officers as well as other senior members of the Company's finance, capital markets and risk management staffs.

The FAV group is responsible for reporting to PFSI's senior management valuation committee on the changes in the valuation of the non-IRLC "Level 3" fair value assets and liabilities, including major factors affecting the valuation and any changes in model methods and inputs. To assess the reasonableness of its valuations, the FAV group presents an analysis of the effect on the valuation of changes to the significant inputs to the models and for MSRs, comparisons of its estimates of fair value to those procured from nonaffiliates brokers and comparisons of key inputs used in the Company's valuation model to published surveys.

Valuation Techniques and Inputs

The following is a description of the techniques and inputs used in estimating the fair values of “Level 2” and “Level 3” fair value assets and liabilities:

Mortgage-Backed Securities

The Company categorizes its current holdings of securities accounted for as MBS as “Level 2” fair value assets. Fair value of these MBS is established based on quoted market prices for the Company’s MBS holdings or similar securities. Changes in the fair value of MBS are included in *Net (losses) gains on investments and financings* in the consolidated statements of operations.

Loans

Fair value of loans is estimated based on whether the loans are saleable into active markets:

- Loans that are saleable into active markets, comprised of most of the Company’s loans acquired for sale at fair value and all of the loans at fair value held in VIEs, are categorized as “Level 2” fair value assets:
  - For loans acquired for sale, the fair values are established using the loans’ contracted selling price or quoted market price or market price equivalent.
  - For the loans at fair value held in VIEs, the quoted indications of fair value of all of the individual securities issued by the securitization trusts are used to derive fair values for the loans. The Company obtains indications of fair value from nonaffiliated brokers based on comparable securities and validates the brokers’ indications of fair value using pricing models and inputs the Company believes are similar to the models and inputs used by other market participants. The Company adjusts the fair values received from brokers to include the fair value of MSRs attributable to the loans held by the Company included in the VIEs.
- Loans that are not saleable into active markets, comprised of previously sold loans that the Company repurchased pursuant to the representation and warranties it provided to the purchaser and distressed loans, are categorized as “Level 3” fair value assets:
  - Fair value for loans acquired for sale categorized as “Level 3” assets is estimated using a discounted cash flow approach or their contracted selling price when applicable. Inputs to the discounted cash flow model include current interest rates, payment status, property type, discount rates and forecasts of future interest rates, home prices, prepayment speeds, default speeds and loss severities.
  - Distressed loans’ fair values are estimated based on the expected resolution to be realized from the individual asset’s disposition strategy. When a cash flow projection is used to estimate the fair value of the resolution, those cash flows are discounted at annual rates up to 20%.

Derivative and Credit Risk Transfer Strip Assets and Liabilities

CRT Derivatives

The Company categorizes CRT derivatives as “Level 3” fair value assets and liabilities. The fair value of CRT derivatives is based on indications of fair value provided to the Company by nonaffiliated brokers for the certificates representing the beneficial interests in the trusts holding the *Deposits securing credit risk transfer arrangements pledged to creditors*, the Recourse Obligations and the IO ownership interests. Together, the Recourse Obligation and the IO ownership interest comprise the CRT derivative. Fair value of the CRT derivatives is derived by deducting the balance of the *Deposits securing credit risk transfer arrangements pledged to creditors* from the fair value of the certificates.

The Company assesses the fair values it receives from nonaffiliated brokers using the discounted cash flow approach. The significant unobservable inputs used by the Company in its review and approval of the valuation of CRT derivatives are the discount rate, voluntary and involuntary prepayment speeds and the remaining loss (recovery) expectations of the reference loans. Changes in fair value of CRT derivatives are included in *Net (losses) gains on investments and financings* in the consolidated statements of operations.

Following is a quantitative summary of key unobservable inputs used in the Company's review and approval of broker-provided fair values for CRT derivatives:

	December 31, 2022	December 31, 2021
	(dollars in thousands)	
Fair value		
CRT derivatives:		
Assets	$ 1,262	$ 19,627
Liabilities	$ 23,360	$ 663
UPB of loans in reference pools	$ 5,972,060	$ 7,426,288
Key inputs (1)		
Discount rate		
Range	8.7% – 11.1%	3.3% – 5.9%
Weighted average	10.8%	5.7%
Voluntary prepayment speed (2)		
Range	7.5% – 8.3%	12.6% – 13.1%
Weighted average	7.6%	12.7%
Involuntary prepayment speed (3)		
Range	0.5% – 1.3%	(0.1)% – 0.8%
Weighted average	0.6%	0.1%
Remaining loss (recovery) expectation (4)		
Range	0.4% – 0.7%	(0.1)% – 0.6%
Weighted average	0.6%	0.1%

(1) Weighted average inputs are based on fair value amounts of the CRT Agreements, except for remaining loss (recovery) expectation which is based on the UPB of the loans in the reference pools.
(2) Voluntary prepayment speed is measured using Life Voluntary Conditional Prepayment Rate ("CPR").
(3) Involuntary prepayment speed is measured using Life Involuntary CPR. Negative involuntary prepayment speed reflects the expectation for reinstatement to the reference pool of a portion of the loans that previously triggered contractual losses due to delinquency while under CARES Act forbearance upon their expected re-performance, as contractually provided for in certain CRT Agreements.
(4) Remaining loss (recovery) expectation is measured as expected future contractual losses divided by the UPB of the reference loans. Negative remaining loss expectation reflects the expectation of contractual reversals of previously incurred contractual losses due to the expected re-performance of a portion of the loans that experienced delinquency while under CARES Act forbearance.

Interest Rate Lock Commitments

The Company categorizes IRLCs as "Level 3" fair value assets and liabilities. The Company estimates the fair value of IRLCs based on quoted Agency MBS prices, the probability that the loans will be purchased under the commitments (the "pull-through rate") and the Company's estimate of the fair value of the MSRs it expects to receive upon sale of the loans.

The significant unobservable inputs used in the fair value measurement of the Company's IRLCs are the pull-through rates and the estimated MSRs attributed to the mortgage loans subject to the commitments. Significant changes in the pull-through rate or the MSR component of the IRLCs, in isolation, may result in a significant change in the IRLCs' fair value. The financial effects of changes in these inputs are generally inversely correlated as increasing interest rates have a positive effect on the fair value of the MSR component of an IRLC's fair value, but also increase the pull-through rate for the loan principal and interest payment cash flow component that has decreased in fair value. Changes in fair value of IRLCs are included in *Net gains on loans acquired for sale* in the consolidated statements of operations.

Following is a quantitative summary of key unobservable inputs used in the valuation of IRLCs:

	December 31, 2022	December 31, 2021
Fair value (in thousands) (1)	$ (478)	$ 2,451
Committed amount (in thousands)	$ 1,484,384	$ 2,092,129
Key inputs (2)		
Pull-through rate		
Range	54.8% – 100%	64.3% – 100%
Weighted average	92.1%	91.4%
MSR fair value expressed as		
Servicing fee multiple		
Range	1.9 – 7.1	0.5 – 6.3
Weighted average	4.7	4.5
Percentage of UPB		
Range	0.7% – 3.1%	0.3% – 2.7%
Weighted average	1.9%	1.5%

(1) For purposes of this table, IRLC asset and liability positions are shown net.

(2) Weighted-average inputs are based on the committed amounts.

Hedging Derivatives

Fair value of derivative financial instruments actively traded on exchanges are categorized by the Company as "Level 1" fair value assets and liabilities. Fair values of derivative financial instruments based on observable interest rates, volatilities and prices in the MBS or other markets are categorized by the Company as "Level 2" fair value assets and liabilities. Changes in the fair value of hedging derivatives are included in *Net loan servicing fees – From nonaffiliates – Mortgage servicing rights hedging results, Net (losses) gains on investments and financings,* or *Net gains on loans acquired for sale*, as applicable, in the consolidated statements of operations.

Credit Risk Transfer Strips

The Company categorizes CRT strips as "Level 3" fair value assets or liabilities. The fair value of CRT strips is based on indications of fair value provided to the Company by nonaffiliated brokers for the securities representing the beneficial interests in the trusts holding the *Deposits securing credit risk transfer arrangements pledged to creditors,* the IO ownership interest and Recourse Obligation. Together, the IO ownership interest and the Recourse Obligation comprise the CRT strip.

Fair value of the CRT strips is derived by deducting the balance of the *Deposits securing credit risk transfer arrangements pledged to creditors* from the fair value of the securities derived from indications provided by the nonaffiliated brokers. Through December 31, 2021, the Company applied adjustments to the fair value derived from these indications to account for contractual restrictions limiting PMT's ability to sell certain of the certificates. During the quarter ended March 31, 2022, the contractual restrictions on the Company's ability to sell the certificates were removed. Therefore, the Company did not include adjustments relating to restrictions on the transfer of certificates in the fair value of the certificates as of December 31, 2022.

The Company assesses the indications of fair value it receives from nonaffiliated brokers using the discounted cash flow approach. The significant unobservable inputs used by the Company in its review and approval of the valuation of the CRT strips are the discount rate, voluntary and involuntary prepayment speeds and the remaining loss expectations of the reference loans. Changes in fair value of CRT strips are included in *Net (losses) gains on investments and financings* in the consolidated statements of operations.

Following is a quantitative summary of key unobservable inputs used in the Company's review and approval of the adjusted broker-provided fair values used to derive the value of the CRT strip liabilities:

	December 31, 2022	December 31, 2021
	(dollars in thousands)	
Fair value	$ 137,193	$ 26,837
UPB of loans in the reference pools	$ 19,343,464	$ 23,382,619
Key inputs (1)		
Discount rate		
Range	4.3% – 11.3%	3.8% – 6.4%
Weighted average	10.5%	6.0%
Voluntary prepayment speed (2)		
Range	7.7% – 7.9%	14.9% – 17.6%
Weighted average	7.7%	17.2%
Involuntary prepayment speed (3)		
Range	0.6% – 2.0%	0.5% – 1.4%
Weighted average	0.8%	0.6%
Remaining loss expectation (4)		
Range	0.7% – 2.0%	0.3% – 1.1%
Weighted average	0.9%	0.5%

(1) Weighted average inputs are based on fair value amounts of the CRT arrangements, except for remaining loss expectation which is based on the UPB of the loans in the reference pools.
(2) Voluntary prepayment speed is measured using Life Voluntary CPR.
(3) Involuntary prepayment speed is measured using Life Involuntary CPR.
(4) Remaining loss expectation is measured as expected future losses divided by the UPB of the loans in the reference pools.

Mortgage Servicing Rights

The Company categorizes MSRs as "Level 3" fair value assets. The Company uses a discounted cash flow approach to estimate the fair value of MSRs. The fair value of MSRs is derived from the net positive cash flows associated with the servicing agreements. The Company receives a servicing fee based on the remaining UPB of the loans subject to the servicing agreements and generally has the right to receive other remuneration including various mortgagor-contracted fees such as late charges and collateral reconveyance charges, and is generally entitled to retain any placement fees earned on funds held pending remittance of mortgagor principal, interest, tax and insurance payments.

The key inputs used in the estimation of the fair value of MSRs include the prepayment speeds of the underlying loans, the applicable pricing spreads, and the annual per-loan cost to service the loans, all of which are unobservable. Significant changes to any of those inputs in isolation could result in a significant change in the MSR fair value measurement. Changes in these key inputs are not directly related. Changes in the fair value of MSRs are included in *Net loan servicing fees – From nonaffiliates – Change in fair value of mortgage servicing rights* in the consolidated statements of operations.

MSRs are generally subject to loss in fair value when mortgage interest rates decrease, when returns required by market participants (pricing spreads) increase, or when annual per-loan cost of servicing increases. Reductions in the fair value of MSRs affect income primarily through recognition of the change in fair value.

Following are the key inputs used in determining the fair value of MSRs at the time of initial recognition:

	Year ended December 31,		
	2022	2021	2020
	(MSR recognized and UPB of underlying loans amounts in thousands)		
MSR recognized	$ 670,343	$ 1,484,629	$ 1,158,475
UPB of underlying loans	$ 39,014,110	$ 108,424,795	$ 103,136,121
Weighted average annual servicing fee rate (in basis points)	34	28	28
Key inputs (1)			
Pricing spread (2)			
Range	5.5% – 8.9%	6.0% – 8.0%	6.7% – 11.3%
Weighted average	6.3%	7.2%	7.8%
Prepayment speed (3)			
Range	5.5% – 19.7%	5.5% – 12.5%	7.0% – 20.9%
Weighted average	9.3%	8.2%	10.0%
Equivalent average life (in years)			
Range	4.0 – 9.6	3.5 – 9.1	3.5 – 9.2
Weighted average	8.0	8.1	7.4
Annual per-loan cost of servicing			
Range	$73 – $81	$80 – $81	$78 – $81
Weighted average	$79	$80	$80

(1) Weighted average inputs are based on UPB of the underlying loans.

(2) Through December 31, 2021, the Company applied pricing spreads to the forward rates implied by the United States Dollar London Inter-Bank Offered Rate ("LIBOR")/swap curve for purposes of discounting cash flows relating to MSRs. Effective January 1, 2022, the Company adopted the United States Treasury ("Treasury") securities yield curve for purpose of discounting cash flows relating to MSRs. The change in reference rate did not have a significant effect on the Company's estimates of fair value.

(3) Prepayment speed is measured using Life Total CPR, which includes both voluntary and involuntary prepayments. Equivalent average life is provided as supplementary information.

Following is a quantitative summary of key inputs used in the valuation of MSRs as of the dates presented, and the effect on the fair value from adverse changes in those inputs:

	December 31, 2022	December 31, 2021
	(Fair value, UPB of underlying loans and effect on fair value amounts in thousands)	
Fair value	$ 4,012,737	$ 2,892,855
UPB of underlying loans	$ 229,971,035	$ 216,065,626
Weighted average annual servicing fee rate (in basis points)	29	28
Weighted average note interest rate	3.5%	3.0%
Key inputs (1)		
Pricing spread (2)		
Range	4.9% – 8.8%	6.0% – 8.0%
Weighted average	5.7%	7.2%
Effect on fair value of (3):		
5% adverse change	$(52,004)	$(39,826)
10% adverse change	$(102,727)	$(78,613)
20% adverse change	$(200,497)	$(153,220)
Prepayment speed (4)		
Range	5.1% – 17.4%	5.5% – 12.5%
Weighted average	6.3%	8.2%
Equivalent average life (in years)		
Range	3.5 – 9.3	3.5 – 9.1
Weighted average	8.9	8.1
Effect on fair value of (3):		
5% adverse change	$(51,044)	$(59,726)
10% adverse change	$(100,544)	$(117,162)
20% adverse change	$(195,201)	$(225,672)
Annual per-loan cost of servicing		
Range	$69 – $69	$80 – $81
Weighted average	$69	$80
Effect on fair value of (3):		
5% adverse change	$(17,629)	$(17,585)
10% adverse change	$(35,258)	$(35,169)
20% adverse change	$(70,515)	$(70,338)

(1) Weighted-average inputs are based on the UPB of the underlying loans.

(2) Through December 31, 2021, the Company applied pricing spreads to the forward rates implied by the United States Dollar LIBOR/swap curve for purposes of discounting cash flows relating to MSRs. Effective January 1, 2022, the Company adopted the Treasury securities yield curve for the purpose of discounting cash flows relating to MSRs. The change in reference rate did not have a significant effect on the Company’s estimates of fair value.

(3) These sensitivity analyses are limited in that they were performed as of a particular date; only account for the estimated effect of the movements in the indicated inputs; do not incorporate changes in those inputs in relation to other inputs; are subject to the accuracy of the models and inputs used; and do not incorporate other factors that would affect the Company’s overall financial performance in such events, including operational adjustments to account for changing circumstances. For these reasons, these estimates should not be viewed as earnings forecasts.

(4) Prepayment speed is measured using Life Total CPR, which includes both voluntary and involuntary prepayments. Equivalent average life is provided as supplementary information.

Real Estate Acquired in Settlement of Loans

REO is measured based on its fair value on a nonrecurring basis and is categorized as a “Level 3” fair value asset. Fair value of REO is established by using a current estimate of fair value from either a broker’s price opinion, a full appraisal, or the price given in a pending contract of sale.

REO fair values are reviewed by PLS staff appraisers when the Company obtains multiple indications of fair value and there is a significant difference between the indications of fair value. PLS staff appraisers will attempt to resolve the difference between the indications of fair value. In circumstances where the staff appraiser is not able to generate adequate data to support a fair value conclusion, the staff appraiser obtains an additional appraisal to determine fair value. Recognized changes in the fair value of REO are included in *Results of real estate acquired in settlement of loans* in the consolidated statements of operations.

Note 8—Mortgage-Backed Securities

Following is a summary of activity in the Company's investment in MBS:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Balance at beginning of year	$ 2,666,768	$ 2,213,922	$ 2,839,633
Purchases	3,718,093	2,232,923	2,332,096
Sales	(1,079,826)	(1,300,653)	(1,979,789)
Repayments	(278,373)	(395,747)	(1,042,547)
Changes in fair value included in income arising from:			
Accrual (amortization) of net purchase (discounts) premiums	12,697	(9,323)	(23,323)
Valuation adjustments	(576,758)	(74,354)	87,852
	(564,061)	(83,677)	64,529
Balance at end of year	$ 4,462,601	$ 2,666,768	$ 2,213,922

Following is a summary of the Company's investment in MBS:

	December 31, 2022			
	Principal balance	Unamortized net purchase premiums (discounts)	Accumulated valuation changes	Fair value (1)
		(in thousands)		
Agency fixed-rate pass-through securities	$ 4,693,045	$ 30,423	$ (460,966)	$ 4,262,502
Subordinate credit-linked securities	184,620	52	(6,774)	177,898
Senior non-Agency securities	28,103	(876)	(5,026)	22,201
	$ 4,905,768	$ 29,599	$ (472,766)	$ 4,462,601

	December 31, 2021			
	Principal balance	Unamortized net purchase premiums	Accumulated valuation changes	Fair value (1)
		(in thousands)		
Agency fixed-rate pass-through securities	$ 2,649,238	$ 82,938	$ (65,408)	$ 2,666,768

(1) All MBS have maturities of more than ten years and are pledged to secure *Assets sold under agreements to repurchase* at December 31, 2022 and December 31, 2021.

Note 9—Loans Acquired for Sale at Fair Value

Following is a summary of the distribution of the Company's loans acquired for sale at fair value:

Loan type	December 31, 2022	December 31, 2021
	(in thousands)	
Government-sponsored entity ("GSE") eligible (1)	$ 1,651,554	$ 3,825,901
Held for sale to PLS — Government insured or guaranteed (2)	159,671	314,995
Home equity lines of credit	2,424	3,265
Commercial real estate	—	964
Repurchased pursuant to representations and warranties	8,284	25,900
	$ 1,821,933	$ 4,171,025
Loans pledged to secure:		
Assets sold under agreements to repurchase	$ 1,801,368	$ 4,007,377
Mortgage loan participation purchase and sale agreements	—	52,102
	$ 1,801,368	$ 4,059,479

(1) GSE eligibility refers to the eligibility of loans for sale to Fannie Mae or Freddie Mac. The Company sells or finances a portion of its GSE eligible loan production to other investors, including PLS.

(2) The Company is not approved by Ginnie Mae as an issuer of Ginnie Mae-guaranteed securities which are backed by government-insured or guaranteed loans. The Company sells government-insured or guaranteed loans that it purchases from correspondent sellers to PLS, which is a Ginnie Mae-approved issuer, and earns a sourcing fee as described in Note 4 – *Transactions with Related Parties – Operating activities – Correspondent Production Activities.*

Note 10—Loans at Fair Value

Loans at fair value are comprised primarily of loans held in VIEs securing asset-backed financings as discussed in Note 6 – *Variable Interest Entities – Subordinate Mortgage-Backed Securities*.

Following is a summary of the distribution of the Company's loans at fair value:

Loan type	December 31, 2022	December 31, 2021
	(in thousands)	
Loans in VIEs:		
Agency-conforming loans secured by investment properties	$ 1,459,160	$ 1,495,914
Fixed interest rate jumbo loans	50,782	68,651
	1,509,942	1,564,565
Distressed loans	3,457	4,161
	$ 1,513,399	$ 1,568,726
Loans at fair value pledged to secure:		
Asset-backed financings at fair value (1)	$ 1,509,942	$ 1,564,565
Assets sold under agreements to repurchase	206	359
	$ 1,510,148	$ 1,564,924

(1) As discussed in Note 6 – *Variable Interest Entities – Subordinate Mortgage-Backed Securities*, the Company holds a portion of the securities issued by the VIEs. At December 31, 2022 and 2021, $84.0 million and $85.3 million, respectively, of such certificates were pledged to secure *Assets sold under agreements to repurchase*.

Note 11— Derivative and Credit Risk Transfer Strip Assets and Liabilities

Derivative and credit risk transfer assets and liabilities are summarized below:

	December 31, 2022	December 31, 2021
	(in thousands)	
Derivative assets	$ 84,940	$ 34,238
	$ 84,940	$ 34,238
Derivative liabilities	$ 30,033	$ 15,369
Credit risk transfer strip liabilities	137,193	26,837
	$ 167,226	$ 42,206

The Company records all derivatives and CRT strip liabilities at fair value and records changes in fair value in current period results of operations.

Derivative Activities

Derivative Notional Amounts and Fair Value of Derivatives

The Company had the following derivative assets and liabilities recorded within *Derivative assets* and *Derivative and credit risk transfer liabilities* and related margin deposits recorded in *Other* assets on the consolidated balance sheets:

	December 31, 2022			December 31, 2021		
		Fair value			Fair value	
Instrument	Notional amount (1)	Derivative assets	Derivative liabilities	Notional amount (1)	Derivative assets	Derivative liabilities
			(in thousands)			
Hedging derivatives subject to master netting arrangements (2):						
Call options on interest rate futures purchase contracts	1,950,000	$ 2,906	$ —	1,450,000	$ 2,828	$ —
Put options on interest rate futures purchase contracts	1,785,000	8,130	—	1,775,000	3,180	—
Forward purchase contracts	3,929,833	418	15,196	6,945,340	5,806	3,620
Forward sale contracts	11,661,925	43,435	17,279	10,466,182	6,307	13,782
MBS put options	1,050,000	2,783	—	3,400,000	3,662	—
Swaption purchase contracts	—	—	—	2,200,000	39	—
Swap futures	—	—	—	1,425,100	—	—
Bond futures	867,900	—	—	181,800	—	—
Other derivatives not subject to master netting arrangements:						
CRT derivatives	5,972,060	1,262	23,360	7,426,288	19,627	663
Interest rate lock commitments	1,484,384	3,877	4,355	2,092,129	3,897	1,446
Total derivative instruments before netting		62,811	60,190		45,346	19,511
Netting		22,129	(30,157)		(11,108)	(4,142)
		$ 84,940	$ 30,033		$ 34,238	$ 15,369
Margin deposits placed with (received from) derivative counterparties included in derivative balances above, net		$ 52,286			$ (6,965)	
Derivative assets pledged to secure:						
Notes payable secured by credit risk transfer and mortgage servicing assets		$ 1,262			$ 19,627	

(1) Notional amounts provide an indication of the volume of the Company's derivative activity.

(2) All hedging derivatives are interest rate derivatives and are used as economic hedges.

Netting of Financial Instruments

The Company has elected to net derivative asset and liability positions, and cash collateral placed with or received from its derivatives counterparties when subject to a legally enforceable master netting arrangement. The derivative financial instruments that are not subject to master netting arrangements are CRT derivatives and IRLCs. As of December 31, 2022 and December 31, 2021, the Company was not a party to any reverse repurchase agreements or securities lending transactions that are required to be disclosed in the following tables.

Derivative Assets, Financial Instruments and Collateral Held by Counterparty

The following table summarizes by significant counterparty the amount of derivative asset positions after considering master netting arrangements and financial instruments or cash pledged that do not meet the accounting guidance qualifying for setoff accounting.

	December 31, 2022				December 31, 2021			
	Net amount of assets presented in the consolidated balance sheet	Gross amounts not offset in the consolidated balance sheet			Net amount of assets presented in the consolidated balance sheet	Gross amounts not offset in the consolidated balance sheet		
		Financial instruments	Cash collateral received	Net amount		Financial instruments	Cash collateral received	Net amount
	(in thousands)							
CRT derivatives	$ 1,262	$ —	$ —	$ 1,262	$ 19,627	$ —	$ —	$19,627
Interest rate lock commitments	3,877	—	—	3,877	3,897	—	—	3,897
Morgan Stanley & Co. LLC	33,703	—	—	33,703	—	—	—	—
Bank of America, N.A.	14,666	—	—	14,666	1,958	—	—	1,958
RJ O'Brien & Associates, LLC	11,036	—	—	11,036	6,008	—	—	6,008
Wells Fargo Securities, LLC	6,980	—	—	6,980	—	—	—	—
Credit Suisse Securities (USA) LLC	5,827	—	—	5,827	—	—	—	—
Goldman Sachs & Co. LLC	2,789	—	—	2,789	—	—	—	—
Barclays Capital Inc.	2,013	—	—	2,013	—	—	—	—
J.P. Morgan Securities LLC	110	—	—	110	2,085	—	—	2,085
Other	2,677	—	—	2,677	663	—	—	663
	$ 84,940	$ —	$ —	$84,940	$ 34,238	$ —	$ —	$34,238

Derivative Liabilities, Financial Liabilities and Collateral Pledged by Counterparty

The following table summarizes by significant counterparty the amount of derivative liabilities and assets sold under agreements to repurchase after considering master netting arrangements and financial instruments or cash pledged that do not meet the accounting guidance to qualify for setoff accounting. All assets sold under agreements to repurchase represent sufficient collateral or exceed the liability amount recorded on the consolidated balance sheet.

	December 31, 2022				December 31, 2021			
	Net amount of liabilities presented in the consolidated balance sheet	Gross amounts not offset in the consolidated balance sheet			Net amount of liabilities presented in the consolidated balance sheet	Gross amounts not offset in the consolidated balance sheet		
		Financial instruments (1)	Cash collateral pledged	Net amount		Financial instruments (1)	Cash collateral pledged	Net amount
	(in thousands)							
Interest rate lock commitments	$ 4,355	$ —	$ —	$ 4,355	$ 1,446	$ —	$ —	$ 1,446
CRT derivatives	23,360	—	—	23,360	663	—	—	663
J.P. Morgan Securities LLC	1,605,813	(1,605,813)	—	—	726,762	(726,762)	—	—
Bank of America, N.A.	1,239,293	(1,239,293)	—	—	1,088,417	(1,088,417)	—	—
Barclays Capital Inc.	1,115,265	(1,115,265)	—	—	1,086,104	(1,085,723)	—	381
Credit Suisse Securities (USA) LLC	675,639	(675,639)	—	—	832,610	(830,954)	—	1,656
Daiwa Capital Markets	439,089	(439,089)	—	—	496,231	(495,973)	—	258
Amherst Pierpont Securities LLC	283,928	(283,294)	—	634	125,090	(125,090)	—	—
RBC Capital Markets, L.P.	268,581	(268,581)	—	—	1,293,754	(1,293,754)	—	—
Wells Fargo Securities, LLC	262,512	(262,512)	—	—	106,088	(104,674)	—	1,414
Morgan Stanley & Co. LLC	218,730	(218,730)	—	—	412,321	(410,413)	—	1,908
Citigroup Global Markets Inc.	197,229	(195,807)	—	1,422	131,312	(129,016)	—	2,296
Goldman Sachs & Co. LLC	156,952	(156,952)	—	—	217,459	(212,580)	—	4,879
BNP Paribas	153,220	(153,220)	—	—	171,185	(171,185)	—	—
Nomura Holdings America, Inc	4,444	(4,444)	—	—	14	—	—	14
Other	262	—	—	262	454	—	—	454
	$6,648,672	$(6,618,639)	$ —	$ 30,033	$6,689,910	$(6,674,541)	$ —	$ 15,369

(1) Amounts represent the UPB of *Assets sold under agreements to repurchase*.

Following are the net gains (losses) recognized by the Company on derivative financial instruments and the consolidated statements of operations line items where such gains and losses are included:

Derivative activity	Consolidated statements of operations line	Year ended December 31, 2022	2021	2020
		(in thousands)		
Interest rate lock commitments	Net gains on loans acquired for sale (1)	$ (2,928)	$ (69,935)	$ 61,232
CRT derivatives	Net (losses) gains on investments and financings	$ (3,838)	$ 81,008	$ (136,598)
Repurchase agreement derivatives	Interest expense	$ —	$ —	$ 53
Hedged item:				
Interest rate lock commitments and loans acquired for sale	Net gains on loans acquired for sale	$ 553,965	$ 141,901	$ (459,309)
Mortgage servicing rights	Net loan servicing fees	$ (204,879)	$ (345,041)	$ 601,743
Fixed-rate and prepayment sensitive assets and LIBOR-indexed repurchase agreements	Net (losses) gains on investments and financings	$ —	$ —	$ 32,932

(1) Represents net change in fair value of IRLCs from the beginning to the end of the year. Amounts recognized at the date of commitment and fair value changes recognized during the period until purchase of the underlying loan or cancellation of the commitment are shown in the rollforward of IRLCs for the period in Note 7 **–** *Fair Value – Financial Statement Items Measured at Fair Value on a Recurring Basis*.

Credit Risk Transfer Strips

Following is a summary of the Company's holdings of CRT strips:

Credit risk transfer strips contractually restricted from sale (1)	**December 31, 2022**	**December 31, 2021**
	(in thousands)	
Currently unrestricted	$ (137,193)	$ 5,978
To maturity	—	(32,815)
	$ (137,193)	$ (26,837)

(1) Through December 31, 2021, the terms of the agreement underlying the CRT securities restricted sales of the securities, other than under agreements to repurchase, without the approval of Fannie Mae, for specified periods from the date of issuance. The restriction on sales was removed during the quarter ended March 31, 2022.

Note 12—Mortgage Servicing Rights

Following is a summary of MSRs:

	Year ended December 31,		
	2022	**2021**	**2020**
		(in thousands)	
Balance at beginning of year	$ 2,892,855	$ 1,755,236	$ 1,535,705
MSRs resulting from loan sales	670,343	1,484,629	1,158,475
Transfer to Agency of mortgage servicing rights relating to delinquent loans	104	—	—
Sales	—	—	(7)
Changes in fair value:			
Due to changes in inputs used in valuation model (1)	819,727	(39,056)	(706,107)
Other changes in fair value (2)	(370,292)	(298,130)	(232,830)
	449,435	(337,186)	(938,937)
Recombination with loans at fair value resulting from initial consolidation of VIEs (3)	—	(9,824)	—
Balance at end of year	$ 4,012,737	$ 2,892,855	$ 1,755,236

	December 31, 2022	**December 31, 2021**
	(in thousands)	
Fair value of mortgage servicing rights pledged to secure *Assets sold under agreements to repurchase* and *Notes payable secured by credit risk transfer and mortgage servicing assets*	$ 3,962,820	$ 2,863,544

(1) Primarily reflects changes in prepayment speed, pricing spread, servicing cost, and UPB for the underlying loans.
(2) Represents changes due to realization of expected cash flows.
(3) As discussed in Note 6 – *Variable Interest Entities – Subordinate Mortgage-Backed Securities*, the Company consolidates certain VIEs. During 2021, the Company initially consolidated a VIE holding loans for which it had previously recognized MSRs. Upon initial consolidation of the VIE, the Company recombined the MSRs with the loans in the consolidated VIE to *Loans at fair value*.

Servicing fees relating to MSRs are recorded in *Net loan servicing fees – From nonaffiliates* on the Company's consolidated statements of operations and are summarized below:

	Year ended December 31, 2022	2021	2020
		(in thousands)	
Contractually-specified servicing fees	$ 625,210	$ 526,245	$ 406,060
Ancillary and other fees:			
Late charges	2,526	1,701	1,498
Other	23,515	67,400	54,959
	26,041	69,101	56,457
	$ 651,251	$ 595,346	$ 462,517
Average MSR servicing portfolio	$ 222,847,593	$ 196,996,623	$ 147,832,880
MSR recapture fees	$ 13,744	$ 50,859	$ 28,373
UPB of loans recaptured	$ 2,533,115	$ 9,389,260	$ 6,012,911

Note 13— Other Assets

Other assets are summarized below:

	December 31, 2022	December 31, 2021
	(dollars in thousands)	
Derivative margin deposits	$ 51,463	$ 193,418
Interest receivable	31,027	15,168
Servicing fees receivable	15,727	16,756
Correspondent lending receivables	8,967	27,539
Other receivables	7,657	15,299
Real estate acquired in settlement of loans	7,734	14,382
Other	12,416	3,737
	$ 134,991	$ 286,299
Real estate acquired in settlement of loans pledge to secure *Assets sold under agreements to repurchase*	$ 3,297	$ 7,293

Note 14—Short-Term Debt

The borrowing facilities described throughout these Notes 14 and 15 contain various covenants, including financial covenants governing the Company and its subsidiaries' net worth, debt-to-equity ratio, and liquidity. Management believes that the Company was in compliance with these covenants as of December 31, 2022.

Assets Sold Under Agreements to Repurchase

Following is a summary of financial information relating to assets sold under agreements to repurchase:

	Year ended December 31, 2022	2021	2020
		(dollars in thousands)	
Weighted average interest rate (1)	2.81%	1.36%	1.62%
Average balance	$ 5,625,345	$ 6,161,755	$ 5,508,147
Total interest expense	$ 165,436	$ 97,078	$ 102,131
Maximum daily amount outstanding	$ 8,834,936	$ 8,882,538	$ 10,433,609

(1) Excludes the effect of amortization of debt issuance costs of $7.6 million, $13.2 million and $12.9 million for the years ended December 31, 2022, 2021 and 2020 respectively.

	December 31, 2022	December 31, 2021
	(dollars in thousands)	
Carrying value:		
Unpaid principal balance		
Committed facilities	$ 6,189,344	$ 5,799,975
Uncommitted facilities	429,295	874,566
	6,618,639	6,674,541
Unamortized debt issuance costs	(2,111)	(2,651)
	$ 6,616,528	$ 6,671,890
Weighted average interest rate	5.03%	1.08%
Available borrowing capacity (1):		
Committed	$ 217,279	$ 289,436
Uncommitted	4,762,056	4,875,433
	$ 4,979,335	$ 5,164,869
Margin deposits (received from) placed with counterparties included in (*Accounts payable and accrued liabilities*) *Other* assets, net	$ (13,630)	$ 67,997
Assets securing agreements to repurchase:		
Mortgage-backed securities	$ 4,462,601	$ 2,666,768
Loans acquired for sale at fair value	$ 1,801,368	$ 4,007,377
Loans at fair value:		
Securities retained in asset-backed financings	$ 84,044	$ 85,266
Distressed	$ 206	$ 359
CRT arrangements	$ 455,552	$ —
Mortgage servicing rights (2)	$ 2,092,794	$ 1,598,090
Servicing advances	$ 100,888	$ 93,455
Real estate acquired in settlement of loans	$ 3,297	$ 7,293

(1) The amount the Company is able to borrow under asset repurchase agreements is tied to the fair value of unencumbered assets eligible to secure those agreements and the Company's ability to fund the agreements' margin requirements relating to the assets financed.

(2) Beneficial interests in Fannie Mae MSRs are pledged for both *Assets sold under agreements to repurchase* and *Notes payable secured by credit risk transfer and mortgage servicing assets.*

Following is a summary of maturities of outstanding advances under repurchase agreements by maturity date:

Remaining maturity at December 31, 2022	Unpaid principal balance
	(in thousands)
Within 30 days	$ 4,342,147
Over 30 to 90 days	1,763,899
Over 90 days to 180 days	62,439
Over 180 days to 1 year	65,154
Over 1 year to 2 years	385,000
	$ 6,618,639
Weighted average maturity (in months)	2.2

The Company is subject to margin calls during the period the repurchase agreements are outstanding and therefore may be required to repay a portion of the borrowings before the respective repurchase agreements mature if the fair value (as determined by the applicable lender) of the assets securing those repurchase agreements decreases.

The amounts at risk (the fair value of the assets pledged plus the related margin deposit, less the amount advanced by the counterparty and interest payable) and maturity information relating to the Company's assets sold under agreements to repurchase are summarized by pledged asset and counterparty below as of December 31, 2022:

Loans, REO and MSRs

Counterparty	Amount at risk (in thousands)	Weighted-average maturity: Advances	Weighted-average maturity: Facility
Bank of America, N.A.	$ 25,572	January 30, 2023	June 5, 2024
Goldman Sachs & Co. LLC	$ 2,104	March 16, 2023	December 23, 2023
Citibank, N.A.	$ 12,072	February 24, 2023	April 26, 2024
Barclays Capital Inc.	$ 19,214	February 26, 2023	November 13, 2024
JPMorgan Chase & Co.	$ 20,817	March 3, 2023	June 17, 2024
Wells Fargo Securities, LLC	$ 15,321	March 16, 2023	November 17, 2023
Credit Suisse First Boston Mortgage Capital LLC	$ 15,093	March 13, 2023	May 31, 2024
Morgan Stanley & Co. LLC	$ 11,452	March 12, 2023	January 3, 2024
RBC Capital Markets, L.P.	$ 8,996	March 27, 2023	November 10, 2023
BNP Paribas Corporate & Institutional Banking	$ 6,480	March 12, 2023	November 30, 2024

Securities

Counterparty	Amount at risk (in thousands)	Weighted average maturity
Bank of America, N.A.	$ 24,165	January 17, 2023
Citibank, N.A.	$ 25,570	February 22, 2023
Barclays Capital Inc.	$ 52,623	January 26, 2023
JPMorgan Chase & Co.	$ 38,860	January 20, 2023
Wells Fargo Securities, LLC	$ 3,206	January 6, 2023
Daiwa Capital Markets America Inc.	$ 9,904	January 23, 2023
Amherst Pierpont Securities LLC	$ 6,744	January 20, 2023
Nomura Holdings America, Inc	$ 1,707	January 3, 2023

CRT Arrangements

Counterparty	Amount at risk (in thousands)	Weighted average maturity
Bank of America, N.A.	$ 60,630	April 3, 2023
Goldman Sachs & Co. LLC	$ 99,664	March 28, 2023
Citibank, N.A.	$ 57,911	July 3, 2023

Mortgage Loan Participation Purchase and Sale Agreement

One of the borrowing facilities secured by loans acquired for sale is in the form of a mortgage loan participation purchase and sale agreement. Participation certificates, each of which represents an undivided beneficial ownership interest in a pool of loans that have been pooled with Fannie Mae or Freddie Mac, are sold to the lender pending the securitization of such loans and the sale of the resulting security. The commitment between the Company and a nonaffiliate to sell such security is also assigned to the lender at the time a participation certificate is sold.

The purchase price paid by the lender for each participation certificate is based on the trade price of the security, plus an amount of interest expected to accrue on the security to its anticipated delivery date, minus a present value adjustment, any related hedging costs and a holdback amount. The holdback amount is based on a percentage of the purchase price and is not required to be paid to the Company until the settlement of the security and its delivery to the lender.

The mortgage loan participation purchase and sale agreement is summarized below:

	Year ended December 31,		
	2022	2021	2020
		(dollars in thousands)	
Average balance	$ 30,024	$ 33,827	$ 44,432
Weighted average interest rate (1)	2.99%	1.42%	1.63%
Total interest expense	$ 1,023	$ 606	$ 902
Maximum daily amount outstanding	$ 91,857	$ 89,879	$ 96,570

(1) Excludes the effect of amortization of debt issuance costs of $125,000 for the years ended December 31, 2022 and 2021 and $176,000 for the year ended 2020.

	December 31, 2022	December 31, 2021
	(dollars in thousands)	
Carrying value:		
Amount outstanding	$ —	$ 49,988
Unamortized debt issuance costs	—	—
	$ —	$ 49,988
Weighted average interest rate	—	1.48%
Loans acquired for sale pledged to secure mortgage loan participation purchase and sale agreements	$ —	$ 52,102

Note 15—Long-Term Debt

Notes Payable Secured By Credit Risk Transfer and Mortgage Servicing Assets

CRT Arrangement Financing

The Company, through various wholly-owned subsidiaries, issued secured term notes (the "CRT Term Notes") to qualified institutional buyers under Rule 144A of the Securities Act of 1933, as amended (the "Securities Act"). All of the CRT Term Notes rank pari passu with each other.

Following is a summary of the CRT Term Notes outstanding:

Term notes	Issuance date	Issuance amount	Unpaid principal balance	Annual interest rate: Index	Annual interest rate: Spread	Maturity date: Stated	Maturity date: Optional extension (1)
		(in thousands)					
2021 1R	March 4, 2021	$ 659,156	$ 298,655	LIBOR	2.90%	February 28, 2024	February 27, 2026
2020 1R	February 14, 2020	$ 350,000	58,295	LIBOR	2.35%	March 1, 2023 (2)	February 27, 2025
2019 3R	October 16, 2019	$ 375,000	54,811	LIBOR	2.70%	October 27, 2022 (3)	October 29, 2024
2019 2R	June 11, 2019	$ 638,000	180,933	LIBOR	2.75%	May 29, 2023	May 29, 2025
			$ 592,694				

(1) The indentures relating to these issuances provide the Company with the option of extending the maturity dates of certain of the CRT Term Notes under the conditions specified in the respective agreements.
(2) During January 2023, the Company exercised its option to extend the maturity of this note
(3) During October 2022, the Company exercised its option to extend the maturity of this note.

Fannie Mae MSR Financing

The Company, through a subsidiary, PMT ISSUER TRUST-FMSR, finances MSRs and ESS pledged or sold by PMC through a combination of repurchase agreements and term financing.

The repurchase agreement financing for Fannie Mae MSRs is effected through the issuance of a Series 2017-VF1 Note dated December 20, 2017 (the "FMSR VFN") by PMT ISSUER TRUST-FMSR to PMC which is then sold to qualified institutional buyers under an agreement to repurchase. The amount outstanding under the FMSR VFN is included in *Assets sold under agreements to repurchase* in the Company's consolidated balance sheets. The FMSR VFN has a committed borrowing capacity of $700 million and matures on May 31, 2024.

The Company's term financing for Fannie Mae MSRs through PMT ISSUER TRUST – FMSR is effected through the issuance of term notes (the "FT-1 Notes") to qualified institutional buyers under Rule 144A of the Securities Act.

The FT1 Notes and the FMSR VFN are secured by certain participation certificates relating to Fannie Mae MSRs and rank pari passu with each other.

Following is a summary of the term financing of the Company's Fannie Mae MSRs:

FT-1 Note	Issuance date	Issuance amount	Unpaid principal balance	Annual interest rate: Index	Annual interest rate: Spread	Maturity date: Stated	Maturity date: Optional extension (1)
		(in thousands)					
2022	June 28, 2022	$305,000	$ 305,000	SOFR (2)	4.19%	June 25, 2027	(3)
2021	March 30, 2021	$350,000	350,000	LIBOR	3.00%	March 25, 2026	March 27, 2028
2018	April 25, 2018	$450,000	450,000	LIBOR	2.35%	April 25, 2023	April 25, 2025
			$ 1,105,000				

(1) The indentures relating to these issuances provide the Company with the option of extending the maturity dates of the term notes under the conditions specified in the respective agreements.
(2) Secured Overnight Financing Rate ("SOFR").
(3) Either June 26, 2028 or June 25, 2029.

Freddie Mac MSR Financing

The Company, through PMC and PMH, finances certain MSRs (inclusive of any related excess servicing spread arising therefrom) relating to loans pooled into Freddie Mac securities through various credit agreements. The total loan amount available under the agreements is $1.6 billion, bearing interest at an annual rate equal to SOFR plus a spread as defined in each agreement, with a weighted average maturity of June 2024. The total loan amount available under the agreements may be reduced by other debt outstanding with the counterparties. Advances under the credit agreements are secured by MSRs relating to loans serviced for Freddie Mac guaranteed securities.

Following is a summary of financial information relating to notes payable secured by credit risk transfer and mortgage servicing assets:

	Year ended December 31, 2022	2021	2020
	(dollars in thousands)		
Average balance	$ 2,646,597	$ 2,635,601	$ 1,771,370
Weighted average interest rate (1)	4.92%	3.08%	3.19%
Total interest expense	$ 137,021	$ 86,753	$ 59,261
Maximum daily amount outstanding	$ 3,629,637	$ 3,336,480	$ 2,032,665

(1) Excludes the effect of amortization of debt issuance costs of $6.7 million, $5.5 million and $2.7 million for the years ended December 31, 2022, 2021 and 2020, respectively.

	December 31, 2022	December 31, 2021
	(dollars in thousands)	
Carrying value:		
Unpaid principal balance:		
CRT Term Notes	$ 592,694	$ 1,204,636
FT-1 Notes	1,105,000	800,000
Freddie Mac credit agreements	1,115,000	475,000
	2,812,694	2,479,636
Unamortized debt issuance costs	(8,666)	(7,675)
	$ 2,804,028	$ 2,471,961
Weighted average interest rate	7.30%	3.02%
Assets securing notes payable:		
Mortgage servicing rights (1)	$ 3,962,820	$ 2,863,544
CRT Agreements:		
Deposits securing CRT arrangements	$ 869,742	$ 1,704,911
Derivative assets	$ 1,262	$ 19,627

(1) Beneficial interests in Freddie Mac MSRs are pledged as collateral for the *Notes payable secured by credit risk transfer and mortgage servicing assets.* Beneficial interests in Fannie Mae MSRs are pledged for both *Assets sold under agreements to repurchase* and *Notes payable secured by credit risk transfer and mortgage servicing assets*.

Exchangeable Senior Notes

On March 5 and March 9, 2021, PMC issued $345 million aggregate principal amount of exchangeable senior notes (the "2026 Exchangeable Notes") in a private offering. The 2026 Exchangeable Notes will mature on March 15, 2026 unless repurchased or exchanged in accordance with their terms before such date. The 2026 Exchangeable Notes bear interest at a rate of 5.50% per year, payable semiannually.

On November 4 and November 19, 2019, PMC issued $210 million in principal amount of exchangeable senior notes due 2024 (the "2024 Exchangeable Notes" and, together with the 2026 Exchangeable Notes, the "Exchangeable Notes") in a private offering. The 2024 Exchangeable Notes will mature on November 1, 2024 unless repurchased or exchanged in accordance with their terms before such date. The 2024 Exchangeable Notes bear interest at 5.50% per year, payable semiannually.

The 2026 Exchangeable Notes and the 2024 Exchangeable Notes are fully and unconditionally guaranteed by the Company and are exchangeable for Common Shares, cash, or a combination thereof, at PMC's election, at any time until the close of business on the second scheduled trading day immediately preceding the maturity date, subject to the satisfaction of certain conditions if the exchange occurs before December 15, 2025 and August 1, 2024, respectively. The exchange rates are equal to 46.1063 and 40.101 Common Shares per $1,000 principal amount of the 2026 Exchangeable Notes and 2024 Exchangeable Notes, respectively, and are subject to adjustment upon the occurrence of certain events, but will not be adjusted for any accrued and unpaid interest.

Following is financial information relating to the Exchangeable Notes:

	Year ended December 31, 2022	2021	2020
	(in thousands)		
Average balance	$ 541,233	$ 445,064	$ 269,247
Weighted average interest rate (1)	5.64%	7.74%	6.43%
Interest expense:			
Coupon	$ 30,525	$ 27,152	$ 15,556
Amortization of:			
Conversion option (2)	—	7,306	1,801
Issuance cost	2,843	2,289	1,490
	$ 33,368	$ 36,747	$ 18,847

	December 31, 2022	December 31, 2021
	(in thousands)	
Carrying value:		
UPB	$ 555,000	$ 555,000
Conversion option allocated to *Additional paid-in capital* (2)	—	(40,952)
Unamortized debt issuance costs	(8,746)	(11,589)
	(8,746)	(52,541)
	$ 546,254	$ 502,459

(1) Excludes the effect of amortization of debt issuance and conversion option costs.

(2) As discussed in Note 3 – *Significant Accounting Policies – Accounting Standard Adopted in 2022*, the Company adopted ASU 2020-06 effective January 1, 2022. As a result of the adoption of ASU 2020-06, the Company reclassified approximately $50.3 million of issuance discount attributable to the conversion options originally recognized in the issuance of *Exchangeable senior notes* from *Additional paid-in capital* to the carrying value of the *Exchangeable senior notes* and $9.4 million of previously recognized accrual of the issuance discount, as an adjustment to the *Accumulated deficit* effective January 1, 2022.

Asset-Backed Financing of Variable Interest Entities at Fair Value

Following is a summary of financial information relating to the asset-backed financings at fair value described in *Note 6 – Variable Interest Entities – Subordinate Mortgage-Backed Securities:*

	Year ended December 31, 2022	2021	2020
	(dollars in thousands)		
Average balance	$ 1,512,590	$ 447,247	$ 203,795
Total interest expense	$ 53,570	$ 15,076	$ 10,971
Weighted average interest rate (1)	3.42%	3.63%	3.30%

(1) Excludes the effect of amortization (accrual) of debt issuance costs (premiums) of $1.8 million, $(1.1) million and $4.2 million for the years ended December 31, 2022, 2021 and 2020, respectively.

	December 31, 2022	December 31, 2021
	(dollars in thousands)	
Fair value	$ 1,414,955	$ 1,469,999
Unpaid principal balance	$ 1,681,410	$ 1,442,379
Weighted average interest rate	3.22%	3.18%

The asset-backed financings are non-recourse liabilities and are secured solely by the assets of consolidated VIEs and not by any other assets of the Company. The assets of the VIEs are the only source of funds for repayment of the certificates.

Maturities of Long-Term Debt

Contractual maturities of long-term debt obligations (based on stated maturity dates) are as follows:

	Total	Year ended December 31, 2023	2024	2025	2026	2027	Thereafter
	(in thousands)						
Notes payable secured by credit risk transfer and mortgage servicing assets (1)	$2,812,694	$689,227	$1,468,467	$ —	$350,000	$305,000	$ —
Exchangeable senior notes	555,000	—	210,000	—	345,000	—	—
Asset-backed financings at fair value (2)	1,681,410	—	—	—	—	—	1,681,410
Interest-only security payable at fair value (2)	21,925	—	—	—	—	—	21,925
Total	$5,071,029	$689,227	$1,678,467	$ —	$695,000	$305,000	$1,703,335

(1) Based on stated maturity. As discussed above, certain of the *Notes payable secured by credit risk transfer and mortgage servicing assets* allow the Company to exercise optional extensions.

(2) Contractual maturity does not reflect expected repayment as borrowers of the underlying loans generally have the right to repay their loans at any time.

Note 16—Liability for Losses Under Representations and Warranties

Following is a summary of the Company's liability for losses under representations and warranties:

	Year ended December 31, 2022	2021	2020
	(in thousands)		
Balance, beginning of year	$ 40,249	$ 21,893	$ 7,614
Provision for losses:			
Pursuant to loan sales	4,442	25,029	19,316
Reduction in liability due to change in estimate	(4,227)	(5,812)	(4,457)
Losses incurred, net	(993)	(861)	(580)
Balance, end of year	$ 39,471	$ 40,249	$ 21,893
UPB of loans subject to representations and warranties at end of year	$ 228,339,312	$213,944,023	$163,592,788

Note 17—Commitments and Contingencies

Commitments

The following table summarizes the Company's outstanding contractual commitments:

	December 31, 2022
	(in thousands)
Commitments to purchase loans acquired for sale	$ 1,484,384

Contingencies

Litigation

From time to time, the Company may be involved in various legal and regulatory proceedings, claims and legal actions arising in the ordinary course of business. The amount, if any, of ultimate liability with respect to such matters cannot be determined, but despite the inherent uncertainties of litigation, management believes that the ultimate disposition of any such proceedings and exposure will not have, individually or taken together, a material adverse effect on the financial condition, results of operations, or cash flows of the Company.

Cessation of the LIBOR Index

The Company historically used a LIBOR index to establish the applicable interest rates in lending and financing transactions. One-week and two-month United States Dollar LIBOR rates were discontinued as of December 31, 2021 and non-U.S. dollar LIBOR settings have ceased to be representative. In addition, the principal United States Dollar LIBOR tenors (overnight and one, three, six and 12 months) will cease to be published by any administrator or will no longer be representative as of June 30, 2023. The Company services LIBOR-based adjustable rate mortgages and other financial arrangements that may incorporate fallback provisions or replacement provisions related to the LIBOR transition.

The discontinuation of LIBOR could affect the Company's interest expense and earnings, cost of capital, and the fair value of certain of its assets and the instruments used to hedge their value. Furthermore, the transition away from widely used benchmark rates like LIBOR could result in customers or other market participants challenging the determination of their interest or dividend payments, disputing the interpretations or implementation of contract or instrument "fallback" provisions and other transition related changes.

Note 18—Shareholders' Equity

Preferred Shares of Beneficial Interest

Preferred shares of beneficial interest are summarized below:

Preferred Share series	Description (1)	Number of shares	Liquidation preference	Issuance discount	Carrying value	Dividends per share, year ended December 31, 2022	2021	2020
Fixed-to-floating rate cumulative redeemable				**(in thousands, except dividends per share)**				
A	8.125% Issued March 2017	4,600	$ 115,000	$ 3,828	$111,172	$ 2.03	$ 2.03	$ 2.03
B	8.00% Issued July 2017	7,800	195,000	6,465	188,535	$ 2.00	$ 2.00	$ 2.00
Fixed-rate cumulative redeemable								
C	6.75% Issued August 2021	10,000	250,000	8,225	241,775	$ 1.68	$ 0.52	—
		22,400	$ 560,000	$18,518	$541,482			

(1) Par value is $0.01 per share.

The Company's Series A Fixed-to-Floating Rate Cumulative Redeemable Preferred Shares of Beneficial Interest (the "Series A Preferred Shares") pay cumulative dividends at a fixed rate of 8.125% per year based on the $25.00 per share liquidation preference to, but not including, March 15, 2024. From, and including, March 15, 2024 and thereafter, the Company will pay cumulative dividends on the Series A Preferred Shares at a floating rate equal to three-month LIBOR as calculated on each applicable dividend determination date plus a spread of 5.831% per year based on the $25.00 per share liquidation preference.

The Company's Series B Fixed-to-Floating Rate Cumulative Redeemable Preferred Shares of Beneficial Interest (the "Series B Preferred Shares") pay cumulative dividends at a fixed rate of 8.00% per year based on the $25.00 per share liquidation preference to, but not including, June 15, 2024. From, and including, June 15, 2024 and thereafter, the Company will pay cumulative dividends on the Series B Preferred Shares at a floating rate equal to three-month LIBOR as calculated on each applicable dividend determination date plus a spread of 5.99% per year based on the $25.00 per share liquidation preference.

The Company's Series C Fixed Rate Cumulative Redeemable Preferred Shares of Beneficial Interest (the "Series C Preferred Shares" together with the Series A Preferred Shares and Series B Preferred Shares, the "Preferred Shares") pay cumulative dividends at a fixed rate of 6.75% per year based on the $25.00 per share liquidation preference to, but not including, August 24, 2026.

The Series A Preferred Shares, the Series B Preferred Shares and Series C Preferred Shares will not be redeemable before March 15, 2024, June 15, 2024 and August 24, 2026, respectively, except in connection with the Company's qualification as a REIT for U.S. federal income tax purposes or upon the occurrence of a change of control. On or after the date the Preferred Shares become redeemable, or 120 days after the first date on which such change of control occurred, the Company may, at its option, redeem any or all of the Preferred Shares at $25.00 per share plus any accumulated and unpaid dividends to, but not including, the redemption date.

The Preferred Shares have no stated maturity, are not subject to any sinking fund or mandatory redemption and will remain outstanding indefinitely unless redeemed or repurchased by the Company or converted into Common Shares in connection with a change of control by the holders of the Preferred Shares.

Common Shares of Beneficial Interest

"At-The-Market" (ATM) Equity Offering Program

The Company periodically enters into ATM equity offering programs allowing it to offer and sell securities on an as-and-when-needed basis through designated broker-dealers. On June 15, 2021, the Company entered into a new ATM equity offering program allowing it to offer up to $200 million in Common Shares, all of which were available for issuance as December 31, 2022.

Following is a summary of the activities under the ATM equity offering program:

	Year ended December 31, 2020
	(in thousands)
Number of Common Shares issued	241
Gross proceeds	$ 5,654
Net proceeds	$ 5,597

Common Share Repurchase Program

The Company has a Common Share repurchase program. On October 24, 2022, the Company's board of trustees approved an increase to the Company's Common Share repurchase authorization from $400 million to $500 million.

The following table summarizes the Company's Common Share repurchase activity:

	Year ended December 31,			Cumulative
	2022	2021	2020	total (1)
		(in thousands)		
Common Shares repurchased	6,094	3,099	2,767	26,691
Cost of Common Shares repurchased (2)	$ 87,992	$ 56,855	$ 37,267	$ 398,739

(1) Amounts represent the Common Share repurchase program total from its inception in August 2015 through December 31, 2022.
(2) Cumulative total cost of Common Shares repurchased includes $533,824 of transaction fees.

Note 19—Net (Losses) Gains on Investments and Financings

Net (losses) gains on investments and financings are summarized below:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
From nonaffiliates:			
Mortgage-backed securities	$ (576,758)	$ (74,354)	$ 87,852
Loans at fair value:			
Held in VIEs	(301,164)	(12,536)	(6,617)
Distressed	686	611	(837)
CRT arrangements	(65,137)	368,999	(145,938)
Firm commitment to purchase CRT securities	—	—	(121,067)
Asset-backed financings at fair value	283,586	19,708	5,519
Hedging derivatives	—	—	32,932
	(658,787)	302,428	(148,156)
From PFSI – Excess servicing spread	—	1,651	(22,729)
	$ (658,787)	$ 304,079	$ (170,885)

Note 20—Net Gains on Loans Acquired for Sale

Net gains on loans acquired for sale are summarized below:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
From nonaffiliates:			
Cash losses:			
Sales of loans	$ (1,196,384)	$ (1,487,649)	$ (326,214)
Hedging activities	596,295	188,733	(504,506)
	(600,089)	(1,298,916)	(830,720)
Non-cash gains:			
Recognition of fair value of firm commitment to purchase CRT securities	—	—	(38,161)
Receipt of MSRs in mortgage loan sale transactions	670,343	1,484,629	1,158,475
Provision for losses relating to representations and warranties provided in loan sales:			
Pursuant to loans sales	(4,442)	(25,029)	(19,316)
Reduction of liability due to change in estimate	4,227	5,812	4,457
	(215)	(19,217)	(14,859)
Change in fair value of loans and derivatives			
Interest rate lock commitments	(2,928)	(69,935)	61,232
Loans	(4,057)	31,072	(12,279)
Hedging derivatives	(42,330)	(46,832)	45,197
	(49,315)	(85,695)	94,150
	620,813	1,379,717	1,199,605
Total from nonaffiliates	20,724	80,801	368,885
From PFSI – cash gains	4,968	6,472	11,037
	$ 25,692	$ 87,273	$ 379,922

Note 21—Net Interest Expense

Net interest expense is summarized below:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Interest income:			
From nonaffiliates:			
Cash and short-term investments	$ 6,912	$ 938	$ 3,804
Mortgage-backed securities	133,640	36,180	59,461
Loans acquired for sale at fair value	103,300	125,438	103,221
Loans at fair value:			
Held in consolidated variable interest entities	59,263	17,014	10,609
Distressed	219	369	493
Deposits securing CRT arrangements	21,324	559	7,012
Placement fees relating to custodial funds	57,961	13,366	28,804
Other	1,175	95	313
	383,794	193,959	213,717
From PFSI – Excess servicing spread	—	1,280	8,418
	383,794	195,239	222,135
Interest expense:			
To nonaffiliates:			
Assets sold under agreements to repurchase	165,436	97,078	102,131
Mortgage loan participation purchase and sale agreements	1,023	606	902
Notes payable secured by credit risk transfer and mortgage servicing assets	137,021	86,753	59,261
Exchangeable senior notes	33,368	36,747	18,847
Asset-backed financings at fair value	53,570	15,076	10,971
Interest shortfall on repayments of loans serviced for Agency securitizations	15,806	64,519	71,516
Interest on loan impound deposits	4,196	3,571	3,817
	410,420	304,350	267,445
To PFSI – Assets sold under agreement to repurchase	—	387	3,325
	410,420	304,737	270,770
Net interest expense	$ (26,626)	$ (109,498)	$ (48,635)

Note 22—Share-Based Compensation

The Company has adopted an equity incentive plan ("2019 Plan") which provides for the issuance of equity based awards based on PMT's Common Shares that may be made by the Company to its officers and trustees, and the members, officers, trustees, directors and employees of PCM, PFSI, or their affiliates and to PCM, PFSI and other entities that provide services to PMT and the employees of such other entities.

The 2019 Plan is administered by the Company's compensation committee, pursuant to authority delegated by PMT's board of trustees, which has the authority to make awards to the eligible participants referenced above, and to determine what form the awards will take, and the terms and conditions of the awards.

The Company's 2019 Plan allows for the grant of restricted and performance-based share and unit awards.

The shares underlying award grants will again be available for award under the 2019 Plan if:

- any shares subject to an award granted under the 2019 Plan are forfeited, canceled, exchanged or surrendered;
- an award terminates or expires without a distribution of shares to the participant; or
- shares are surrendered or withheld by PMT as payment of either the exercise price of an award and/or withholding taxes for an award.

Restricted share units have been awarded to trustees and officers of the Company and to other employees of PFSI and its subsidiaries at no cost to the grantees. Such awards generally vest over a one- to three-year period. The Company expect 0% to 6% forfeiture rates based on the grantees' classifications.

The following table summarizes the Company's share-based compensation activity:

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Grants:			
Restricted share units	134	105	92
Performance share units	151	126	112
	285	231	204
Grant date fair value:			
Restricted share units	$ 2,101	$ 1,992	$ 1,978
Performance share units	2,350	2,399	2,425
	$ 4,451	$ 4,391	$ 4,403
Vestings:			
Restricted share units	79	123	129
Performance share units (1)	41	48	143
	120	171	272
Forfeitures:			
Restricted share units	—	—	4
Performance share units	13	—	—
	13	—	4
Compensation expense relating to share-based grants	$ 4,310	$ 2,419	$ 2,294

(1) The actual number of performance-based restricted share units ("RSUs"), that vested during the year ended December 31, 2022 was 39,001 Common Shares, which is approximately 32% of the originally granted performance-based RSUs with 80,870 performance-based RSUs that vested with zero attainment.

	December 31, 2022	
	Restricted share units	Performance share units
Shares expected to vest:		
Number of units (in thousands)	225	219
Grant date average fair value per unit	$ 17.31	$ 16.91
Average remaining vesting period (in months)	27	27

Note 23—Income Taxes

The Company has elected to be taxed as a REIT for U.S. federal income tax purposes under Sections 856 through 860 of the Internal Revenue Code. Therefore, PMT generally will not be subject to corporate federal or state income tax to the extent that qualifying distributions are made to shareholders and the Company meets the REIT requirements including the asset, income, distribution and share ownership tests. The Company believes that it has met the distribution requirements, as it has declared dividends sufficient to distribute substantially all of its taxable income. Taxable income will generally differ from net income. The primary differences between net income and the REIT taxable income (before deduction for qualifying distributions) are the taxable income of the TRS and the method of determining the income or loss related to valuation of the REMIC and excess servicing interests owned by the qualified REIT subsidiary.

In general, cash dividends declared by the Company will be considered ordinary income to the shareholders for income tax purposes. Some portion of the dividends may be characterized as capital gain distributions or a return of capital. For tax years beginning after December 31, 2017, the Tax Cuts and Jobs Act (the "Tax Act") (subject to certain limitations) provides a 20% deduction from taxable income for ordinary REIT dividends.

The approximate tax characterization of the Company's distributions is as follows:

Year ended December 31,	Ordinary income	Long term capital gain	Return of capital
2022	86%	0%	14%
2021	100%	0%	0%
2020	75%	25%	0%

The Company has elected to treat its subsidiary, PMC, as a TRS. Income from a TRS is only included as a component of REIT taxable income to the extent that the TRS makes dividend distributions of income to the Company. The TRS made a $30 million distribution in 2022 which did not result in dividend income to the Company but was instead treated as a return of capital as the TRS did not have cumulative or current year tax earnings and profits. A TRS is subject to corporate federal and state income tax. Accordingly, a provision for income taxes for PMC is included in the consolidated statements of operations.

The following table details the Company's provision for (benefit from) income taxes which relates primarily to the TRS for the years presented:

	Year ended December 31, 2022	2021	2020
		(in thousands)	
Current expense (benefit):			
Federal	$ (5)	$ —	$ —
State	—	11	12
Total current expense (benefit)	(5)	11	12
Deferred expense (benefit) :			
Federal	113,894	(14,692)	20,440
State	22,485	2,488	6,905
Total deferred expense (benefit)	136,379	(12,204)	27,345
Total provision for (benefit from) income taxes	$ 136,374	$ (12,193)	$ 27,357

The following table is a reconciliation of the Company's provision for (benefit from) income taxes at statutory rates to the (benefit from) provision for income taxes at the Company's effective rate for the years presented:

	Year ended December 31, 2022		2021		2020	
	Amount	Rate	Amount	Rate	Amount	Rate
			(dollars in thousands)			
Federal income tax expense at statutory tax rate	$ 13,248	21.0%	$ 9,379	21.0%	$ 16,743	21.0%
Effect of non-taxable REIT loss (income)	136,465	216.3%	(46,193)	(103.4)%	15,076	18.9%
State income taxes, net of federal benefit	27,573	43.7%	(7,175)	(16.1)%	5,370	6.7%
Convertible debt permanent adjustment	(6,786)	(10.8)%	(2,215)	(5.0)%	3,446	4.3%
Valuation allowance	(34,121)	(54.0)%	34,011	76.2%	(13,502)	(16.9)%
Other	(5)	(—)%	—	(—)%	224	0.3%
Provision for (benefit from) income taxes	$ 136,374	216.2%	$ (12,193)	(27.3)%	$ 27,357	34.3%

The Company's components of the provision for (benefit from) deferred income taxes are as follows:

	Year ended December 31, 2022	2021	2020
		(in thousands)	
Real estate valuation loss	$ 66	$ 758	$ 437
Mortgage servicing rights	157,559	52,818	27,179
Net operating loss carryforward	4,075	(60,314)	31,622
Liability for losses under representations and warranties	269	(4,435)	(3,486)
Excess interest expense disallowance	9,134	(35,769)	(15,749)
Other	(603)	727	844
Valuation allowance	(34,121)	34,011	(13,502)
Total provision for (benefit from) deferred income taxes	$ 136,379	$ (12,204)	$ 27,345

The components of income taxes payable are as follows:

	December 31, 2022	December 31, 2021
	(in thousands)	
Taxes currently receivable	$ (1,820)	$ (7,620)
Deferred income taxes payable	153,598	17,218
Income taxes payable	$ 151,778	$ 9,598

The tax effects of temporary differences that gave rise to deferred income tax assets and liabilities are presented below:

	December 31, 2022	December 31, 2021
	(in thousands)	
Deferred income tax assets:		
Net operating loss carryforward	$ 121,853	$ 125,929
Excess interest expense disallowance	57,618	66,752
Liability for losses under representations and warranties	9,552	9,821
REO valuation loss	178	244
Other	537	—
Gross deferred tax assets	189,738	202,746
Valuation allowance	—	(34,121)
Deferred tax assets after valuation allowance	189,738	168,625
Deferred income tax liabilities:		
Mortgage servicing rights	341,993	184,433
Other	1,343	1,410
Gross deferred tax liabilities	343,336	185,843
Net deferred income tax liability	$ 153,598	$ 17,218

The net deferred income tax liability is included in *Income taxes payable* in the consolidated balance sheets.

The Company has net operating loss carryforwards of $470.2 million and $466.5 million at December 31, 2022 and December 31, 2021, respectively. Losses that occurred prior to 2018 expire between 2033 and 2036. Net operating losses arising in tax years beginning after December 31, 2017 can be carried forward indefinitely but their use is limited to 80% of taxable income for tax years beginning after December 31, 2020.

We evaluated the deferred tax assets of our TRS and determined that a deferred tax valuation allowance is no longer required due to sufficient TRS GAAP income. In our evaluation, we consider, among other things, taxable loss carryback availability, expectations of sufficient future taxable income, trends in earnings, existence of taxable income in recent years, the future reversal of temporary differences, and available tax planning strategies that could be implemented, if required. We establish valuation allowances based on the consideration of all available evidence using a more-likely-than-not standard.

At December 31, 2022 and December 31, 2021, the Company had no unrecognized tax benefits and does not anticipate any unrecognized tax benefits. Should the accrual of any interest or penalties relative to unrecognized tax benefits be necessary, it is the Company's policy to record such accruals in the Company's income tax accounts. No such accruals existed at December 31, 2022 and December 31, 2021.

The Company files U.S. federal and state income tax returns for both the REIT and the TRS. These federal income tax returns for 2019 and forward are subject to examination. The Company's state income tax returns are generally subject to examination for 2018 and forward.

Note 24—Earnings Per Common Share

The Company grants restricted share units which entitle the recipients to receive dividend equivalents during the vesting period on a basis equivalent to the dividends paid to holders of Common Shares. Unvested share-based compensation awards containing non-forfeitable rights to receive dividends or dividend equivalents (collectively, "dividends") are classified as "participating securities" and are included in the basic earnings per share calculation using the two-class method.

Under the two-class method, all earnings (distributed and undistributed) are allocated to Common Shares and participating securities based on their respective rights to receive dividends. Basic earnings per share is determined by dividing net income available to common shareholders (net income reduced by preferred dividends and income attributable to the participating securities) by the weighted average Common Shares outstanding during the period.

Diluted earnings per share is determined by dividing net income attributable to diluted shareholders, which, during the year ended December 31, 2020, added back to net income the interest expense, net of applicable income taxes, on the 5.375% exchangeable notes due May 1, 2020 by the weighted average Common Shares outstanding, assuming all dilutive securities were issued.

The following table summarizes the basic and diluted earnings per share calculations:

	Year ended December 31,		
	2022	2021	2020
	(in thousands except per share amounts)		
Net (loss) income	$ (73,287)	$ 56,854	$ 52,373
Dividends on preferred shares	(41,819)	(30,891)	(24,938)
Effect of participating securities—share-based compensation awards	(408)	(318)	(287)
Net (loss) income attributable to common shareholders	$ (115,514)	$ 25,645	$ 27,148
Weighted average basic shares outstanding	91,434	97,402	99,373
Dilutive securities–shares issuable under share-based compensation plan	—	—	—
Diluted weighted average shares outstanding	91,434	97,402	99,373
Basic (loss) earnings per share	$ (1.26)	$ 0.26	$ 0.27
Basic (loss) earnings per share	$ (1.26)	$ 0.26	$ 0.27

Calculation of diluted earnings per share requires certain potentially dilutive shares to be excluded when the inclusion of such shares would be anti-dilutive. The following table summarizes the potentially dilutive shares excluded from the diluted earnings per share calculation as inclusion of such shares would have been anti-dilutive:

	Year ended December 31,		
	2022	2021	2020
	(in thousands)		
Shares issuable under share-based compensation plan	136	162	172
Shares issuable pursuant to exchange of the Exchangeable Senior Notes	24,328	—	2,529

Note 25—Segments

The Company operates in four segments as described in Note 1 – *Organization*.

The Company’s reportable segments are identified based on PMT’s investment strategies. The Company’s chief operating decision maker is its chief executive officer. The following disclosures about the Company’s business segments are presented consistent with the way the Company’s chief operating decision maker organizes and evaluates financial information for making operating decisions and assessing performance.

Financial highlights by operating segment are summarized below:

Year ended December 31, 2022	Credit sensitive strategies	Interest rate sensitive strategies	Correspondent production (in thousands)	Corporate	Total
Net investment income:					
Net loan servicing fees	$ —	$ 909,551	$ —	$ —	$ 909,551
Net (losses) gains on investments and financings	(93,739)	(565,048)	—	—	(658,787)
Net gains on loans acquired for sale	5	—	25,687	—	25,692
Net interest expense:					
Interest income	38,810	238,527	103,065	3,392	383,794
Interest expense	52,385	285,304	70,531	2,200	410,420
	(13,575)	(46,777)	32,534	1,192	(26,626)
Other	537	—	52,857	547	53,941
	(106,772)	297,726	111,078	1,739	303,771
Expenses:					
Loan fulfillment and servicing fees payable to PFSI	219	81,696	67,991	—	149,906
Management fees	—	—	—	31,065	31,065
Other	5,575	8,228	15,530	30,380	59,713
	5,794	89,924	83,521	61,445	240,684
Pretax (loss) income	$ (112,566)	$ 207,802	$ 27,557	$ (59,706)	$ 63,087
Total assets at end of year	$ 1,614,977	$ 9,991,621	$ 1,936,797	$ 378,169	$ 13,921,564

Year ended December 31, 2021	Credit sensitive strategies	Interest rate sensitive strategies	Correspondent production (in thousands)	Corporate	Total
Net investment income:					
Net loan servicing fees	$ —	$ (36,022)	$ —	$ —	$ (36,022)
Net (losses) gains on investments and financings:	376,725	(72,646)	—	—	304,079
Net gains on loans acquired for sale	(2)	—	87,275	—	87,273
Net interest expense:					
Interest income	2,739	64,528	125,056	2,916	195,239
Interest expense	59,545	160,525	84,667	—	304,737
	(56,806)	(95,997)	40,389	2,916	(109,498)
Other	3,204	—	171,261	—	174,465
	323,121	(204,665)	298,925	2,916	420,297
Expenses:					
Loan fulfillment and servicing fees payable to PFSI	363	80,295	178,927	—	259,585
Management fees	—	—	—	37,801	37,801
Other	16,115	5,105	33,062	23,968	78,250
	16,478	85,400	211,989	61,769	375,636
Pretax (loss) income	$ 306,643	$ (290,065)	$ 86,936	$ (58,853)	$ 44,661
Total assets at end of year	$ 1,848,294	$ 7,363,878	$ 4,325,750	$ 234,786	$ 13,772,708

Year ended December 31, 2020	Credit sensitive strategies	Interest rate sensitive strategies	Correspondent production	Corporate	Total
			(in thousands)		
Net investment income:					
Net loan servicing fees	$ —	$ 153,696	$ —	$ —	$ 153,696
Net (losses) gains on investments and financings:	(237,049)	66,164	—	—	(170,885)
Net gains on loans acquired for sale	(43,813)	—	423,735	—	379,922
Net interest expense:					
Interest income	8,902	108,036	102,779	2,418	222,135
Interest expense	39,237	153,338	76,892	1,303	270,770
	(30,335)	(45,302)	25,887	1,115	(48,635)
Other	5,857	—	147,600	1,796	155,253
	(305,340)	174,558	597,222	2,911	469,351
Expenses:					
Loan fulfillment and servicing fees payable to PFSI	807	66,374	222,200	—	289,381
Management fees	—	—	—	34,538	34,538
Other	10,996	2,487	30,383	21,836	65,702
	11,803	68,861	252,583	56,374	389,621
Pretax (loss) income	$ (317,143)	$ 105,697	$ 344,639	$ (53,463)	$ 79,730
Total assets at end of year	$ 2,920,558	$ 4,593,127	$ 3,781,010	$ 197,316	$ 11,492,011

Note 26—Regulatory Capital and Liquidity Requirements

The Company, through PMC, is subject to financial eligibility requirements established by the Federal Housing Finance Agency for sellers/servicers eligible to sell or service mortgage loans with Fannie Mae and Freddie Mac. The eligibility requirements include:

- A tangible net worth of $2.5 million plus 25 basis points of the UPB of the Company’s total 1-4 unit servicing portfolio, excluding mortgage loans subserviced for others;
- A tangible net worth/total assets ratio greater than or equal to 6%; and
- A liquidity requirement equal to 3.5 basis points of the aggregate UPB serviced for the Agencies plus 200 basis points of total nonperforming Agency servicing UPB less 70% of such nonperforming Agency servicing UPB in excess of 600 basis points where the underlying loans are in COVID-19 forbearance but were current at the time they entered forbearance.

The Agencies’ capital and liquidity amounts and requirements are summarized below:

	Net worth (1)		Tangible net worth / total assets ratio (1)		Liquidity (1)	
Fannie Mae and Freddie Mac	Actual	Required	Actual	Required	Actual	Required
			(dollars in thousands)			
December 31, 2022	$ 1,138,331	$ 586,436	16%	6%	$ 343,286	$ 79,372
December 31, 2021	$ 938,218	$ 557,229	12%	6%	$ 108,536	$ 74,771

(1) Calculated in accordance with the Agencies’ requirements.

In August 2022, the Agencies issued revised capital and liquidity requirements. The requirements will be effective at various dates beginning September 30, 2023, for issuers of securities guaranteed by seller/servicers of mortgage loans to Fannie Mae and Freddie Mac. The Company believes it was in compliance with the Agencies’ revised requirements as of December 31, 2022.

Noncompliance with the Agencies’ capital and liquidity requirements can result in the Agencies taking various remedial actions up to and including removing the Company’s ability to sell loans to and service loans on behalf of the Agencies.

Note 27—Parent Company Information

The Company's debt financing agreements require PMT and certain of its subsidiaries to comply with financial covenants that include a minimum tangible net worth as summarized below:

	December 31, 2022	
Company consolidated	Debt covenant requirement	Calculated balance (1)
	(in thousands)	
PennyMac Mortgage Investment Trust	$ 1,250,000	$ 1,962,815
PennyMac Operating Partnership, L.P.	$ 700,000	$ 2,018,327
PennyMac Holdings, LLC	$ 250,000	$ 836,113
PennyMac Corp.	$ 300,000	$ 1,141,891

(1) Calculated in accordance with the lenders' requirements.

The Company's subsidiaries are limited from transferring funds to the Parent by these minimum tangible net worth requirements.

PENNYMAC MORTGAGE INVESTMENT TRUST

CONDENSED BALANCE SHEETS

Following are condensed parent-only financial statements for the Company:

	December 31,	
	2022	2021
	(in thousands)	
Assets		
Short-term investment	$ 507	$ 3,542
Investments in subsidiaries	2,220,692	2,518,953
Due from subsidiaries	150	89
Other assets	904	—
Total assets	$ 2,222,253	$ 2,522,584
Liabilities		
Dividends payable	$ 35,658	$ 44,764
Capital notes due to subsidiaries	200,780	100,679
Accounts payable and accrued liabilities	342	1,233
Due to affiliates	280	421
Due to subsidiaries	1,586	244
Total liabilities	238,646	147,341
Shareholders' Equity	1,983,607	2,375,243
Total liabilities and shareholders' equity	$ 2,222,253	$ 2,522,584

PENNYMAC MORTGAGE INVESTMENT TRUST

CONDENSED STATEMENTS OF OPERATIONS

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Income			
Dividends from subsidiaries	$ 214,885	$ 213,794	$ 176,216
Intercompany interest	8	42	140
Other	—	—	475
Total income	214,893	213,836	176,831
Expenses			
Intercompany interest	14,244	3,663	1,509
Other	71	85	62
Total expenses	14,315	3,748	1,571
Income before (benefit from) provision for income taxes and distribution in excess of earnings	200,578	210,088	175,260
(Benefit from) provision for income taxes	(5)	11	13
Income before equity in undistributed earnings of subsidiaries	200,583	210,077	175,247
Distributions in excess of earnings of subsidiaries	(251,409)	(133,576)	(139,620)
Net (loss) income	$ (50,826)	$ 76,501	$ 35,627

PENNYMAC MORTGAGE INVESTMENT TRUST

CONDENSED STATEMENTS OF CASH FLOWS

	Year ended December 31,		
	2022	2021	2020
		(in thousands)	
Cash flows from operating activities:			
Net (loss) income	$ (50,826)	$ 76,501	$ 35,627
Adjustments to reconcile net (loss) income to net cash provided by operating activities:			
Distributions in excess of earnings of subsidiaries	251,409	133,576	139,620
Decrease in due from subsidiaries	753	967	697
(Increase) decrease in other assets	(903)	571	24
(Decrease) increase in accounts payable and accrued liabilities	(891)	854	(1,266)
Decrease (increase) in due from affiliates	(141)	48	(26)
Increase in due to affiliates	1,342	297	27
Net cash provided by operating activities	200,743	212,814	174,703
Cash flows from investing activities:			
Increase in investment in subsidiaries	—	(242,125)	(5,596)
Net decrease (increase) in short-term investments	3,035	2,940	(3,663)
Net cash provided by (used in) investing activities	3,035	(239,185)	(9,259)
Cash flows from financing activities:			
Net increase in intercompany unsecured note payable	100,101	56,300	44,380
Issuance of preferred shares	—	250,000	—
Payment of issuance costs related to preferred shares	—	(8,225)	—
Issuance of Common Shares	—	—	5,654
Payment of issuance costs related to Common Shares	—	—	(57)
Payment of withholding taxes related to share-based compensation	(522)	(730)	(1,629)
Payment of dividends to preferred shareholders	(41,819)	(30,146)	(24,945)
Payment of dividends to common shareholders	(173,546)	(183,973)	(151,580)
Repurchase of Common Shares	(87,992)	(56,855)	(37,267)
Net cash (used in) provided by financing activities	(203,778)	26,371	(165,444)
Net change in cash	—	—	—
Cash at beginning of year	—	—	—
Cash at end of year	$ —	$ —	$ —
Non-cash investing activities:			
Investment in subsidiary pursuant to share based compensation plan	$ 4,309	$ 2,418	$ 2,289
Non-cash financing activities:			
Contribution of equity to subsidiary pursuant to share based compensation plan	$ 4,309	$ 2,418	$ 2,289
Dividends payable	$ 35,658	$ 44,764	$ 46,093

Note 28—Subsequent Events

Management has evaluated all events and transactions through the date the Company issued these consolidated financial statements. During this period:

- All agreements to repurchase assets that matured before the date of this Report were extended or renewed.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

PENNYMAC MORTGAGE INVESTMENT TRUST

By: /s/ David A. Spector
David A. Spector
Chairman and Chief Executive Officer
(Principal Executive Officer)

Dated: February 24, 2023

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed by the following persons on behalf of the registrant in the capacities and on the dates indicated.

Signatures	Title	Date
/s/ David A. Spector David A. Spector	Chairman and Chief Executive Officer (Principal Executive Officer)	February 24, 2023
/s/ Daniel S. Perotti Daniel S. Perotti	Senior Managing Director and Chief Financial Officer (Principal Financial Officer)	February 24, 2023
/s/ Gregory L. Hendry Gregory L. Hendry	Chief Accounting Officer (Principal Accounting Officer)	February 24, 2023
/s/ Scott W. Carnahan Scott W. Carnahan	Trustee	February 24, 2023
/s/ Preston DuFauchard Preston DuFauchard	Trustee	February 24, 2023
/s/ Randall D. Hadley Randall D. Hadley	Trustee	February 24, 2023
/s/ Nancy McAllister Nancy McAllister	Trustee	February 24, 2023
/s/ Renee R Schultz Renee R Schultz	Trustee	February 24, 2023
/s/ Marianne Sullivan Marianne Sullivan	Trustee	February 24, 2023
/s/ Stacey D. Stewart Stacey D. Stewart	Trustee	February 24, 2023
/s/ Catherine A. Lynch Catherine A. Lynch	Trustee	February 24, 2023

EXECUTIVE OFFICERS*

David A. Spector
Chairman and Chief Executive Officer

James Follette
Senior Managing Director and Chief Mortgage Operations Officer

Doug Jones
Trustee, President and Chief Mortgage Banking Officer

Daniel S. Perotti
Senior Managing Director and Chief Financial Officer

William Chang
Senior Managing Director and Chief Investment Officer

Don White
Senior Managing Director and Chief Risk Officer

*as of April 1, 2023

PENNYMAC®
MORTGAGE INVESTMENT TRUST