PennyMac Mortgage Investment Trust Form 424B5 August 01, 2012

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Filed Pursuant to Rule 424(b)(5) Registration Statement No. 333-182261

CALCULATION OF REGISTRATION FEE

	Proposed Maximum			
Title of Each Class of Securities	Amount to be	Aggregate Offering	Amount of	
To Be Registered	Registered(1)	Price(2)	Registration Fee(2)	
Common Shares of Beneficial Interest, par value \$0.01 per share	735,317	\$15,272,534	\$1,750.24	

(1)

Including an indeterminate number of common shares of beneficial interest, or common shares, which may be issued by PennyMac Mortgage Investment Trust with respect to such common shares by way of a share dividend, share split, recapitalization or other similar transaction effected without the receipt of consideration.

(2)

Estimated solely for purposes of calculating the registration fee. In accordance to Rule 457(c) under the Securities Act of 1933, the maximum aggregate offering price shown is based on the average of the high and the low prices per share of PennyMac Mortgage Investment Trust's common shares as reported on the New York Stock Exchange on July 25, 2012, which was \$20.77 per share.

PROSPECTUS SUPPLEMENT (To prospectus dated June 21, 2012)

735,317 Shares

PennyMac Mortgage Investment Trust

Common Shares

This prospectus supplement relates to the resale from time to time of up to 735,317 of our common shares of beneficial interest, par value \$0.01 per share, or common shares, by the selling shareholders identified in this prospectus supplement. See "Selling Shareholders" in this prospectus supplement. The selling shareholders may offer and sell the common shares covered by this prospectus supplement through public or private transactions at prevailing market prices, at prices related to prevailing market prices or at privately negotiated prices.

This prospectus supplement does not necessarily mean that the selling shareholders will offer or sell any of the common shares covered by this prospectus supplement. We cannot predict when or in what amounts the selling shareholders may sell any of the common shares covered by this prospectus supplement. The common shares covered by this prospectus supplement have been registered pursuant to contractual obligations that exist with the selling shareholders.

We are not offering for sale any of our common shares in this prospectus supplement, and we will not receive any proceeds from the sale of any common shares by the selling shareholders from time to time pursuant to this prospectus supplement.

Our common shares are listed on the New York Stock Exchange, or the NYSE, under the trading symbol "PMT." The last reported sale price of our common shares on the NYSE on July 31, 2012 was \$21.07 per share.

We impose certain restrictions on the ownership and transfer of our common shares. You should read the information under the section entitled "Description of Shares of Beneficial Interest Restrictions on Ownership and Transfer" in the accompanying prospectus for a description of these restrictions.

Investing in our common shares involves certain risks. See "Risk Factors" beginning on page S-3 of this prospectus supplement and in the reports we file with the Securities and Exchange Commission pursuant to the Securities Exchange Act of 1934, incorporated by reference in this prospectus supplement and the accompanying prospectus, to read about factors you should consider before making an investment in our common shares.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus supplement is August 1, 2012.

You should rely only on the information contained in or incorporated by reference in this prospectus supplement and the accompanying prospectus. We have not, and the selling shareholders have not, authorized anyone to provide you with different or additional information. If anyone provides you with different or additional information, you should not rely on it. We are not, and the selling shareholders are not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference is accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed since those dates.

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of the offering of our common shares by the selling shareholders. The second part, the accompanying prospectus, gives more general information, some of which may not apply to the offering of our common shares by the selling shareholders. You should read this entire document, including this prospectus supplement, the accompanying prospectus and the documents incorporated herein and therein by reference. In the event that the description of the offering of our common shares by the selling shareholders varies between this prospectus supplement and the accompanying prospectus, you should rely on the information contained in this prospectus supplement. To the extent the information contained in or incorporated by reference into this prospectus supplement differs or varies from the information contained in or incorporated by reference into this prospectus, the information contained in or incorporated by reference into this prospectus supplement updates and supersedes such information.

Unless otherwise indicated or the context requires otherwise, references in this prospectus supplement to "we," "us," "our" and "our company" mean PennyMac Mortgage Investment Trust and its consolidated subsidiaries, including PennyMac Operating Partnership, L.P., or our operating partnership.

PENNYMAC MORTGAGE INVESTMENT TRUST

We are a specialty finance company that invests primarily in residential mortgage loans and mortgage-related assets. Our objective is to provide attractive risk-adjusted returns to our investors over the long-term, principally through dividends and secondarily through capital appreciation. We intend to achieve this objective largely by investing in distressed mortgage assets and acquiring, pooling, securitizing or selling newly originated prime credit quality residential mortgage loans, which we refer to as "correspondent lending." We may supplement these activities through participation in other mortgage-related activities, which are in various states of analysis, planning or implementation, including: (i) the acquisition of real estate investment trust, or REIT, -eligible mortgage-backed securities; (ii) the acquisition of mortgage servicing rights from liquidating and other institutions; and (iii) providing inventory financing of mortgage loans for mortgage lenders.

We are externally managed by our affiliate, PNMAC Capital Management, LLC, or PCM, pursuant to a management agreement. PCM is an investment adviser registered with the Securities and Exchange Commission, or the SEC, that specializes in, and focuses on, residential mortgage loans. Our mortgage loan portfolio is serviced on our behalf primarily by another affiliate, PennyMac Loan Services, LLC, or PLS, pursuant to a loan servicing agreement.

We conduct substantially all of our operations, and make substantially all of our investments, through our operating partnership and its subsidiaries. We are the sole limited partner and one of our subsidiaries is the sole general partner of our operating partnership.

We believe that we qualify, and we have elected to be taxed, as a REIT under the Internal Revenue Code of 1986 beginning with our taxable period ended on December 31, 2009.

Our principal executive offices are located at 6101 Condor Drive, Moorpark, California 93021. Our telephone number is (818) 224-7442. Our website is www.pennymac-reit.com. The information contained on our website is not part of, or incorporated by reference into, this prospectus supplement. We have included our website address only as an inactive textual reference and do not intend it to be an active link to our website.

RISK FACTORS

Investing in our common shares involves risks. You should carefully read and consider the risks described below, as well as the risks described in the section entitled "Risk Factors" in our most recent Annual Report on Form 10-K and any subsequent Quarterly Reports on Form 10-Q, which are incorporated by reference into this prospectus supplement and the accompanying prospectus, and the other information contained in or incorporated by reference into this prospectus supplement and the accompanying prospectus, before making a decision to invest in our common shares. Each of these risks could materially and adversely affect our business, financial condition, results of operations and prospects, and could result in a partial or complete loss of your investment.

Risks Related to The Offering of our Common Shares by the Selling Shareholders

The market price and trading volume of our common shares could be volatile and could decline, resulting in a substantial or complete loss of your investment.

The stock markets, including the NYSE, which is the exchange on which we list our common shares, have experienced significant price and volume fluctuations. As a result, the market price of our common shares could be similarly volatile, and investors in our common shares may experience a decrease in the value of their common shares, including decreases unrelated to our operating performance or prospects. Some of the factors that could negatively affect our share price or result in fluctuations in the price or trading volume of our common shares include:

actual or anticipated changes in our operating results or business prospects;

changes in earnings estimates by securities analysts;

an inability to meet or exceed securities analysts' estimates or expectations;

difficulties or inability to access capital or extend or refinance existing debt;

publication of research reports about us or our industry by securities analysts;

conditions or trends in our industry or sector;

actual or perceived conflicts of interest with PCM, PLS and their affiliated entities and individuals, including our officers;

strategic decisions by us or our competitors, such as acquisitions, divestments, spin-offs, joint ventures, strategic investments or changes in business strategy;

the passage of legislation or other regulatory developments that adversely affect us or our industry;

hedging or arbitrage trading activity in our common shares;

adverse market reaction to the level of leverage we employ;

actions by institutional shareholders;

speculation in the press or investment community;

changes in interest rates;

changes in accounting principles;

additions or departures of key personnel at PCM and/or PLS, including our officers, or a change in control at either of these entities;

future sales of our common shares or securities convertible into, or exchangeable or exercisable for, our common shares, or the perception that such sales may occur;



failure to maintain our REIT qualification or exclusion from the Investment Company Act of 1940;

the realization of any of the other risk factors contained in or incorporated by reference into this prospectus supplement and the accompanying prospectus; and

general market and economic conditions, including continued volatility in the financial and credit markets.

In the past, securities class action litigation has often been instituted against companies following periods of volatility in their share price. This type of litigation could result in substantial costs and divert our management's attention and resources.

There may be future dilution of our common shares.

Our board of trustees is authorized under our declaration of trust to, among other things, authorize the issuance of additional common shares or the issuance of preferred shares of beneficial interest or securities convertible or exchangeable into equity securities, without shareholder approval. Holders of our common shares have no preemptive rights that entitle them to purchase their pro rata share of any offering of shares of any class or series and, therefore, such sales or offerings could result in dilution to our shareholders. We cannot predict the size of future issuances or sales of our common shares or other equity securities into the public market or the effect, if any, that such issuances or sales may have on the market price of our common shares.

We may issue debt or equity securities or securities convertible into equity securities, any of which may be senior to our common shares as to distribution and in liquidation.

In the future, we may issue debt or additional equity securities or securities convertible into or exchangeable for equity securities. Such securities may be senior to our common shares as to distributions. We may also enter into debt-like financing that is unsecured or secured by up to all of our assets. In the event of our liquidation, our lenders and holders of our debt and preferred securities, if any, would receive distributions of our available assets before distributions to the holders of our common shares.

USE OF PROCEEDS

We will not receive any proceeds from the sale of any common shares by the selling shareholders from time to time pursuant to this prospectus supplement. The proceeds from any such sale are solely for the account(s) of the applicable selling shareholder(s). We have agreed, however, to pay certain expenses relating to the registration of the common shares covered by the prospectus supplement. See "Plan of Distribution" in this prospectus supplement.

SELLING SHAREHOLDERS

The selling shareholders may, from time to time, offer and resell pursuant to this prospectus supplement any or all of the common shares covered by this prospectus supplement. When we refer to the "selling shareholders" in this prospectus supplement, we mean those persons specifically identified in the table below, as well as the permitted transferees, pledgees, donees, assignees, successors and others who later come to hold any of the selling shareholders' interests other than through a public sale.

The table below sets forth the name of each selling shareholder and the number of our common shares that each selling shareholder may offer pursuant to this prospectus supplement based on the information available to us. To our knowledge, except as otherwise described in this prospectus supplement, none of the selling shareholders has, or within the past three years has had, any material

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relationship with us or any of our predecessors or affiliates other than as a result of the ownership of the common shares covered by this prospectus supplement.

Because the selling shareholders may offer all, some or none of the common shares pursuant to this prospectus supplement, and because there currently are no agreements, arrangements or understandings with respect to the sale of any of these common shares, no definitive estimate can be given as to the amount of common shares that will be held by the selling shareholders after the completion of the offering. The table below has been prepared assuming that the selling shareholders sell all of the common shares beneficially owned by them that are covered by this prospectus supplement and do not acquire any additional common shares during the offering. We cannot advise you as to whether the selling shareholders will in fact sell any or all of their common shares. In addition, the selling shareholders may have sold, transferred or otherwise disposed of, or may sell, transfer or otherwise dispose of, at any time and from time to time, our common shares in transactions exempt from the registration requirements of the Securities Act of 1933, as amended, or the Securities Act, after the date on which they provided the information set forth in the table below.

The information presented regarding the selling shareholders is based upon representations made by the selling shareholders to us. Information concerning the selling shareholders may change from time to time, and any changed information will be set forth in a supplement to this prospectus supplement.

	Prio	Ownership or to Offering Percentage of	Shares Offered Pursuant to this Prospectus Supplement (Maximum Number	After	Ownership Resale ring ⁽¹⁾ Percentage of
Name of Selling Shareholder	Shares	Class ⁽²⁾	That May Be Sold) ⁽³⁾	Shares	Class ⁽²⁾
Stanford L. Kurland ⁽⁴⁾	286,040	*	127,290	158,750	*
BlackRock Holdco 2, Inc. ⁽⁵⁾	265,188	*	265,188		
Jonathon S. Jacobson ⁽⁶⁾	130,188	*	130,188		
Private National Mortgage Acceptance					
Company, LLC ⁽⁷⁾	75,000	*	75,000		
David A. Spector ⁽⁸⁾	71,061	*	1,061	70,000	*
Richard L. Grubman ⁽⁶⁾	65,094	*	65,094		
Matthew B. Botein ⁽⁶⁾⁽⁹⁾	44,089	*	13,339	30,750	*
Daniel Farb ⁽⁶⁾	16,540	*	16,540		
Matthew Sidman ⁽⁶⁾	16,540	*	16,540		
Joseph F. Mazzella ⁽⁶⁾	9,071	*	9,071		
Jennifer L. Stier ⁽⁶⁾	8,003	*	8,003		
Michael D. Bernstein ⁽⁶⁾	6,669	*	6,669		
Kristin J. Marcus ⁽⁶⁾	1,334	*	1,334		

^{*}

Represents less than 1.0% of our common shares outstanding as of July 31, 2012.

(1)

Because the selling shareholders are not obligated to sell all or any portion of our common shares shown as offered by them, we cannot estimate the actual number of common shares (or actual percentage of the class) of our common shares that will be held by any selling shareholder upon completion of this resale offering.

(2)

Based on 41,466,369 of our common shares outstanding at July 31, 2012, determined in accordance with Rule 13d-3 of the Securities Exchange Act of 1934, or the Exchange Act. Under such rule, beneficial ownership includes any common shares over which the selling shareholder has sole or shared voting or investment power and also any common shares that the selling shareholder has the right to acquire within 60 days of such date through the exercise of options or other rights.

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(3)

This prospectus supplement shall also cover any additional common shares that become issuable in connection with the common shares covered by this prospectus supplement because of any share dividend, share split, recapitalization or other similar transaction effected without the receipt of consideration, which results in an increase in the number of our outstanding common shares.

(4)

Stanford L. Kurland has been the Chairman of our Board of Trustees and our Chief Executive Officer since our formation in 2009. Mr. Kurland is also the Chairman and Chief Executive Officer of Private National Mortgage Acceptance Company, LLC, or PNMAC, which is the parent company of PCM, our external manager, and PLS, our servicer. He also serves as the Chief Executive Officer and a member of the board of each of PCM and PLS. Mr. Kurland owns directly 122,750 of our common shares. He also has indirect beneficial ownership of 6,000 of our common shares held by the Kurland Family Foundation, as to which Mr. Kurland disclaims any beneficial interest, and 157,290 of our common shares held by the Kurland Revocable Trust. This prospectus supplement covers only those 127,290 common shares which Mr. Kurland acquired in a private placement conducted concurrently with our initial public offering.

(5)

An affiliate of BlackRock Holdco 2, Inc., or BlackRock Holdco, owns a minority interest in PNMAC, which is the parent company of PCM, our external manager, and PLS, our servicer. Mark Wiedman, a managing director of an affiliate of BlackRock Holdco, served as a member of our Board of Trustees from our formation in 2009 until March 2012. In addition, see footnote 9 for a description of the relationships between Matthew B. Botein, a managing director of an affiliate of BlackRock Holdco acquired the common shares shown as offered by BlackRock Holdco in a private placement conducted concurrently with our initial public offering.

(6)

The selling shareholder is a current or former member of Highfields Capital Investments LLC, or Highfields. Highfields owns a minority interest in PNMAC, which is the parent company of PCM, our external manager, and PLS, our servicer. The selling shareholder acquired the common shares shown as offered by the selling shareholder in his/her individual capacity as part of a distribution from Highfields of the common shares that Highfields acquired in a private placement conducted concurrently with our initial public offering.

(7)

PNMAC is the parent company of PCM, our external manager, and PLS, our servicer. PNMAC acquired the common shares shown as offered by PNMAC in a private placement conducted concurrently with our initial public offering.

(8)

David A. Spector has been our President, Chief Operating Officer and a member of our Board of Trustees since our formation in 2009. Mr. Spector is also the President and Chief Investment Officer of PNMAC, which is the parent company of PCM, our external manager, and PLS, our servicer. He also serves as Chief Investment Officer, Treasurer and a member of the board of PCM, and as President, Treasurer and a member of the board of PLS. Mr. Spector owns directly 71,061 of our common shares. This prospectus supplement covers only those 1,061 common shares which Mr. Spector acquired in a private placement conducted concurrently with our initial public offering.

(9)

Matthew B. Botein has been a member of our Board of Trustees since our formation in 2009. Mr. Botein is also the Vice Chairman of PNMAC, which is the parent company of PCM, our external manager, and PLS, our servicer, and also serves as a member of the board of PCM. Mr. Botein is a managing director of an affiliate of BlackRock Holdco, one of the selling shareholders named in this prospectus supplement. Mr. Botein previously served as a managing director of an affiliate of Highfields from March 2003 through June 2009.



PLAN OF DISTRIBUTION

The common shares covered by this prospectus supplement may be offered for resale from time to time by the selling shareholders. We have registered the common shares covered by this prospectus supplement for resale to provide the selling shareholders with freely tradable securities. This prospectus supplement does not necessarily mean that the selling shareholders will offer or sell any of the common shares covered by this prospectus supplement. We will not receive any proceeds from the sale of any common shares by the selling shareholders from time to time pursuant to this prospectus supplement.

From time to time, the selling shareholders may transfer, pledge, donate, grant a security interest in or assign their common shares to lenders or others and each of such persons will be deemed to be "selling shareholders" for purposes of this prospectus supplement. Any donees, pledgees, transferees, secured parties, or other successors that intend to offer or resell common shares pursuant to this prospectus supplement will be named in a supplement to this prospectus supplement covering the sales of those common shares, if required.

Any selling shareholder may at any time and from time to time, in one or more transactions, sell all or a portion of the common shares covered by this prospectus supplement on the NYSE, in the over-the-counter market, on any other national securities exchange on which the common shares are then listed or traded, in negotiated transactions, in underwritten transactions, ordinary broker transactions or transactions in which a broker solicits purchases or otherwise, at prevailing market prices, at prices related to prevailing market prices or at privately negotiated prices. The offering prices of the common shares covered by this prospectus supplement from time to time will be determined by the applicable selling shareholder and, at the time of determination, may be higher or lower than the market price of the common shares on the NYSE.

The common shares covered by this prospectus supplement may be sold directly or through broker-dealers acting as principal or agent, or pursuant to a distribution by one or more underwriters on a firm commitment or best-efforts basis. In connection with an underwritten offering, underwriters or agents may receive compensation in the form of discounts, concessions or commissions from a selling shareholder or from purchasers of common shares covered by this prospectus supplement for whom they may act as agents, and underwriters may sell common shares covered by this prospectus supplement to or through dealers, and such dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for whom they may act as agents. In compliance with the Financial Industry Regulatory Authority, Inc., or FINRA, guidelines, the maximum commission or discount to be received by any FINRA member or independent broker dealer may not exceed 8% of the aggregate amount of the common shares offered pursuant to this prospectus supplement.

The methods by which the common shares covered by this prospectus supplement may be sold include: (1) a block trade in which the broker-dealer so engaged will attempt to sell the common shares covered by this prospectus supplement as agent but may position and resell a portion of the block as principal to facilitate the transaction; (2) a purchase by a broker-dealer as principal and resale by the broker-dealer for its account pursuant to this prospectus supplement; (3) an ordinary brokerage transaction and a transaction in which the broker solicits purchasers; (4) an exchange distribution in accordance with the rules of the NYSE; (5) privately negotiated transactions; (6) an underwritten transaction; (7) through short sale transactions following which the common shares are delivered to close out the short positions; (8) through the writing of options relating to such common shares; and (9) through a combination of the above methods of sale.

Additionally, the selling shareholders may enter into sale, forward sale and derivative or hedging transactions with broker-dealers or other third parties, or sell securities not covered by this prospectus supplement to third parties in privately negotiated transactions. In connection with those sale, forward sale or derivative or hedging transactions, the third parties may sell common shares covered by this

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prospectus supplement, including in short sale transactions and by issuing securities that are not covered by this prospectus supplement but are exchangeable for or represent beneficial interests in our common shares. If so, the broker-dealer or other third party may use common shares received under those sale, forward sale or derivative or hedging arrangements or common shares pledged by the selling shareholders or borrowed from the selling shareholders or others to settle such third party sales or to close out any related open borrowings of stock. The broker-dealers and third parties may deliver this prospectus supplement in connection with any such transactions. The broker-dealer or third party in such sale transactions may be deemed to be an underwriter and, if so, will be identified in a supplement to this prospectus supplement covering the sale of those common shares.

Any selling shareholder and any broker-dealer that participates with the selling shareholders or any third party to a derivative transaction in the sale of the common shares covered by this prospectus supplement may be deemed to be an "underwriter" under the Securities Act, and any profits on the sale of the common shares by such selling shareholder and any discounts, commissions or concessions received by any such broker-dealer might be deemed to be underwriting discounts and commissions under the Securities Act. Underwriters, dealers or agents may be entitled, under agreements entered into with us, to indemnification against and contribution toward certain liabilities, including liabilities under the Securities Act.

Selling shareholders who are registered broker-dealers or affiliate(s) of registered broker-dealers may be deemed to be "underwriters" under the Securities Act. Each of the selling shareholder(s) has represented to us that (1) the common shares shown as offered by such selling shareholder were acquired in the ordinary course of business and (2) at the time such common shares were acquired, such selling shareholder had no arrangements or understandings, directly or indirectly, with any person, to distribute such common shares.

To the extent required, upon being notified by a selling shareholder that any arrangement has been entered into with any agent, underwriter or broker-dealer for the sale of the common shares through a block trade, special offering, exchange distribution or secondary distribution or a purchase by any agent, underwriter or broker-dealer(s), the name(s) of the selling shareholder(s) and of the participating agent, underwriter or broker-dealer(s), specific common shares to be sold, the respective purchase prices and public offering prices, any applicable commissions or discounts, and other facts material to the transaction will be set forth in a supplement to this prospectus supplement covering the sale of those common shares.

In order to comply with state securities laws, if applicable, the common shares covered by this prospectus supplement may be sold only through registered or licensed brokers or dealers. In addition, in specific states, the common shares covered by this prospectus supplement may not be sold unless they have been registered or qualified for sale in such state or an exemption from such registration or qualification requirement is available and is complied with.

Pursuant to a registration rights agreement, dated as of August 4, 2009, or the registration rights agreement, among us and the selling shareholders, we will pay the following costs and expenses in connection with the common shares covered by this prospectus supplement: (i) all registration and filing fees; (ii) fees and expenses of compliance with securities or "blue sky" laws (including fees and disbursements of counsel in connection with blue sky qualifications of such common shares); (iii) printing expenses; (iv) the fees and expenses incurred in connection with the listing of such common shares; (v) FINRA fees; (vi) fees and disbursements of our counsel and fees and expenses for our independent public accountants (including the expenses or costs associated with the delivery of any opinions or comfort letters required in connection with sales of such common shares); (vii) the fees and expenses of any special experts retained by us; and (viii) the reasonable fees and expenses of one legal counsel selected by selling shareholders holding a majority of such common shares. The selling

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shareholders will pay all other costs and expenses incurred in connection with sales of the common shares covered by this prospectus supplement, including underwriting discounts or selling commissions.

Pursuant to the registration rights agreement, we have agreed to indemnify each selling shareholder, each of their respective officers, employees, affiliates, trustees, directors, partners, members, attorneys and agents and each person, if any, who controls such selling shareholder within the meaning of Section 15 of the Securities Act or Section 20(a) of the Exchange Act, against certain expenses, losses or liabilities, including liabilities arising under the Securities Act. Each selling shareholder has severally agreed to indemnify us and each of our officers, employees, affiliates, trustees and agents and each person who controls us within the meaning of the Securities Act and each underwriter, if any, and each person, if any, who controls such underwriter within the meaning of the Securities Act against certain expenses, losses or liabilities, including liabilities arising under the Securities Act.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy any of these documents at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You may also read and copy any of these documents at the NYSE's office at 20 Broad Street, New York, New York 10005. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. Our SEC filings are also available over the Internet at the SEC's website at http://www.sec.gov. In addition, copies of our SEC filings are available free of charge through our website (www.pennymac-reit.com) as soon as reasonably practicable after filing with the SEC. The information contained on our website is not part of, or incorporated by reference into, this prospectus supplement or the accompanying prospectus.

This prospectus supplement and the accompanying prospectus are only part of a registration statement on Form S-3 we have filed with the SEC under the Securities Act and therefore omit some of the information contained in the registration statement. We have also filed exhibits to the registration statement which are excluded from this prospectus supplement and the accompanying prospectus, and you should refer to the applicable exhibit for a complete description of any statement referring to any contract or other document. You may inspect or obtain a copy of the registration statement, including the exhibits, as described in the previous paragraph.

DOCUMENTS INCORPORATED BY REFERENCE

SEC rules allow us to incorporate by reference information into this prospectus supplement and the accompanying prospectus. This means that we can disclose important information to you by referring you to another document. Any information referred to in this way is considered part of this prospectus supplement and the accompanying prospectus from the date we file that document. Any reports filed by us with the SEC after the date of this prospectus supplement and before the date that the selling shareholders have sold all of the common shares offered by this prospectus supplement or the offering is otherwise terminated will automatically update and, where applicable, supersede any information contained in this prospectus supplement and the accompanying prospectus or incorporated by reference herein and therein. We incorporate by reference into this prospectus supplement and the accompanying prospectus the following documents or information filed with the SEC (other than, in each case, documents or information deemed to have been furnished and not filed in accordance with SEC rules):

our Annual Report on Form 10-K for the fiscal year ended December 31, 2011;

our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2012;

our Definitive Proxy Statement on Schedule 14A filed on April 6, 2012;

our Current Reports on Form 8-K filed on April 4, 2012, May 11, 2012, May 22, 2012, May 30, 2012, June 5, 2012 (other than Item 7.01), July 10, 2012 and July 31, 2012; and

the description of our common shares included in our registration statement on Form 8-A filed on July 23, 2009.

All documents that we file (but not those that we furnish) pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act on or after the date of this prospectus supplement and before the date that the selling shareholders have sold all of the common shares offered by this prospectus supplement or the offering is otherwise terminated shall be deemed to be incorporated by reference into this prospectus supplement, and the accompanying prospectus and will automatically update and supersede the information in this prospectus supplement, the accompanying prospectus and any previously filed documents.

We will provide without charge to each person, including any beneficial owner, to whom this prospectus supplement is delivered, upon his or her written or oral request, a copy of any or all documents referred to above that have been or may be incorporated by reference into this prospectus supplement and the accompanying prospectus, excluding exhibits to those documents unless they are specifically incorporated by reference into those documents. Requests for those documents should be directed to us as follows: PennyMac Mortgage Investment Trust, 6101 Condor Drive, Moorpark, California 93021, Attn: Investor Relations, Telephone: (818) 224-7442.

PROSPECTUS

PennyMac Mortgage Investment Trust

Common Shares

Preferred Shares

Warrants to Purchase Common Shares or Preferred Shares

We may offer, issue and sell from time to time, together or separately, the securities described in this prospectus. We will provide the specific terms of any securities we may offer in supplements to this prospectus.

In addition, selling shareholders to be named in a prospectus supplement may offer and sell from time to time these securities in such amounts as set forth in a prospectus supplement.

You should read this prospectus and any applicable prospectus supplement carefully before you invest. This prospectus may not be used to offer and sell any securities unless accompanied by a prospectus supplement describing the amount of and terms of the offering of those securities.

We or any selling shareholder may offer and sell these securities to or through one or more underwriters, dealers or agents, or directly to purchasers on a continuous or delayed basis. We or any selling shareholder reserves the sole right to accept, and together with any underwriters, dealers and agents, reserves the right to reject, in whole or in part, any proposed purchase of securities. The names of any underwriters, dealers or agents involved in the sale of any securities, the specific manner in which they may be offered and any applicable commissions or discounts will be set forth in the prospectus supplement covering the sales of those securities.

Our common shares of beneficial interest, or our common shares, \$0.01 par value per share, are listed on the New York Stock Exchange under the trading symbol "PMT." On June 20, 2012, the closing price of our common shares on the New York Stock Exchange was \$19.37.

Investing in our securities involves risks. You should carefully read and consider the risks described under the section entitled "Risk Factors" included in our most recent Annual Report on Form 10-K and any subsequent Quarterly Reports on Form 10-Q, in prospectus supplements relating to specific offerings of securities and in other information that we file with the Securities and Exchange Commission before making a decision to invest in our securities.

We impose certain restrictions on the ownership and transfer of our common shares and our shares of beneficial interest. You should read the information under the section entitled "Description of Shares of Beneficial Interest Restrictions on Ownership and Transfer" in this prospectus for a description of these restrictions.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is June 21, 2012.

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You should rely only on the information contained in or incorporated by reference into this prospectus, any applicable prospectus supplement or any applicable free writing prospectus. We have not authorized any other person to provide you with different or additional information. If anyone provides you with different or additional information, you should not rely on it. This prospectus and any applicable prospectus supplement do not constitute an offer to sell, or a solicitation of an offer to purchase, any securities in any jurisdiction to or from any person to whom or from whom it is unlawful to make such offer or solicitation in such jurisdiction. You should assume that the information appearing in this prospectus, any applicable prospectus supplement, any applicable free writing prospectus and the documents incorporated by reference herein or therein is accurate only as of their respective dates or on the date or dates which are specified in these documents. Our business, financial condition, results of operations and prospects may have changed since those dates.

ABOUT THIS PROSPECTUS

This prospectus is part of a "shelf" registration statement that we have filed with the Securities and Exchange Commission, or the SEC. By using a shelf registration statement, we or any selling shareholder may sell, at any time and from time to time, in one or more offerings, any combination of the securities described in this prospectus. The exhibits to our registration statement contain the full text of certain contracts and other important documents that we have summarized in this prospectus or that we may summarize in a prospectus supplement. Since these summaries may not contain all the information that you may find important in deciding whether to purchase the securities offered, you should review the full text of these documents. The registration statement and the exhibits can be obtained from the SEC as indicated under the sections entitled "Where You Can Find More Information" and "Documents Incorporated By Reference."

This prospectus only provides you with a general description of the securities we or any selling shareholder may offer, which is not meant to be a complete description of each security. Each time we or any selling shareholder sells securities, we will provide a prospectus supplement that contains specific information about the terms of those securities. The prospectus supplement may also add, update or change information contained in this prospectus. If there is any inconsistency between the information in this prospectus and any prospectus supplement, you should real carefully both this prospectus and any prospectus supplement together with the additional information described under the sections entitled "Where You Can Find More Information" and "Documents Incorporated By Reference."

Unless otherwise indicated or the context requires otherwise, in this prospectus and any prospectus supplement hereto, references to "our company," "we," "us" and "our" mean PennyMac Mortgage Investment Trust and its consolidated subsidiaries, including PennyMac Operating Partnership, L.P., or our operating partnership.

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PENNYMAC MORTGAGE INVESTMENT TRUST

We are a specialty finance company that invests primarily in residential mortgage loans and mortgage-related assets. Our objective is to provide attractive risk-adjusted returns to our investors over the long-term, principally through dividends and secondarily through capital appreciation. We intend to achieve this objective largely by investing in distressed mortgage loans and engaging in correspondent lending in which we acquire, pool, securitize or sell newly originated prime credit quality residential mortgage loans and retain the related mortgage servicing rights. We may supplement these activities through participation in other mortgage-related activities, which are in various states of analysis, planning or implementation, including: (i) the acquisition of REIT-eligible mortgage-backed securities, or MBS; (ii) the acquisition of mortgage servicing rights from liquidating and other institutions; and (iii) providing inventory financing of mortgage loans for mortgage lenders.

We are externally managed by our affiliate, PNMAC Capital Management, LLC, or PCM, pursuant to a management agreement. PCM is an investment adviser registered with the SEC that specializes in, and focuses on, residential mortgage loans. Most of our mortgage loan portfolio is serviced on our behalf primarily by another affiliate, PennyMac Loan Services, LLC, or PLS, pursuant to a loan servicing agreement.

We conduct substantially all of our operations, and make substantially all of our investments, through our operating partnership and its subsidiaries. We are the sole limited partner and one of our subsidiaries is the sole general partner of our operating partnership.

We believe that we qualify, and we have elected to be taxed, as a REIT under the Internal Revenue Code of 1986, or the Internal Revenue Code, beginning with our taxable period ended on December 31, 2009.

Our principal executive offices are located at 6101 Condor Drive, Moorpark, California 93021. Our telephone number is (818) 224-7442. Our website is www.pennymac-reit.com. The information contained on our website is not part of, or incorporated by reference into, this prospectus. We have included our website address only as an inactive textual reference and do not intend it to be an active link to our website.

RISK FACTORS

Investing in our securities involves risks. You should carefully read and consider the risks described under the section entitled "Risk Factors" in our most recent Annual Report on Form 10-K and any subsequent Quarterly Reports on Form 10-Q, which are incorporated by reference herein, as well as the other information contained in or incorporated by reference into this prospectus and in any applicable prospectus supplement, before making a decision to invest in our securities. Each of the risks described in these documents could materially and adversely affect our business, financial condition, results of operations and prospects, and could result in a partial or complete loss of your investment.

CAUTIONARY STATEMENT REGARDING FORWARD LOOKING STATEMENTS

This prospectus and the documents we incorporate herein by reference contain certain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, which 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

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statements include: (i) projections of our revenues, income, earnings per share, capital structure or other financial items; (ii) descriptions of our plans or objectives for future operations, products or services; (iii) forecasts of our future economic performance, interest rates, profit margins and our share of future markets; and (iv) 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 our expectations.

You should not place undue reliance on any forward-looking statement, each of which speaks only as of the date on which it is made. We expressly state that we have no current intention to update any forward-looking statement, whether as a result of new information, future events or otherwise, unless required by law.

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

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;

volatility in our industry, interest rates and spreads, the debt or equity markets, the general economy or the residential finance and real estate markets specifically, whether the result of market events or otherwise;

events or circumstances which undermine confidence in the financial markets or otherwise have a broad impact on financial markets, such as a credit downgrade of U.S. Government obligations, 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, or in consumer confidence and spending habits and political conditions from those expected;

continued declines in residential real estate and significant changes in U.S. housing prices and/or activity in the U.S. housing market;

the availability of, and level of competition for, attractive risk-adjusted investment opportunities in residential mortgage loans and mortgage-related assets that satisfy our investment objectives and investment strategies;

our success in winning bids to acquire loans;

the concentration of credit and real estate risks to which we are exposed;

the degree and nature of our competition;

changes in personnel and lack of availability of qualified personnel;

our dependence on PCM and PLS and potential conflicts of interest with PCM, PLS and their affiliated entities, and the performance of such entities;

the availability, terms and deployment of short-term and long-term capital;

the adequacy of our cash reserves and working capital;

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our ability to match the interest rates and maturities of our assets with our financing;

the costs and effectiveness of our hedging efforts in relation to our commitments to purchase, our inventory of mortgage loans acquired for sale and our investments in mortgage servicing rights;

the timing and amount of cash flows, if any, from our investments;

unanticipated increases in financing and other costs, including a rise in interest rates;

the performance, financial condition and liquidity of borrowers;

incomplete or inaccurate information or documentation provided by customers or counterparties, or adverse changes in the financial condition of our customers and counterparties;

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;

our ability to foreclose on our mortgage loan investments and liquidate the resulting real estate in a timely and cost-effective manner or at all;

increased prepayments of the mortgages and other loans underlying our MBS and other investments;

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 and contingencies when measuring and reporting upon our financial condition and income;

our failure to maintain appropriate internal controls over financial reporting;

our ability to obtain and/or maintain licenses and other approvals in those jurisdictions where required to conduct our business;

our ability to comply with various federal, state and local laws that govern our business;

developments in the secondary markets for our mortgage loan products;

legislative and regulatory changes that impact the mortgage loan industry or housing market;